

Program Evaluation for Prevention: Partnerships for Success Final Evaluation Report

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Disclaimer

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Acronym List

ATOD	alcohol, tobacco, and other drugs
CAPT	Center for the Application of Prevention Technologies
CBHSQ	Center for Behavioral Health Statistics and Quality
CDC	Centers for Disease Control and Prevention
CLI-R	Community-Level Instrument–Revised
CSAP	Center for Substance Abuse Prevention
EBPPP	evidence-based programs, policies, and practices
EBPW	evidence-based practices workgroup
EOW	epidemiological outcomes workgroup
EQ	evaluation question
FY	fiscal year
GLI-R	Grantee-Level Instrument–Revised
LCA	latent class analysis
MRT	Management Reporting Tool
NPDS	National Poisoning Data System
NSDUH	National Survey on Drug Use and Health
PD	Project Director
PDM	prescription drug misuse and abuse
PEP-C	Program Evaluation for Prevention Contract
PFS	Partnerships for Success
QPR	Quarterly Progress Report (from grantees)
SAMHSA	Substance Abuse and Mental Health Services Administration
SD	standard deviation
SE	standard error
SIG	State Incentive Grant
SPF	Strategic Prevention Framework
SPF-PFS	Strategic Prevention Framework Partnerships for Success
SPF SIG	Strategic Prevention Framework State Incentive Grant
T/TA	training and technical assistance
UAD	underage drinking

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STRATEGIC PREVENTION FRAMEWORK— PARTNERSHIPS FOR SUCCESS

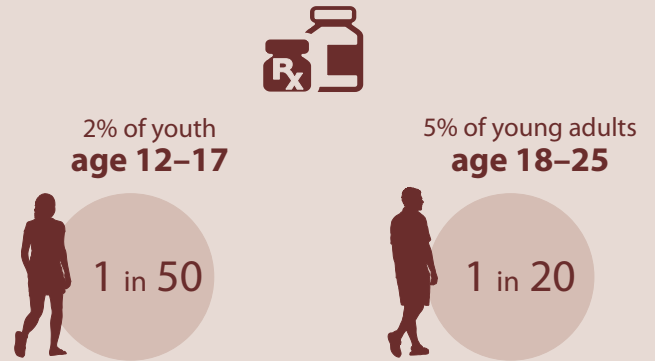
FY2014-FY2017 HIGHLIGHTS

After alcohol, prescription drugs are second only to marijuana as the drugs most abused by teenagers.

Although **underage drinking (UAD)** rates have dropped over the past decade, 1 in 5 youth **age 12–20** continue to report recent use of alcohol (20%).¹



In 2016, reported recent **prescription drug misuse (PDM)** in the past 30 days¹



Abuses of alcohol and prescription drugs result in serious health, safety, social, and economic consequences, including the **deaths of 4,300 underage youth from alcohol each year² and 1,500 young people age 15–24 from prescription drug overdoses in 2015.³**

The Substance Abuse and Mental Health Services Administration (SAMHSA) provides Strategic Prevention Framework Partnerships for Success (SPF-PFS) funds to state, jurisdiction, and tribal grantees **to strengthen community capacity to address and implement interventions to prevent UAD among people age 12–20 and PDM among people age 12–25.**

SAMHSA awards PFS grantees annual amounts of \$250,000–\$8.1 million, depending on prevalence rates of UAD and PDM and average costs of delivering related prevention and treatment services. As part of PFS, grantees and their subrecipients engage in the SPF planning process, a data-driven process that includes assessing needs, building capacity, planning, implementing interventions, and evaluating their efforts.

The SPF-PFS program currently covers four cohorts of funded grantees—

*PFS 2013,
PFS 2014,
PFS 2015, and
PFS 2016*

—consisting of 70 grantees and the almost 700 communities they have funded thus far.

Interventions Implemented

From FY2014 through FY2017, PFS interventions reached over 55 million individuals.

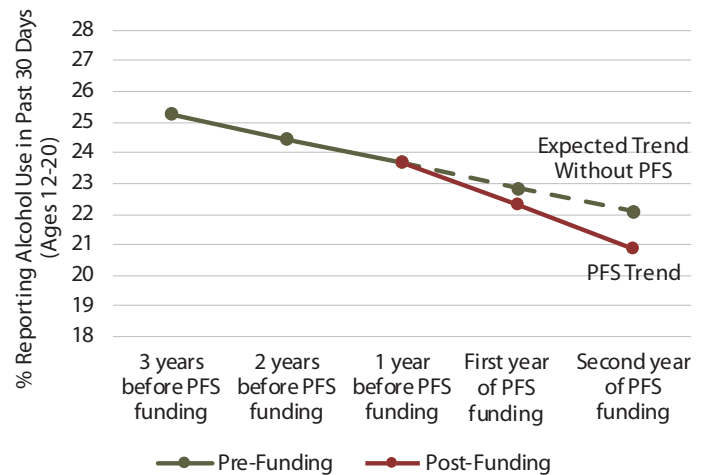
- 537 communities funded by 61 grantees **implemented 2,281 separate PFS intervention activities.**
- **The majority of communities** implemented information dissemination, environmental strategies, and prevention education interventions (Center for Substance Abuse Prevention strategy types).
- **About 51% of communities implemented media campaigns,** the most often implemented intervention activity.
- **85% of communities implemented at least one evidence-based program, policy, or practice (EBPPP);** communities categorized 49% of their interventions as EBPPPs.

Outcomes

In comparison to prior time periods, after receiving PFS grant funding or beginning PFS interventions:

- PFS state grantees reduced past-30-day UAD by an additional 0.6% per year and binge drinking by an additional 0.7% per year (National Survey of Drug Use and Health data);
- Among young adults age 18–25, PFS state grantees reduced misuse of prescription drugs in the past 12 months by an additional 0.8% per year (National Survey of Drug Use and Health data).
- Grantees that funded a greater proportion of their counties for PFS had greater decreases in poisoning calls for stimulants, sedatives, and opiates.
- Subrecipient communities reduced PDM by an additional 0.6% per year.

NSDUH outcomes: Underage drinking decreased more steeply in states after they received PFS funding



Other Highlights

Grantees

- Most grantees report that they have the capacity to collect data on intervention implementation (77%), share community-level data with key stakeholders (73%), and build a data infrastructure to ensure sustainability (76%).
- To ensure sustainability, many grantees also report creating partnerships (90%), integrating the SPF model into their prevention practices (83%), and fostering community involvement (80%).
- Over the course of their grants, grantees involved an average of more than 16 members in their Epidemiological Outcomes Workgroups and 3 members in their Evidence-Based Practices Workgroups (with 3 and 1 meetings held over the year for each group, respectively). Most grantees could enhance the involvement of their Evidence-Based Practices Workgroups.
- Over the course of their grants, PFS 2013 and PFS 2014 grantees increased the integration of their prevention system along with their ability to provide workforce development and their capacity to collect and analyze data.
- For grantees, greater capacity to collect and analyze data, more available workforce development mechanisms, more existing efforts to sustain their prevention system, and more active epidemiological workgroups were related to greater reductions in PDM and greater increases in perceptions of parental or friend disapproval of alcohol.

Communities

- At the beginning of their PFS grants, most community subrecipients reported that they had sufficient capacity to implement their interventions. Specifically, their staff had the right skills (80%), experience with the target populations (87%), experience with relevant interventions (85%), and experience collaborating with other organizations (88%).
- Through PFS, community subrecipients received extensive technical assistance to build their capacities, including in strategic plan development (received by 77% of community subrecipients); needs and resource assessment (77%); staff, task force, or coalition member training (71%); evaluation (69%); cultural competence (69%); and intervention implementation (65%).
- Communities involved key stakeholders or partners in their PFS activities. These included representatives from schools (reported by 90% of community subrecipients), law enforcement (87%), health care professionals or agencies (82%); youth groups (82%), and substance abuse prevention organizations (79%). Fewer communities involved the military (27%) or lesbian, gay, bisexual, transgender, or questioning (LGBTQ) organizations (28%).
- Almost all community subrecipients in the PFS 2013, PFS 2014, and PFS 2015 cohorts had engaged in each SPF step by the end of FY2017.
- The most common barriers or challenges to community PFS activities included “cultural norms, attitudes, or practices favoring substance use” (reported by 87% of community subrecipients), “a lack of community awareness of the extent or consequences of substance use” (86%), and “easy access to alcohol for underage youth” (84%) or “easy access to prescription drugs for nonmedical use” (78%).
- Community subrecipients did not show consistent relationships between community outcomes and intervention characteristics or community infrastructure, capacity, or partnerships.

¹ Substance Abuse and Mental Health Services Administration. (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>

² Centers for Disease Control and Prevention (CDC). (2018). *Fact sheets—Underage drinking*. Atlanta, GA: Author. Retrieved from <https://www.cdc.gov/alcohol/fact-sheets/underage-drinking.htm>

³ National Institute on Drug Abuse Blog Team. (2017). *Drug overdoses in youth*. Retrieved from <https://teens.drugabuse.gov/drug-facts/drug-overdoses-youth>

1. Introduction

Underage drinking (UAD) and prescription drug misuse and abuse (PDM) cause serious economic and personal consequences in the United States. The sale of alcohol to underage drinkers results in an estimated \$61.9 billion in harm to society annually through medical spending, property losses, lost wages, and the loss of quality-adjusted life years (Miller, Levy, Spicer, & Taylor, 2006; Sacks et al., 2013). Prescription opioid abuse cost an estimated \$78.5 billion per year, with \$26 billion of this total for health care costs (Florence, Zhou, Luo, & Xu, 2016). UAD and PDM may result in serious health, safety, social, emotional, academic, and familial consequences (Office of Juvenile Justice and Delinquency Prevention, 2012). Most seriously, excessive drinking results in about 4,300 deaths of underage youth each year (Centers for Disease Control and Prevention (CDC), 2018), and in 2015 more than 1,500 young people age 15–24 died from prescription drug overdoses (opioids or benzodiazepines; National Institute on Drug Abuse Blog Team, 2017).

Over the past decade, many evaluation studies have demonstrated that prevention interventions and strategies reduce substance abuse (Das, Salam, Arshad, Finkelstein, & Bhutta, 2016; Harding et al., 2016). The decreasing rates of current and binge alcohol use among 12- to 20-year-olds (Substance Abuse and Mental Health Services Administration [SAMHSA], 2017) show how effective prevention interventions have become. Specifically, the rate of current alcohol use among 12- to 20-year-olds decreased from 28.8% in 2002 to 19.3% in 2016, and the binge drinking rate declined from 19.3% to 12.1%.

Although reduced, continued UAD still poses risks to young people, as does PDM, an emergent problem that has recently become a focus of prevention efforts. Prescription drugs follow alcohol and marijuana as the type of drug most abused by youth age 12–17 (SAMHSA, 2017). National Survey on Drug Use and Health (NSDUH) estimates from 2016 indicate that approximately 4.6% of respondents age 18–25 and about 1.6% of respondents age 12–17 report PDM.

This report focuses on the evaluation of a federally supported prevention program that addresses both UAD and PDM, the Strategic Prevention Framework Partnerships for Success (SPF-PFS).

1.1 Strategic Prevention Framework Partnerships for Success

The goals of the SPF-PFS are to

- prevent the onset and reduce the progression of substance abuse, prioritizing UAD among people age 12–20, PDM among people age 12–25, or both;
- reduce substance abuse-related problems (e.g., crashes, emergency department visits);
- strengthen prevention capacity and infrastructure at the state and community levels; and
- leverage, redirect, and align statewide funding streams and resources for prevention.

SAMHSA provided SPF-PFS funding directly to states, jurisdictions, and tribal organizations. In this document, “grantee” refers explicitly to these direct fund recipients. In most cases, SPF-PFS–funded grantees passed most of their SPF-PFS funding directly to community subrecipients, which then went through the SPF process, including implementing evidence-based substance use prevention interventions (see *Exhibit 1*). In addition to the intervention implementation, the PFS program’s SPF process included assessing community needs related to UAD and PDM, producing a strategic plan for the PFS activities, building capacity of the prevention workforce and community partners, and evaluating the PFS activities. Throughout the process, PFS grantees and community subrecipients also focused on the cultural competence and sustainability of their activities.

Exhibit 1. SAMHSA’s Strategic Prevention Framework (SPF)



In this report, “community subrecipient” refers explicitly to the organizations that received funding from the state, such as prevention coalitions; specific local providers of health care, treatment, or prevention; other local government agencies and nonprofit organizations; and other entities as described in **Section 2.3.3**. The term “community” in this report refers to the geographic area and population the community subrecipient targeted with its PFS efforts. In a few cases, jurisdictions and tribal organizations acted as both grantees and community subrecipients and are represented as both in this report.

1.1.1 Cohorts, Grantees, and Community Subrecipients

SAMHSA funded the Program Evaluation for Prevention Contract (PEP-C) to evaluate several initiatives, including the SPF-PFS program. The PEP-C cross-site evaluation of the SPF-PFS program covers four cohorts of funded grantees—PFS 2013, PFS 2014, PFS 2015, and PFS 2016. Each cohort received funding for 5 years. The timing of a grantee’s PFS funding depended on its responses to SAMHSA requests for applications, its demonstrated needs related to UAD and PDM, and its completion of its prior SPF State Incentive Grants (SPF SIGs). As it did for PFS, SAMHSA designed the prior SPF SIG program to prevent the onset and reduce the progression of substance abuse, reduce substance abuse-related problems in communities, and build prevention capacity and infrastructure at the grantee and community levels. SAMHSA developed the PFS grant program to build on the SPF SIG program successes.¹

Exhibit 2 shows the total number and type of grantees funded in each of the evaluated PFS cohorts, the number of community subrecipients funded by the grantees through FY2017, and the time frame for each cohort’s funding.

¹ Idaho had not completed its SPF SIG grant before the PFS 2016 cohort grants were awarded. It thus had not yet received a PFS grant and was not included in this evaluation.

Exhibit 2. Evaluated Cohorts in SAMHSA’s Strategic Prevention Framework Partnerships for Success Program

Cohort	Number		Approximate Funding Period	Cohort Includes
	Grantees	Community Subrecipients		
Partnerships for Success (PFS) 2013	16	229	October 2013–September 2018	14 states & 2 territories
PFS 2014	21	177	October 2014–September 2019	12 states, 3 territories, 5 tribal organizations, & the District of Columbia
PFS 2015 (New)	17	100	October 2015–September 2020	7 states, 3 territories, & 7 tribal organizations
PFS II/2015	14	175	October 2015–September 2020	14 states
PFS 2016	2	14	October 2016–September 2021	2 states
Total	70	695		

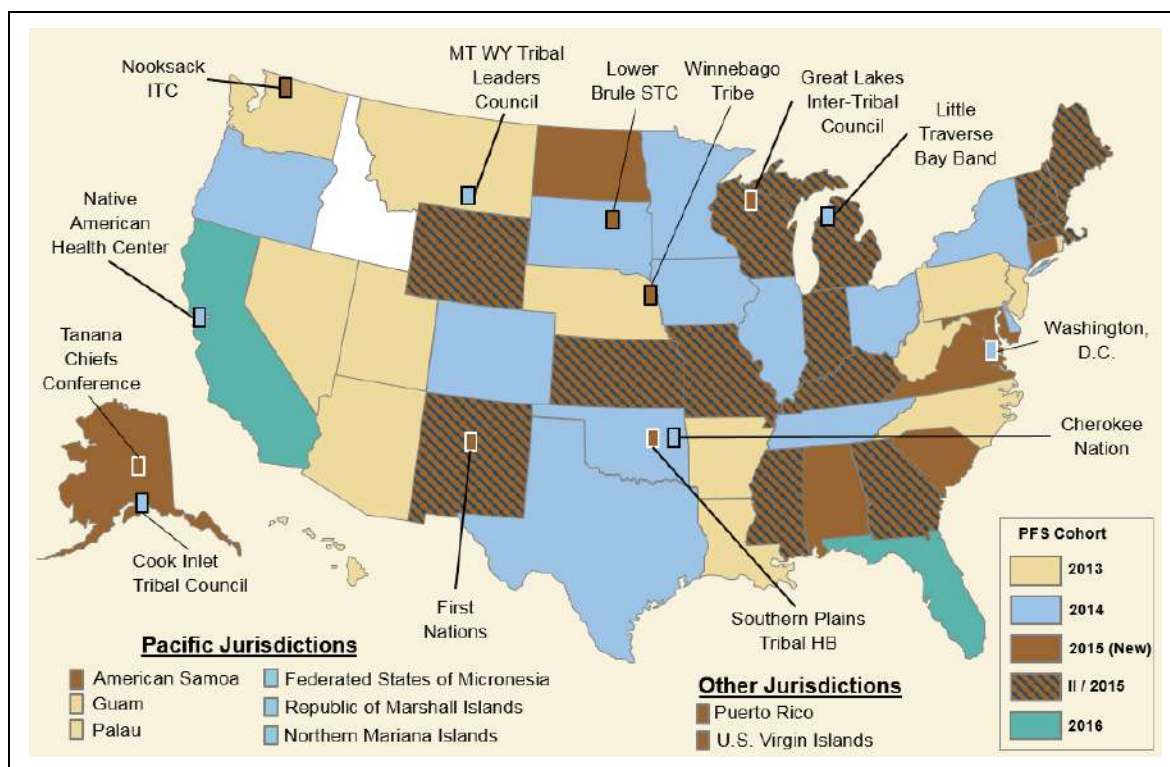
Notes: The PFS 2015 cohort is separated by whether grantees previously received PFS II cohort pilot grants (PFS II/2015) or received a first-time PFS grant under PFS 2015 (New).

For the PFS 2015 cohort, 14 of the state grantees previously received funding from FY2012 through FY2014 under the shorter PFS II “pilot” grant cohort. We label these grantees in this report as PFS II/2015 and label the grantees new to the PFS grant for PFS 2015 as PFS 2015 (New). Similarly, community subrecipients that received funding through both PFS II and PFS 2015 grants are labeled PFS II/2015, but those that received funding only under the PFS 2015 grants are labeled PFS 2015 (New), even if their *grantee* received both grants.²

Exhibit 3 shows the geographic distribution of the SPF-PFS grantees from PFS 2013 through PFS 2016.

² Although this report acknowledges differences between PFS 2015 grantees that received prior PFS II funding and those that did not, it includes only data collected during the PFS 2015 grants.

Exhibit 3. Geographic Distribution of PFS Grantees



Community Subrecipient Selection

SPF-PFS program requirements emphasized that grantees should fund community subrecipients with the highest need and lowest capacity. According to interviews with grantee Project Directors, most used noncompetitive means to select their community subrecipients, including conducting needs assessments and basing selection on socioeconomic status factors or on rates of UAD, PDM, or related consequences in the communities. Some grantees drew on previous partnerships by, for example, selecting recipients of earlier SPF SIG funding. Most grantees that used competitive means to select subrecipients issued a formal solicitation request for applications. Grantees also used a hybrid approach of inviting need-specified regions, schools, communities, or types of organizations to participate in a competitive application process. Relatively few grantees focused on low capacity in the selection process, but those who did used a broad variety of criteria, including implementation readiness and resource availability (staff, financial, etc.).

Community Subrecipient Funding and Implementation Lag

SAMHSA's Center for Substance Abuse Prevention (CSAP) expected PFS grantees to select and fund their community subrecipients by the end of the first year of the grants and for those subrecipients to begin implementing interventions quickly for several reasons, including:

- All PFS grantees previously received SPF SIG grants. Therefore, they knew the SPF process and had used SPF SIG funding to build prevention capacity in their states, tribes, and jurisdictions.
- Many PFS grantees identified high-need communities or potential community subrecipients in their PFS grant proposals.

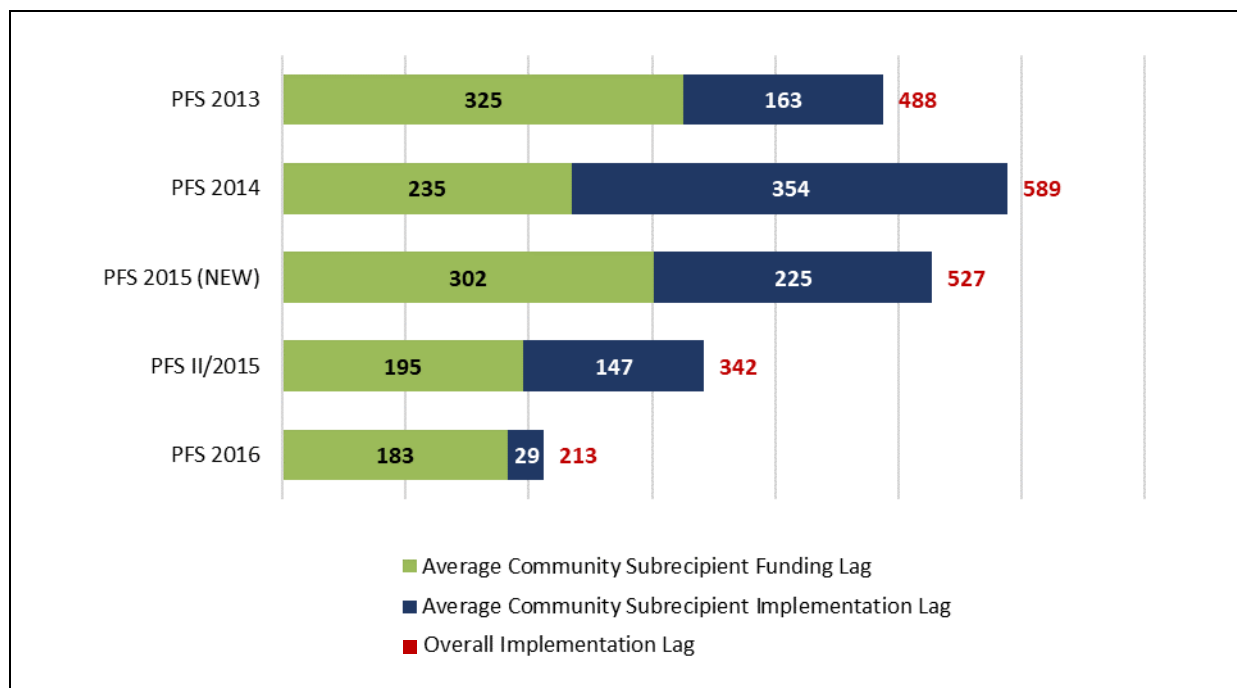
Overall implementation lag measures the average number of days from when grantees received their funds from SAMHSA to when their community subrecipients implemented their first interventions. The overall implementation lag consists of two separate time periods:

- **Community subrecipient funding lag**, or how long it took grantees to select and fund their community subrecipients after the grantees received their funding from SAMHSA; and
- **Community subrecipient implementation lag**, or how long it took community subrecipients to implement their first intervention after they received funding from their state, jurisdiction, or tribal grantee.

Exhibit 4 shows the average number of days for each PFS cohort for overall implementation lag, community subrecipient funding lag, and community subrecipient implementation lag through FY2017.

Exhibit 4. Number of Days From Grantee Funding to Community Subrecipient Intervention Implementation

On average, communities began implementing interventions about 16 months (484 days) after their grantees received funding.



Notes: This analysis included 14 grantees and 214 community subrecipients from the PFS 2013 cohort, 15 grantees and 119 community subrecipients from the PFS 2014 cohort, 12 grantees and 77 community subrecipients from the PFS 2015 (New) cohort, 14 grantees and 146 community subrecipients from the PFSII/2015 cohort, and 2 grantees and 6 community subrecipients from the PFS 2016 cohort. PFS = Partnerships for Success.

When including only the cohorts that have had more time to begin implementing (PFS 2013, PFS 2014, and PFS 2015), on average community subrecipients began implementing interventions about 16 months after their grantee received funding. Grantees took about 9 months to fund community subrecipients, which in turn took 7 more months to begin implementing interventions. PFS 2014 and PFS II/2015 grantees generally took the least time to fund their community subrecipients, but PFS 2014 community subrecipients took the most time to begin implementing interventions after they received funding. These implementation lags affect outcomes analyses in this report, in that PFS grantees and community subrecipients could not demonstrate effects on outcomes until after they began implementing interventions to address those outcomes.

In the Project Director Interviews, grantees provided some insights on why it took a relatively long time to fund their community subrecipients. The main reasons included:

- bureaucratic challenges, such as delays in the state or territorial approval process for community subrecipient-related requests for proposals;
- staffing and turnover issues, which limited grantees' ability to implement their PFS grants; and
- organizational challenges at the state, territory, or tribal level, such as changes in state-level strategic direction (e.g., change in the grantee-wide prevention priorities and strategies) or in agency organization (e.g., a consolidation of regional prevention resources).

Section 2.3.3 provides more detailed information on why some community subrecipients took longer than others to begin implementing interventions.

Target Priorities and Outcomes

CSAP required SPF-PFS grantees to target UAD among people age 12–20, PDM among people age 12–25, or both. Grantees could choose to target an additional priority if they demonstrated a need to address that priority. The PEP-C team looked at grantee applications, evaluation plans, and information entered in the PEP-C Management Reporting Tool (MRT) to determine the priorities that grantees planned to target. **Exhibit 5** shows the distribution of the priorities across the cohorts. In addition to UAD and PDM, several grantees received approval to target marijuana because of their jurisdictions' movement toward marijuana decriminalization or legalization. **Appendix A** lists the individual grantees by cohort, the substances prioritized by each, and their numbers of funded community subrecipients from FY2013 through FY2017.

Exhibit 5. Grantees' Target Substance Priorities, by Cohort

Cohort	Target Priority			
	Underage Drinking	Prescription Drug Misuse	Marijuana	Other
PFS 2013	15	12	2	1
PFS 2014	18	9	3	1
PFS 2015 (New)	14	8	3	6
PFS II/2015	9	13	2	3
PFS 2016	0	2	0	1
Total	56	44	10	12

Notes: The PFS 2015 cohort is separated by whether grantees previously received PFS II cohort grants (PFS II/2015) or received a first-time PFS grant under PFS 2015 (New). This analysis included 16 grantees from the PFS 2013 cohort, 21 grantees from the PFS 2014 cohort, 17 grantees from the PFS 2015 (New) cohort, 14 grantees from the PFS II/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

Community subrecipients, in turn, identified target outcomes for their PFS prevention efforts, which should have prioritized one or more of the grantee's target substances. **Exhibit 6** shows the distribution of community subrecipients' targeted outcomes by cohort. Most community subrecipients identified two or more target substances. As required, all community subrecipients targeted UAD (underage use of alcohol, underage binge drinking, or both), PDM (by youth age 12–17, young adults age 18–25, or both), or both substances.

Exhibit 6. Community Subrecipients' Target Substance Priorities, by Cohort

Cohort	Target Priority				
	Underage Drinking	Prescription Drug Misuse	Marijuana	Heroin	Other
PFS 2013	197	160	35	0	24
PFS 2014	129	81	21	10	11
PFS 2015 (New)	157	168	13	11	32
PFS II/2015	46	70	12	0	5
PFS 2016	2	12	0	1	2
Total	531	491	81	22	74

Notes: Within-cohort totals are larger than the number of community subrecipients in that cohort, as community subrecipients often identified two or more priority outcomes. This analysis included 209 community subrecipients from the PFS 2013 cohort, 115 community subrecipients from the PFS 2014 cohort, 165 community subrecipients from the PFS 2015 (New) cohort, 44 community subrecipients from the PFS II/2015 cohort, and 4 community subrecipients from the PFS 2016 cohort. PFS = Partnerships for Success.

1.2 Objectives of the Cross-Site FY2017 Evaluation Report

The PEP-C cross-site evaluation of the SPF-PFS program aims to assess how and whether the PFS program achieved SAMHSA's goals of reducing UAD and PDM. This report meets that aim by focusing on the following objectives:

- analyzing outcomes at the grantee and community levels;
- describing grantee and community subrecipient intervention activities and other process factors; and
- examining the relationships between selected process factors (e.g., interventions implemented) and outcomes.

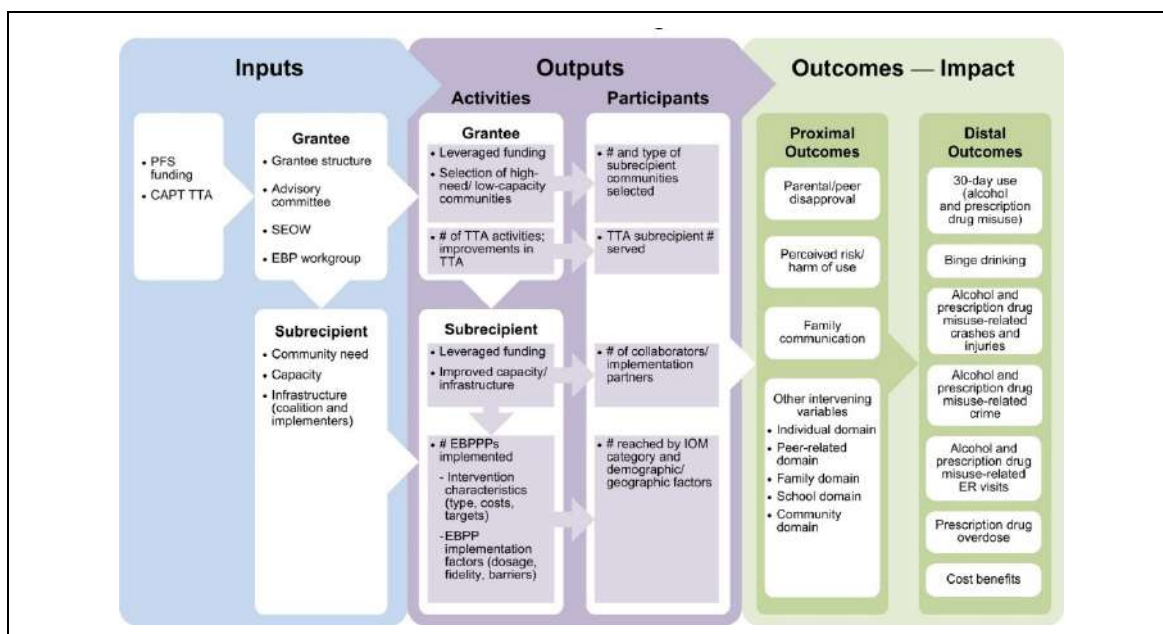
1.3 Cross-Site Evaluation Approach and Design

The PEP-C national cross-site evaluation of the SPF-PFS program combines qualitative and quantitative data and methodologies. It includes process and outcome components and addresses questions at the grantee and community levels.

1.3.1 Logic Model

Exhibit 7 provides the logic model for the PEP-C national cross-site SPF-PFS program evaluation.

Exhibit 7. Evaluation Logic Model



Note: CAPT = Center for the Application of Prevention Technologies; EBPPP = evidence-based programs, policies, and practices; ER = emergency room; IOM = Institute of Medicine; PFS = Partnerships for Success; SEOW = state epidemiological outcomes workgroup; TTA = training and technical assistance.

1.3.2 Evaluation Questions

The logic model provided the basis for organizing the PEP-C national cross-site SPF-PFS evaluation questions (EQs; see *Exhibit 8*), which, in turn, drove all other aspects of the evaluation. This report focuses on EQ1, EQ3, and EQ5.³

³ A separate report will describe and analyze data related to the funding of grantees and community subrecipients (EQ2) and the costs of PFS interventions (EQ4).

Exhibit 8. Evaluation Questions

EQ Number	Text of Question
EQ1	Was PFS associated with a reduction in underage drinking and/or prescription drug misuse and abuse?
EQ2	Did variability in prevention funding relate to outcomes at the grantee and community levels?
EQ3	What intervention type, combinations of interventions, and dosages of interventions were related to outcomes at the community level?
EQ4	Were some types and combinations of interventions within communities more cost-effective than others?
EQ5	How does variability in factors (infrastructure, capacity, partnerships, workforce development, barriers to implementation) relate to outcomes across funded grantees and communities?

Note: PFS = Partnerships for Success.

1.4 Data Collection and Analytic Approach

1.4.1 Data Included in This Report

Exhibit 9 summarizes all data collected at the grantee and community levels, along with associated tools and data collection timelines for the PEP-C SPF-PFS evaluation. Grantees and community subrecipients provided their process and community outcomes data through the online PEP-C MRT. This report examines process data from FY2014 through FY2017 (October 1, 2013, to September 30, 2017); grantee-level NSDUH data through 2016; poisoning call center data through FY2017; and community-level outcomes data provided by grantees for their funded community subrecipients through January 2018. **Appendix B** maps items from the data collection instruments to the related constructs from EQ1, EQ3, and EQ5.

Exhibit 9. Data Collection Instruments

Data Collection		
Tool/Measure	Method and Content	Frequency of Collection
Grantee		
Outcome measures	Obtained by the PEP-C team from SAMHSA (NSDUH state-level estimates for UAD and PDM along with related norms) and the American Association of Poison Control Centers (poisoning call center data from the National Poisoning Data System).	Annually
Quarterly Progress Reports	Web based via PEP-C MRT—includes information on workgroup meetings and members (completed by grantees)	Quarterly in January, April, July, and October
Grantee-Level Instrument—Revised	Web based via PEP-C MRT—includes information on infrastructure, data capacity, workforce development, and sustainability (completed by grantees)	First and last years of project in April
Grantee Project Director Interviews	Telephone interview—includes information on the community subrecipient selection process; selection of evidence-based programs, policies, and practices; and barriers to and facilitators of PFS implementation	First, third, and last years of project in the spring
Community		
Community outcomes	Web based via MRT—CSAP-approved, community-level data (entered by grantees); includes past-30-day UAD and PDM; perceived risks; norms; and related crashes, arrests, and emergency department visits	Annually in November
Community-Level Instrument—Revised	Web based—includes information related to organizational capacity, collaboration with community partners, data infrastructure, planned intervention targets, intervention implementation (categorization, timing, dosage, and reach), barriers to implementation, and training and technical assistance received (completed by community subrecipients)	Twice a year in April and October

CDC = Centers for Disease Control and Prevention; MRT = Management Reporting Tool; NSDUH = National Survey on Drug Use and Health; PDM = prescription drug misuse; PEP-C = Program Evaluation for Prevention Contract; PFS = Partnerships for Success; UAD = underage drinking.

1.4.2 Analytic Methods

The PEP-C SPF-PFS national cross-site analyses combine qualitative and quantitative data and methodologies. To assess changes over time on key outcomes, the PEP-C team used variations on a random effects meta-regression model (van Houwelingen, Arends, & Stijnen, 2002).

Comparisons between PFS and non-PFS communities used a non-equivalent control groups design (W. Shadish, Cook, & Campbell, 2002) that in some cases incorporated propensity score weighting (Rosenbaum & Rubin, 1983). Depending on the variable, the descriptive process analyses included means, frequencies, and ranges, along with statistical comparisons of the PFS

cohorts where appropriate. **Section 2** and **Appendices C** and **D** provide more detailed information on the analyses used for this report.

2. Findings From the Evaluation

2.1 EQ1. Was PFS associated with a reduction in underage drinking and/or prescription drug misuse and abuse?

HIGHLIGHTS:

- After state grantees received Strategic Prevention Framework Partnerships for Success (SPF-PFS) funding, they improved on existing trends by:
 - reducing rates of underage drinking (UAD) by an additional 0.59% per year;
 - reducing rates of underage binge drinking by an additional 0.4% per year;
 - reducing rates of past-30-day prescription drug misuse (PDM) for young adults age 18–25 by an additional 0.45% per year;
 - reducing rates of past-12-month PDM for young adults age 18–25 by an additional 0.84% per year;
 - increasing rates of perceived risks of alcohol for young adults age 18–25 by 0.74% per year; and
 - increasing rates of perceived friends' disapproval of alcohol use by 0.95% per year.
- After implementing PFS interventions, community subrecipients improved on existing trends on only one variable, by reducing PDM by 0.60% more per year than expected.
- Grantees that funded a greater proportion of their counties for PFS had related greater decreases in poisoning calls for stimulants, sedatives, and opiates.

Evaluation Question 1 (EQ1) assesses the relationship between the PFS program and grantee- and community-level outcomes, with a focus on UAD among people age 12–20 and PDM among people age 12–25. The outcomes data available for this report allowed for a look at effects only early in the implementation of PFS. For the PFS 2013 cohort, grantees received funding in October 2013, but, on average, community subrecipients began implementing their first intervention around February of 2015 (i.e., 16 months later; see *Section 1.1.1*). With grantee-level National Survey on Drug Use and Health (NSDUH) outcomes available only through 2015–2016

and community outcomes generally available only through 2016, the most recent outcomes data from those sources represented about 1 year after the year in which intervention implementation began for the PFS 2013 cohort and less time for later cohorts (see *Exhibit 10*). The more up-to-date poisoning call center data, with outcomes through FY2017, allowed for a look at slightly longer term postimplementation outcomes.

However, the lack of more than a year or so of postimplementation data at this time means that this report cannot provide a full assessment of the outcomes impact of PFS for even the PFS 2013 cohort, and even less insight is available about the outcomes for later cohorts and long-term impact.

Exhibit 10. Partnerships for Success Grant Funding, Intervention Implementation, and Outcomes Data Timelines

2012		2013		2014		2015		2016		2017	
			PFS 2013 Grant Funding			PFS 2013 Intervention Implementation					
			PFS 2014 Grant Funding			PFS 2014 Intervention Implementation					
			PFS 2015 Funding			PFS 2015 Intervention Implementation					
PFS 2016			PFS 2016 Interv. Impl.								
NSDUH and Community Outcomes Data											
National Poisoning Data System (NPDS) Poisoning Call Center Data											

2.1.1 Grantee-Level NSDUH Outcomes

These PFS evaluation grantee-level outcomes analyses use NSDUH state-level 2-year estimate data provided by the Center for Behavioral Health Statistics and Quality and covering the period from 2010–2011 through 2015–2016. These analyses include all 49 grantee states and the District of Columbia funded through the PFS 2013 through PFS 2016 cohorts.⁴ The analysis models capture two periods of linear change: changes in outcomes pre-PFS funding for grantees and incremental/additive changes in outcomes following PFS funding. The models therefore show changes after PFS funding over and above existing trends—in other words, the observed benefit of PFS.

The results below describe PFS effects by both statistical significance and effect size. Effect sizes greater than 0.20 represent meaningful effects, even though they may not be statistically significant. *Appendix C.1, Exhibit C1-2*, provides detailed information on the model results. *Appendix C.1* provides additional detailed information on the analyses, including how the analyses addressed the 2015 redesign of some of the NSDUH items. This NSDUH redesign changed the definitions for measuring some outcomes (binge drinking, PDM, perceived risks) and required adjustment for the difference in estimated prevalence at the same point in the intervention cycle (e.g., 1 year after funding, 2 years after funding) between grantees who had the old measure at that time and grantees who had the new measure at that time. This adjustment, captured as redesign bias as Xs in the graphs in this section, shows prevalence estimates on the new measures.

Past-30-Day Alcohol Use and Binge Drinking. Across the examined age groups (12–20, 18–25), states were significantly reducing past-30-day alcohol use and past-30-day binge drinking even before they received PFS funding (p-values all < 0.01). After receiving PFS funding, states demonstrated even steeper reductions than expected if existing trends continued in the following variables:

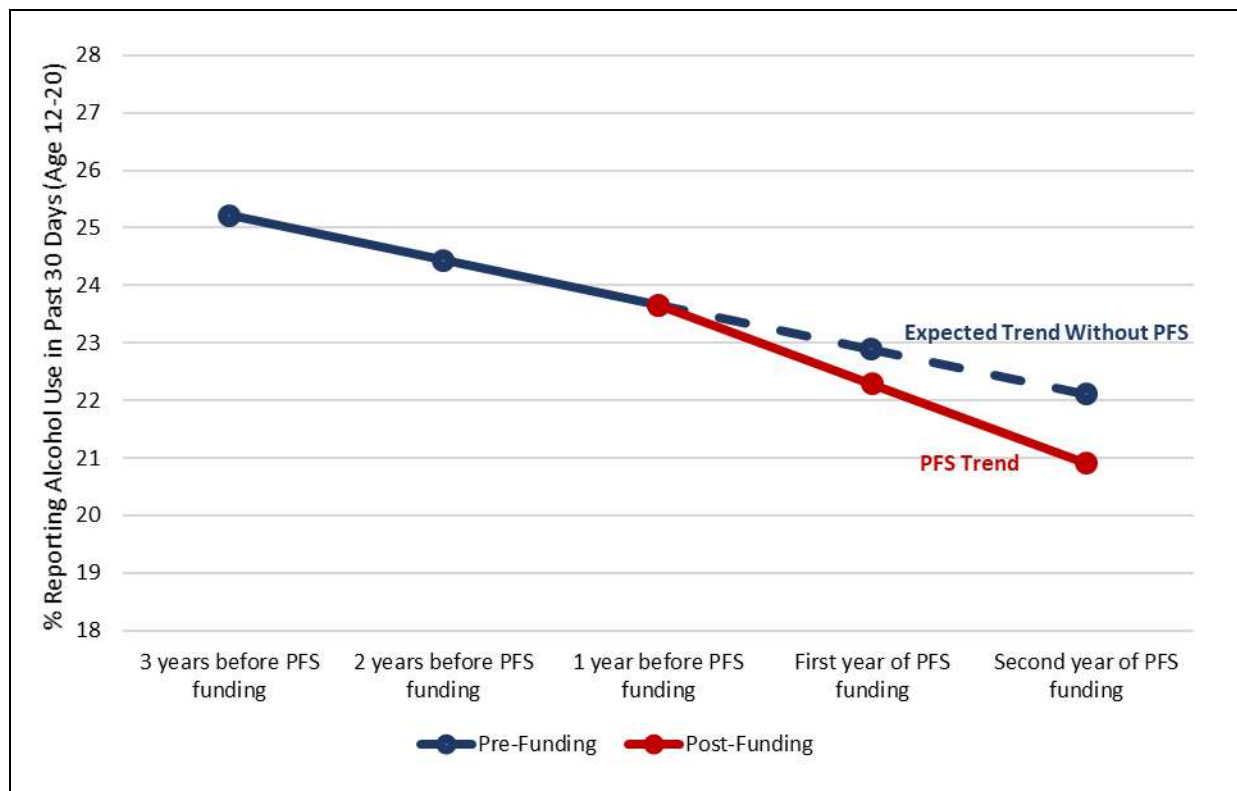
- past-30-day alcohol use among youth age 12–20 (0.59% per year *additional* reduction; p = 0.02, Cohen's d = -0.43; *see Exhibit 11*);
- past-30-day alcohol use among young adults age 18–25 (0.72% per year *additional* reduction; p = 0.01, Cohen's d = -0.26); and

⁴ NSDUH data were not available for tribal and jurisdiction grantees.

- past-30-day binge drinking for youth age 12–20 (0.68% per year *additional* reduction; $p = 0.02$, Cohen's $d = -0.64$; *see Exhibit 12*).

Exhibit 11. NSDUH Grantee-Level Outcomes

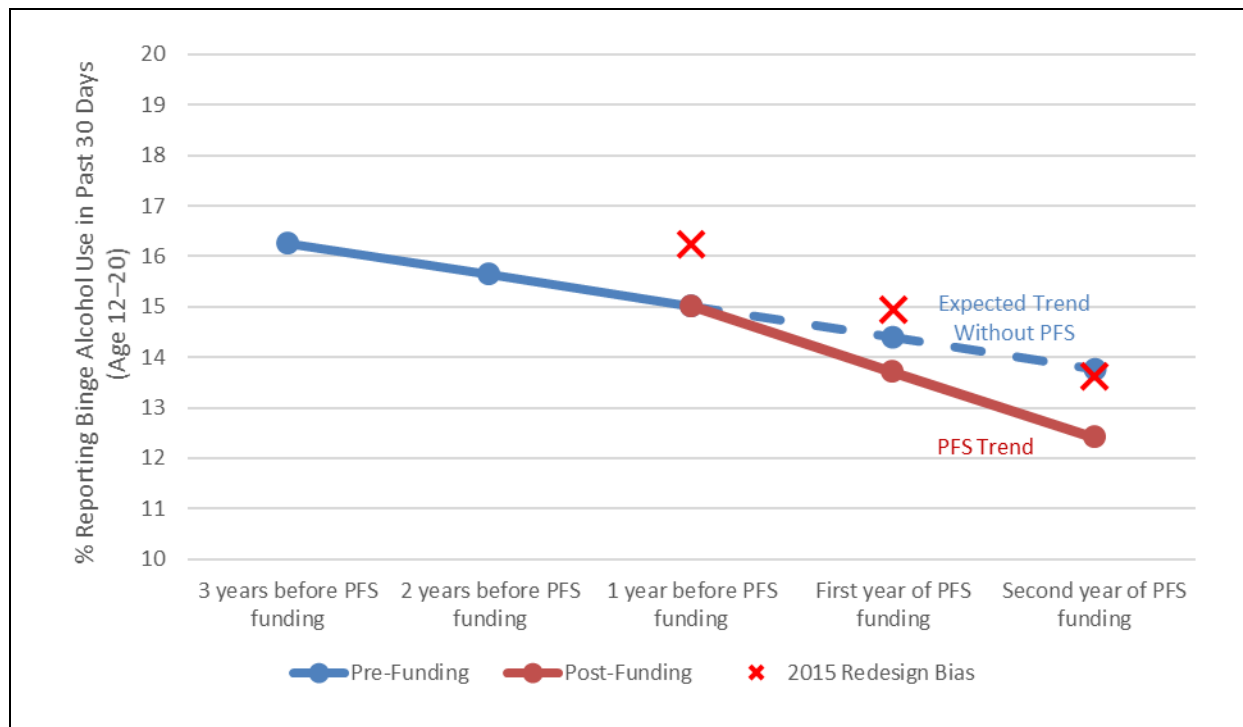
Underage drinking decreased more steeply in states after they received PFS funding.



Notes: This analysis included only state grantees: 14 grantees from the PFS 2013 cohort, 13 grantees from the PFS 2014 cohort, 7 grantees the PFS 2015 (New) cohort, 14 grantees from the PFSII/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

Exhibit 12. NSDUH Grantee-Level Outcomes

Underage binge drinking decreased more steeply in states after they received PFS funding.



Notes: This analysis included only state grantees: 14 grantees from the PFS 2013 cohort, 13 grantees from the PFS 2014 cohort, 7 grantees the PFS 2015 (New) cohort, 14 grantees from the PFSII/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

Prescription Drug Misuse. In the NSDUH data, the PDM outcome is also described as psychotherapeutics misuse and combines four categories of medication (pain relievers, tranquilizers, stimulants, and sedatives). Across the examined age groups (12–17, 18–25), even before they received PFS funding, states were reducing past-30-day and past-12-month misuse of prescription drugs, as well as past-30-day and past-12-month misuse of analgesics (pain relievers; p-values all < 0.0001). After PFS funding, states showed even steeper reductions than expected if existing trends continued in the following variables for young adults age 18–25:

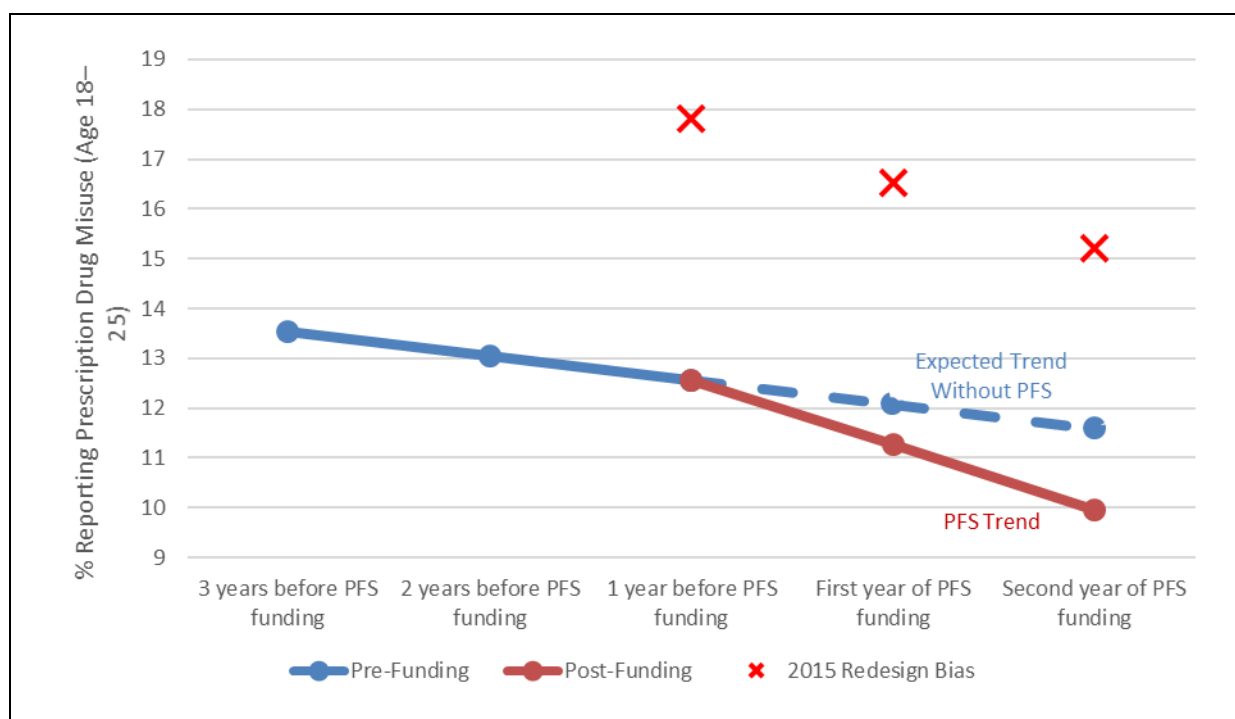
- past-30-day PDM (0.45% per year *additional* reduction; $p = 0.02$, Cohen's $d = -0.78$); and
- past-12-month PDM (0.82% per year *additional* reduction; $p = 0.01$, Cohen's $d = -0.84$; see *Exhibit 13*).

In addition to those significant findings, states also showed reductions after PFS funding that, though steeper than expected and meaningful (in terms of effect size), were not statistically significant, including:

- for youth age 12–17 in
 - past-30-day PDM (0.18% per year *additional* reduction; $p = 0.12$, Cohen's $d = -0.61$);
 - past-12-month PDM (0.28% per year *additional* reduction; $p = 0.18$, Cohen's $d = -0.52$);
 - past-30-day analgesics misuse (0.13% per year *additional* reduction; $p = 0.21$, Cohen's $d = -0.47$); and
 - past-12-months analgesics misuse (0.24% per year *additional* reduction; $p = 0.18$, Cohen's $d = -0.48$).
- for young adults age 18–25 in past-30-day analgesics misuse (0.17% per year *additional* reduction; $p = 0.25$, Cohen's $d = -0.36$).

Exhibit 13. NSDUH Grantee-Level Outcomes

Among young adults age 18–25, past-12-month prescription drug misuse decreased more steeply in states after they received PFS funding.



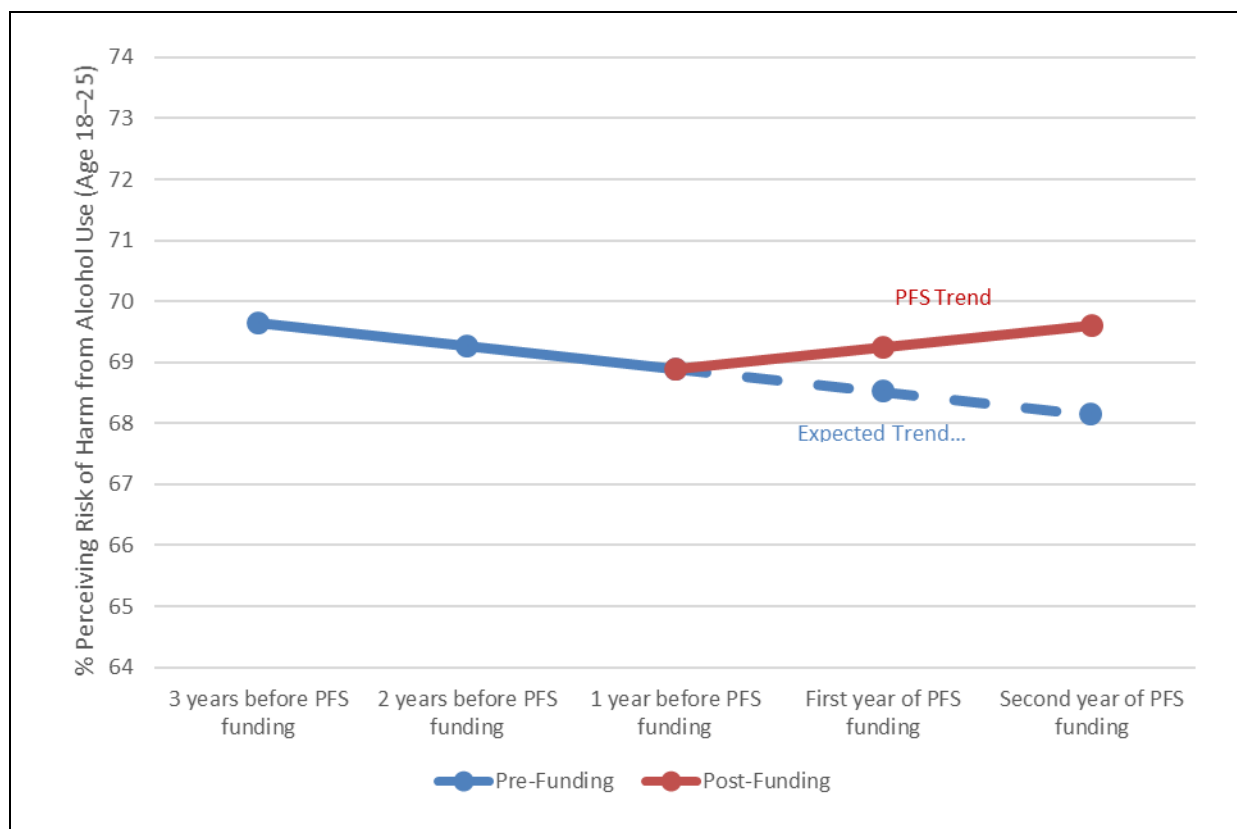
Note: This measure included the following classes of prescription drugs: pain relievers, tranquilizers, stimulants, and sedatives. Notes: This analysis included only state grantees: 14 grantees from the PFS 2013 cohort, 13 grantees from the PFS 2014 cohort, 7 grantees the PFS 2015 (New) cohort, 14 grantees from the PFSII/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

Perceived Risk of Alcohol Use. Before PFS funding, trends showed fewer youth and young adults perceiving binge drinking as risky (p -values all < 0.008). After PFS funding, states reversed these trends and increased perceived risks of alcohol for young adults age 18–25 (0.74% per year additional *increase*; $p = 0.06$, Cohen's $d = 0.51$; see *Exhibit 14*). PFS states also increased

perceived risks of alcohol use among 12- to 17-year-olds after funding, but this change was not significant (0.37% per year additional *increase*; $p = 0.18$, Cohen's $d = 0.38$).

Exhibit 14. NSDUH Grantee-Level Outcomes

Among young adults age 18–25, decreases in perceived risk of alcohol use before PFS changed to increases after states received PFS funding.



Notes: This analysis included only state grantees: 14 grantees from the PFS 2013 cohort, 13 grantees from the PFS 2014 cohort, 7 grantees the PFS 2015 (New) cohort, 14 grantees from the PFSII/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

Disapproval of Alcohol Use: Same-Age Peers, Parents, and Friends (Age 12–17). Perceived disapproval of use from same-age peers ($p < 0.0001$) and friends ($p < 0.0001$) increased significantly in the pre-PFS funding period, but perceived parental disapproval of use did not significantly change ($p = 0.27$). After PFS funding, states demonstrated significantly steeper *increases* in perceptions of friends' disapproval of alcohol use (0.95% per year *additional increase*; $p < 0.001$, Cohen's $d = 0.77$); however, opposite of what was expected, there also was a non-significant decrease in perceived parental disapproval (0.20% per year *additional decrease*; $p = 0.27$, Cohen's $d = -0.30$).

2.1.2 Community-Level Outcomes

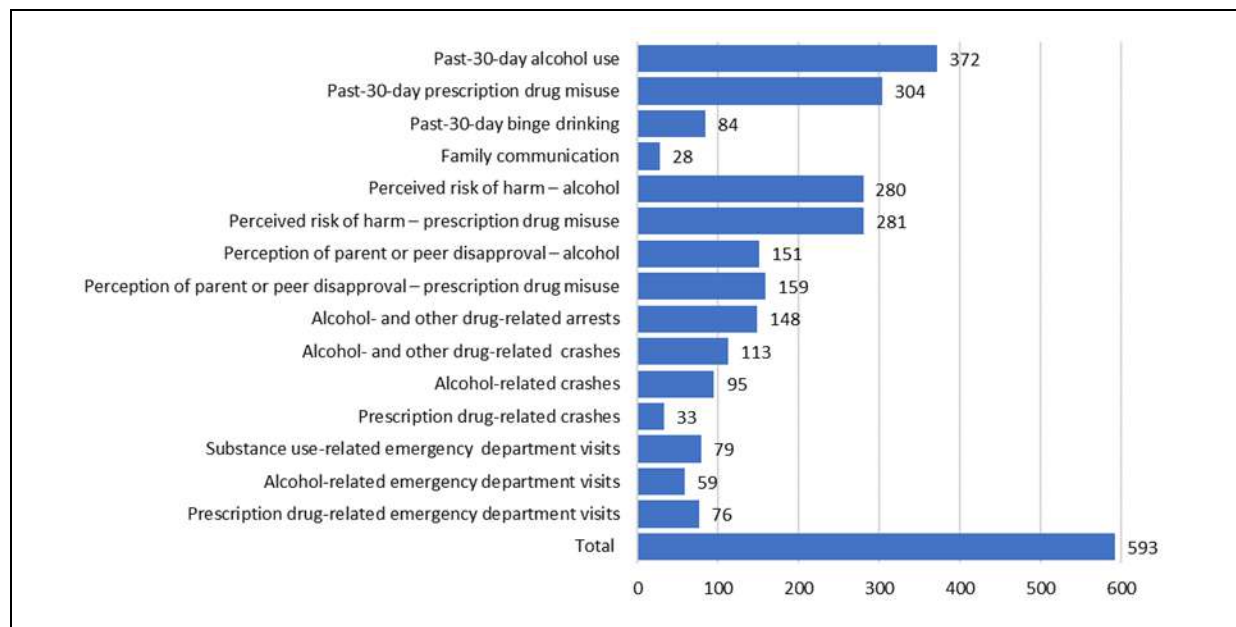
This report uses community-level outcomes data that grantees reported for each of their communities in the Community Outcomes module of the PEP-C Management Reporting Tool through January 2018. Grantees used the module to provide required data about consumption, consequence, and intervening variable outcomes of their community subrecipients' SPF-PFS activities. Grantees generally reported annual measures for only two of the outcomes (one each for UAD and PDM); other outcome measures were reported less frequently. The outcomes provided in the Community Outcomes module come from existing survey and administrative data in the state, tribe, or jurisdiction. *Appendix C.2* provides more information on the community outcomes reporting.

These community outcomes analyses include community subrecipients with at least one follow-up (postintervention implementation) time point estimate on one or more outcome measures.⁵ The longitudinal analysis models compared change over time before the intervention was implemented (from 3 years before) to change over time after implementation (up to 2 years after).

Grantees provided postimplementation community outcomes data for a total of 593 PFS 2013, PFS 2014, and PFS 2015 community subrecipients included in these analyses. *Exhibit 15* shows the number of community subrecipients with postimplementation data for each of the possible outcomes. Grantees most commonly reported postimplementation data on past-30-day alcohol use (for 63% of the included communities) and past-30-day PDM (51%), along with perceived risk of harm from alcohol use (47%) and PDM (47%). *Appendix C.2, Exhibit C2-1*, shows the percentage of community subrecipients in each of the three included cohorts that had postimplementation data for each outcome. Generally, relatively fewer PFS 2015 community subrecipients contributed postimplementation data for any of the outcomes; they received funding and began implementing later than the PFS 2013 and PFS 2014 cohorts, and many do not yet have postimplementation data available for all of their community outcomes.

⁵ PFS 2016 community subrecipients lacked postimplementation outcomes data, so this cohort was excluded from community outcomes analyses.

Exhibit 15. Number of Communities With One or More Postimplementation Measures, by Outcome

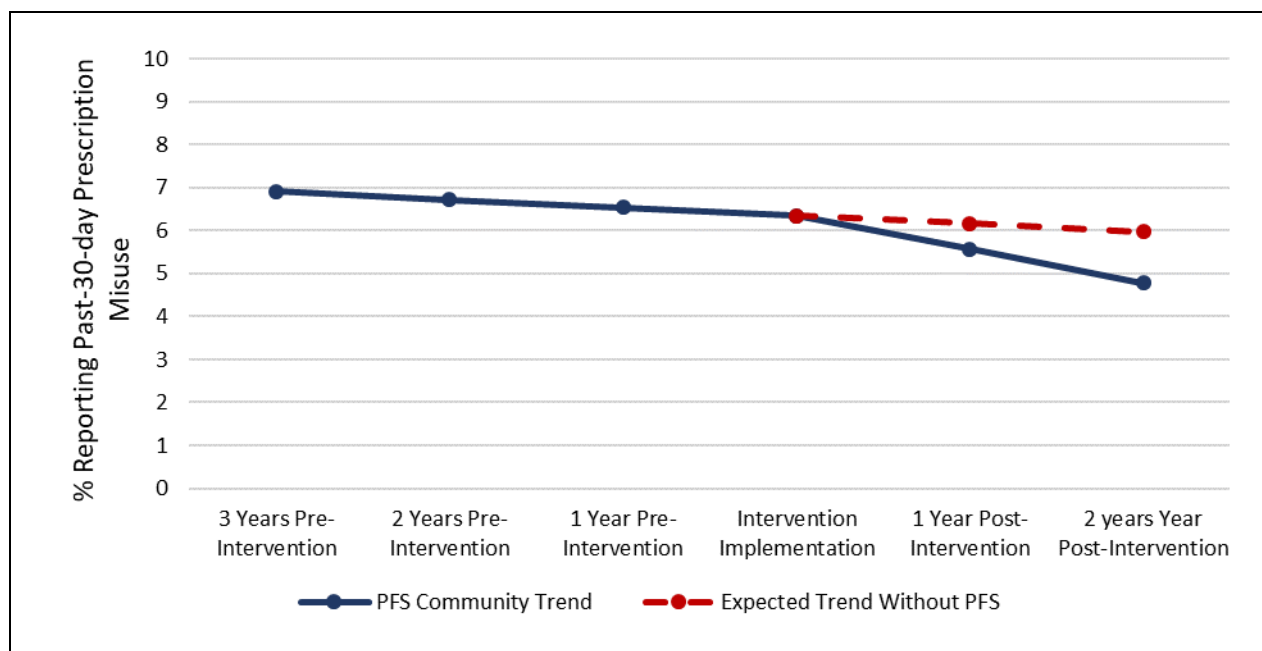


Similar to what we did for the NSDUH grantee-level outcomes analyses, we tested the significance of the change over time (slopes) between pre- and postimplementation time periods and also examined effect sizes calculated for the differences in outcome scores from implementation to 2 years after implementation (using Cohen's *d* effect size metric; Feingold, 2009). *Appendix C.2, Exhibit C2-2*, displays the analysis results for all outcomes.

PFS community subrecipients demonstrated significant pre- to postimplementation effects on only two outcomes, one in an unexpected direction. The 304 community subrecipients with related data demonstrated significantly steeper reductions in past-30-day PDM after implementing PFS interventions than they did before implementing PFS interventions (0.60% per year *additional* reduction; $p = 0.04$, Cohen's $d = 0.39$; see *Exhibit 16*). However, in the 33 PFS communities with relevant crash data, an observed decline in prescription drug-related vehicle crashes before implementing PFS interventions reversed rather sharply and significantly after PFS was implemented (a 16.40% per year swing; $p < 0.001$, Cohen's $d = 2.10$).

Exhibit 16. Community Outcomes

Past-30-day prescription drug misuse decreased more steeply in communities after they began implementing PFS interventions.



Notes: This analysis included 10 grantees and 116 community subrecipients from the PFS 2013 cohort, 17 grantees and 96 community subrecipients from the PFS 2014 cohort, 13 grantees and 73 community subrecipients from the PFS 2015 (New) cohort, and 5 grantees and 19 community subrecipients from the PFS II/2015 cohort. PFS = Partnerships for Success.

In addition to the significant findings, community subrecipients also showed meaningful (in terms of effect size), but not significant, postimplementation changes on several other outcomes that were steeper than expected based on prior trends, including:

- steeper reductions in past-30-day alcohol use (1.18% per year *additional* reduction; $p = 0.12$, Cohen's $d = 0.25$);
- steeper reductions and binge drinking (1.89% per year *additional* reduction; $p = 0.14$, Cohen's $d = 0.31$);
- steeper reductions in alcohol-related vehicle crashes (0.20% per year *additional* reduction; $p = 0.30$, Cohen's $d = 0.26$); and
- steeper increases in family communication regarding alcohol, tobacco, and other drugs (3.86% per year *additional* increase; $p = 0.21$, Cohen's $d = 1.03$).

2.1.3 National Poisoning Data System Outcomes

This next analysis, which considers both grantee- and community- level outcomes, used data from the National Poisoning Data System (NPDS), described more extensively in *Appendix C.3*. Of most interest to PFS efforts, the NPDS collected poisoning call incidence data separately for

sedatives, antidepressants, stimulants, opioids, and ethanol. The PEP-C team used the data to create county-level poisoning rates for PFS and non-PFS counties for both alcohol (age 12–20 for ethanol) and PDM (age 12–25 for the other four domains) for FY2013 through FY2017.

The PEP-C team used a non-equivalent control groups design (Shadish et al., 2002) with a weighted multilevel latent growth modeling approach and propensity score weighting (Rosenbaum & Rubin, 1983) to account for pre-existing differences between PFS communities and non-PFS communities. See **Appendix C.3** for more information on the propensity score weighting process and analysis model.

Comparisons of PFS communities with non-PFS communities on poisoning call data showed that most of the significant or meaningful findings occurred at the grantee level (see **Exhibit 17** and **Appendix, C.3 Exhibit C3-3**, for more detail). Grantees that had a higher proportion of communities participating in PFS observed greater reductions in poisonings on 5 of the 6 outcomes, with three of the effects exceeding the $|.5|$ threshold for effect sizes that would be considered medium (Stimulants, Sedatives, and Ethanol). At the community (county) level, only ethanol saw significant reductions related to PFS implementation that were above and beyond any effects at the grantee level, with an effect size that did not reach the threshold of what would be considered a small effect (i.e., $|.2|$).

Exhibit 17. Poisoning Call Outcomes

Grantees with a higher proportion of their communities participating in PFS showed significantly greater decreases in poisoning calls on stimulants, sedatives, and opiates.

Outcome	Grantee-Level Effects	Community-Level Effects
All Poisonings	▼	
Stimulants	▼*	
Sedatives	▼*	
Opiates	▼*	
Antidepressants		
Ethanol	▼	*

* $p < 0.10$.

Note: This analysis included 35 state grantees and 2538 “sub-counties,” where sub-counties were defined as either (1) parts of a county that were separated by whether they contained PFS and non-PFS ZIP codes or (2) entire PFS and non-PFS counties (if whole counties were selected). Green down arrows represent effect sizes of greater than 0.20, showing greater reductions after the start of PFS funding for grantee states with a larger proportion of PFS communities.

2.2 EQ3. What intervention type, combinations of interventions, and dosages of interventions were related to outcomes at the community level?

HIGHLIGHTS:

- PFS interventions served or reached more than 55 million individuals from FY2014 through FY2017.
- 537 community subrecipients from 61 grantee states, tribal organizations, and jurisdictions implemented 2,281 PFS intervention activities from FY2014 through FY2017.
- Community subrecipients most often implemented information dissemination, environmental strategies, or prevention education CSAP strategy types.
- Community subrecipients targeted UAD more with prevention education activities than they did PDM, and they targeted PDM more with information dissemination or environmental strategies than they did UAD.
- 51% of community subrecipients implemented media campaigns.
- 85% of community subrecipients implemented at least one evidence-based program, policy, or practice (EBPPP); community subrecipients categorized 49% of their interventions as EBPPPs.
- Early postintervention implementation data show few consistent associations between specific intervention characteristics or approaches and outcomes.

The analysis of implemented interventions focuses on data from FY2014 through FY2017 from the Community-Level Instrument–Revised (CLI-R). This section looks at the following intervention implementation characteristics:

- Implementation duration (length of time for implementation and whether communities implemented interventions before PFS);

- CSAP-defined strategy types and combinations (community-based processes,⁶ prevention education, alternative activities, problem identification and referral, environmental strategies, and information dissemination);
- Intervention-service type (e.g., media campaigns; training environmental influencers; multiagency coordination; classroom educational services; social or recreational events free of alcohol, tobacco, and other drugs [ATOD]);
- Ecological target (individual young people, family, peers, institutions or organizations, whole communities, or public law or policy);
- EBPPP categorization; and
- Community exposure as defined by intervention dosage and reach.

As described in **Section 2.1**, delays in implementation and the reduced availability of postimplementation outcomes data limited the analyses that could answer EQ3, which focused on associations between intervention implementation and outcomes effectiveness. This section first describes implemented intervention activities and concludes with a look at the association between some of the intervention factors and early community-level outcomes for PFS 2013 and PFS 2014 community subrecipients.

For each PFS intervention implemented, community subrecipients provided the *name* of the prevention intervention along with a *service type* describing major sets of activities implemented under that prevention intervention.⁷ Community subrecipients reported most intervention information at the intervention-service type activity level, and that level is used for most descriptors in this section. We label activities reported at the intervention-service type level as “intervention activities” throughout this section.

2.2.1 Description of Implemented Intervention Activities

A total of 537 community subrecipients from 61 grantees implemented 2,281 PFS intervention activities from FY2014 through FY2017. Of the 2,281 intervention activities implemented, 759

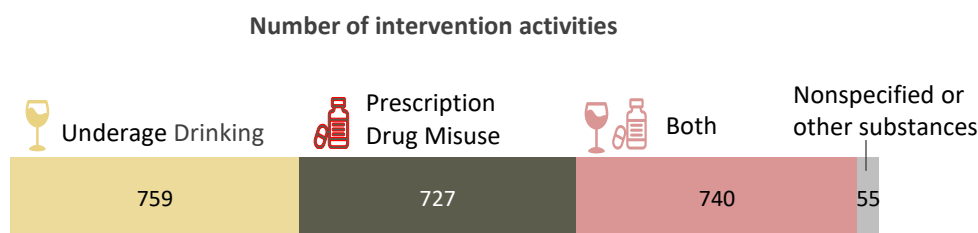
⁶ 113 community subrecipients from 31 grantees implemented 161 community-based process strategies, which are important components of a comprehensive substance abuse prevention approach. However, this section excludes data related to community-based process strategies when referencing intervention activities because many of the community-based processes focused more on capacity building and did not directly target outcome changes.

⁷ Although most interventions corresponded with a single service type activity (e.g., a classroom education program), some interventions included more than one major service type activity (e.g., a community mobilization intervention might include both responsible beverage server training and implementation of sobriety checkpoints).

(33%) targeted alcohol-related outcomes, 727 (32%) targeted prescription drug-related outcomes, 740 (32%) targeted both alcohol- and prescription drug-related outcomes, and 55 (2%) targeted another substance only (e.g., tobacco or heroin) or outcomes unrelated to a specific substance (e.g., motor vehicle crashes; see *Exhibit 18*).

Exhibit 18. Target Substances

PFS community subrecipients implemented relatively equal numbers of intervention activities targeting alcohol, prescription drug misuse, or both.

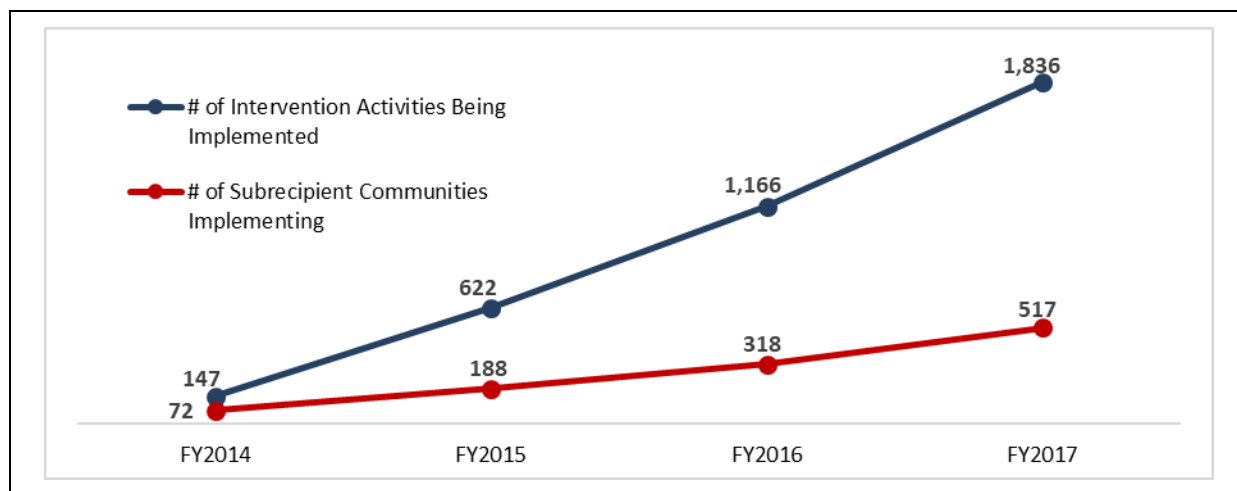


Notes: This analysis included 209 community subrecipients from the PFS 2013 cohort, 115 community subrecipients from the PFS 2014 cohort, 165 community subrecipients from the PFS 2015 (New) cohort, 44 community subrecipients from the PFS II/2015 cohort, and four community subrecipients from the PFS 2016 cohort.

PFS 2013 community subrecipients implemented 1,042 (46%) intervention activities, PFS 2014 community subrecipients implemented 575 (25%), PFS 2015 (New) community subrecipients implemented 498 (22%), PFS II/2015 community subrecipients implemented 162 (7%), and PFS 2016 community subrecipients implemented 4 (0.2%). Community subrecipients implemented an average of 4.3 intervention activities over the course of their PFS funding, with their number of reported activities ranging from 1 to 33. Thus far, PFS 2013 and PFS 2014 community subrecipients have implemented the most intervention activities on average (at 5.0 for each cohort), with PFS 2015 (New) and PFS II/2015 reporting fewer (at 3.0 and 3.7 activities, respectively). As expected, the numbers of both subrecipient communities implementing interventions, and implemented intervention activities, increased across funding years (see *Exhibit 19*).

Exhibit 19. PFS Activities and Communities Implementing

The number of subrecipient communities implementing and intervention activities being implemented increased over time.



INTERVENTION DURATION

Implementation duration, or the length of time community subrecipients implemented their intervention activities, focused on (1) whether community subrecipients implemented those activities before supporting them with PFS funding and (2) how long they implemented the activities with PFS funding. Community subrecipients previously implemented 16% of their PFS activities under SPF State Incentive Grant (SIG) grant funding and 24% of their PFS activities through other sources of support. Of the 2,281 intervention activities funded by PFS, 1,005 (44%) were ongoing (i.e., still active through FY2017) and so could not yet be assessed for duration. The interventions labeled as completed or no longer active ($n = 1,276$) ranged in duration from 58 to 1,429 days (Median = 457 days).

CSAP STRATEGY TYPE

Community subrecipients indicated which CSAP-defined strategy type best described each of their implemented intervention activities. These CSAP strategy type categories included prevention education (e.g., classroom-based education), alternative activities without ATOD (e.g., afterschool programs, drug-free late-night activities), problem identification and referral (e.g., practitioner-based or online screening), environmental strategies (e.g., enforcing UAD laws, physician training on prescribing guidelines), and information dissemination (e.g., media

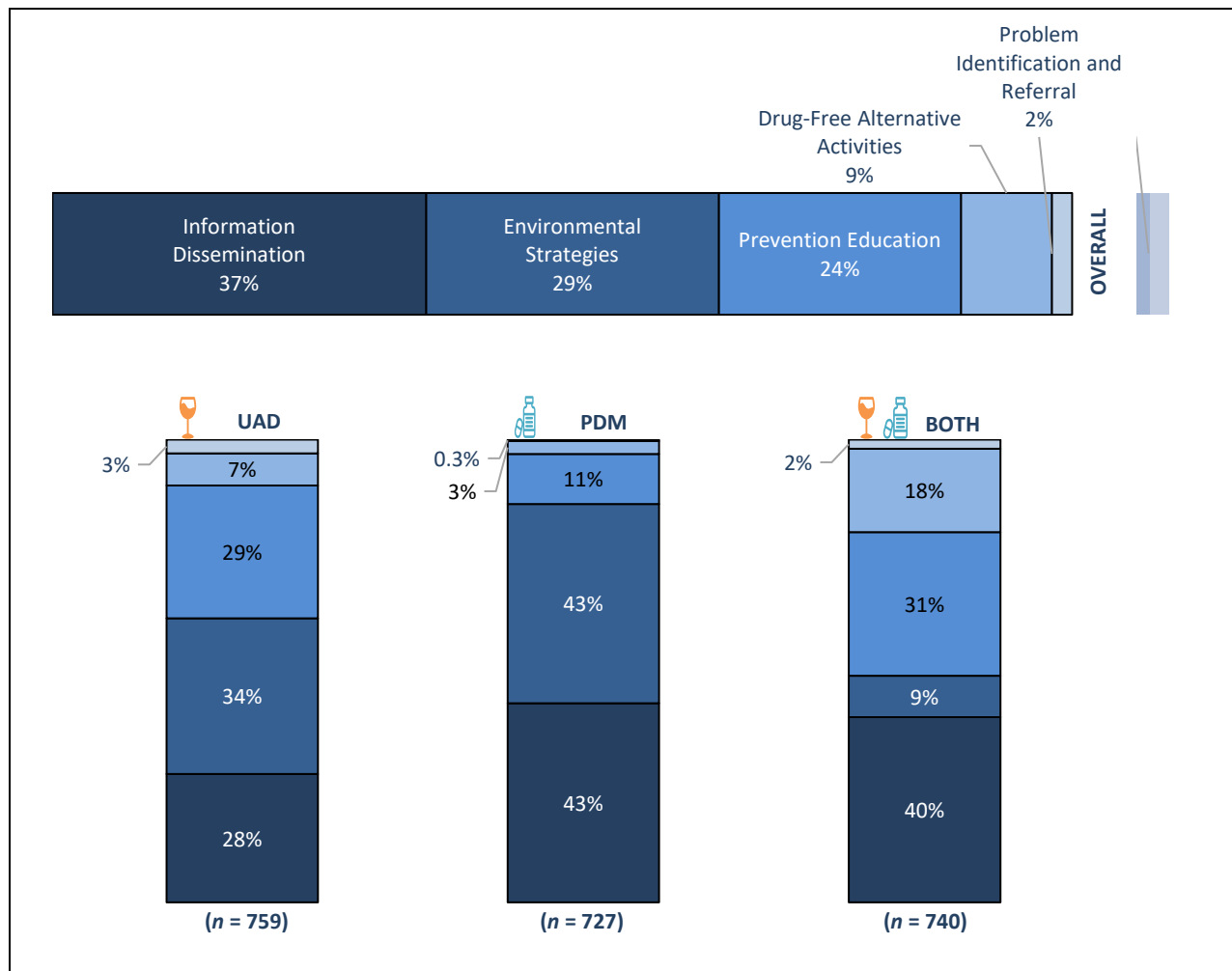
campaigns, public speaking events).⁸ Community subrecipients most often implemented information dissemination activities (37% of all intervention activities), environmental strategies (29%), or prevention education activities (24%; see *Exhibit 20*). Exhibit 20 shows how the interventions targeting different substances also differed in terms of their CSAP strategy type categorization. Community subrecipients targeted UAD more with prevention education activities than they did PDM, and they targeted PDM more with information dissemination or environmental strategies than they did UAD.

Exhibit 21 shows the percentage of the community subrecipients that implemented intervention activities in each CSAP strategy type category. More than half of the community subrecipients implemented information dissemination activities (76%), environmental strategies (60%), or prevention education (54%). PFS 2013 community subrecipients appeared more likely than subrecipients in other cohorts to implement prevention education (implemented by 66% of PFS 2013 community subrecipients) and alternative activities (33%), whereas PFS II/2015 community subrecipients appeared more likely to implement environmental strategies (implemented by 75% of PFS II/2015 community subrecipients).

⁸ As discussed earlier these analyses excluded interventions that community subrecipients categorized as the sixth CSAP strategy type, community-based processes.

Exhibit 20. CSAP Strategy Type and Target Substance

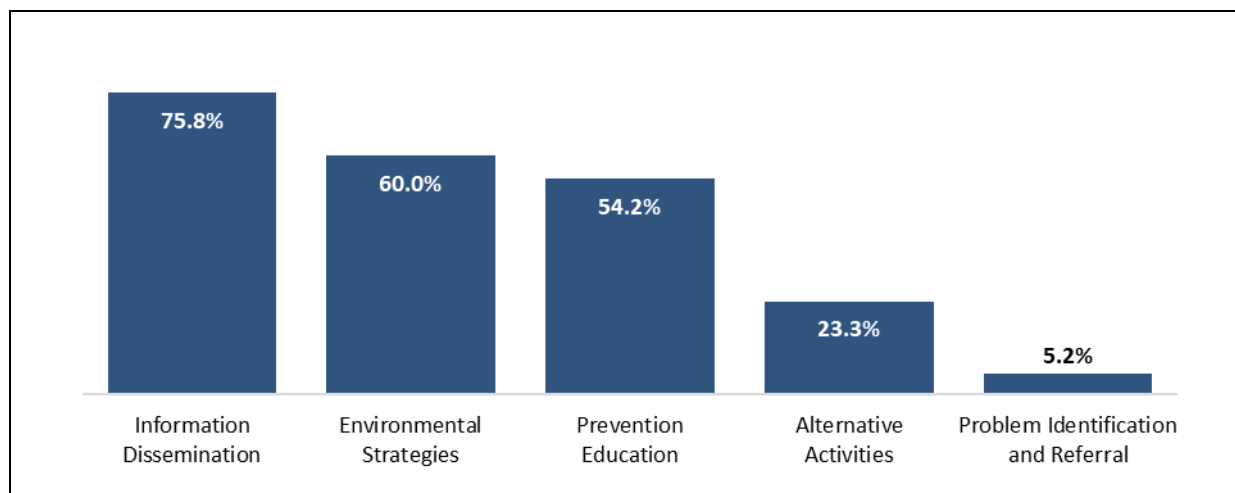
Community subrecipients targeted more of their prevention education activities at UAD and more of their information dissemination or environmental strategies at PDM than at the other substance.



Note: Nonspecified substances and other substances are included in the Overall bar, but they are not included in the Alcohol only, Rx only, and Both bars.

Exhibit 21. Percentage of Community Subrecipients Implementing Each CSAP Strategy Type

More community subrecipients implemented information dissemination, environmental strategy, or prevention education activities than other types of activities.



Note: This analysis included 209 community subrecipients from the PFS 2013 cohort, 115 community subrecipients from the PFS 2014 cohort, 165 community subrecipients from the PFS 2015 (New) cohort, 44 community subrecipients from the PFS II/2015 cohort, and 4 community subrecipients from the PFS 2016 cohort.

INTERVENTION-SERVICE TYPES

Next, we examined which intervention-service types community subrecipients implemented most frequently within each CSAP strategy (see *Exhibit 22*). Media campaigns, under information dissemination, were by far the most commonly implemented service type. Of the 537 communities implementing interventions, 51% implemented media campaigns. Of the 352 media campaigns implemented, 37% targeted alcohol-related outcomes, 27% targeted prescription drug-related outcomes, and 33% targeted both alcohol- and prescription-drug-related outcomes.

Among the CSAP strategy types, environmental strategies included the greatest diversity of service type activities, with the most commonly implemented environmental strategy service types including prescription drug drop boxes or take-back events along with training or educating environmental influencers (e.g., beverage servers, health care personnel, law enforcement). For prevention education, community subrecipients most often provided classroom educational services, other group education programs, and parenting or family management programs.

Exhibit 22. The Most Commonly Implemented Service Types Associated With Each CSAP Strategy Type

Most Commonly Implemented Intervention-Service Types by CSAP Strategy Type	Intervention Activities (N)	Percentage of Community Subrecipients Implementing
Information Dissemination	858	75.8
Media campaigns	349	51.0
Speaking engagements/community presentations	136	16.0
Printed or audiovisual material	95	12.3
Other information dissemination	66	11.4
Health fairs	64	9.9
Environmental Strategies	653	60.0
Prescription drug drop boxes/take-back programs	164	29.2
Training/educating environmental influencers (e.g., servers, health care personnel, law enforcement)	120	16.4
Other environmental strategies	92	12.7
Compliance checks	50	9.1
Establishing, reviewing, or changing policies in schools, colleges, workplaces, and other organizations	46	7.8
Changing local codes, ordinances, regulations, and laws	24	4.3
Prevention Education	538	54.2
Classroom educational services (school settings)	193	27.0
Other group education programs	92	12.8
Parenting/family management	89	13.2
Educational services for youth groups	53	7.8
Alternative Activities	211	23.3
ATOD-free social/recreational events	60	7.8
Youth/adult leadership development activities	56	8.6
After-school programs/Anti-ATOD clubs	42	8.2
Problem Identification and Referral	39	5.2
Other prevention assessment and referral	20	3.0
Online screening and referral	6	1.1
Student assistance programs	3	0.6

Note: This analysis included 209 community subrecipients from the PFS 2013 cohort, 115 community subrecipients from the PFS 2014 cohort, 165 community subrecipients from the PFS 2015 (New) cohort, 44 community subrecipients from the PFS II/2015 cohort, and 4 community subrecipients from the PFS 2016 cohort.

The high frequency of media campaign implementation and variety of activities defined by community subrecipients as media campaigns suggested a need for a separation between more extensive “multimodal media campaigns” (i.e., those disseminated more widely over several media channels) and other, more limited information dissemination activities (e.g., individual speaking engagements, poster-only campaigns). *Appendix D.1* provides more detail on this

categorization of multimodal media campaigns. Approximately 38% of information dissemination service type activities met the definition of a multimodal media campaign; 46% of the 537 implementing community subrecipients implemented at least one of these types of campaigns. All remaining analyses presented in this section by CSAP strategy type include six categories: prevention education, alternative activities, problem identification and referral, environmental strategies, multimodal media campaigns, and other information dissemination strategies.

COMBINATIONS OF CSAP STRATEGIES

PFS community subrecipients showed diversity in how they combined CSAP strategies they implemented through their intervention activities (see *Appendix D.2, Exhibit D2-1* for a detailed table of those combinations). Of the 537 community subrecipients that implemented interventions, 27% implemented interventions consisting of only a single CSAP strategy type, 35% implemented a combination of two CSAP strategy types, 22% combined three CSAP strategy types, 13% combined four CSAP strategy types, and 4% combined five CSAP strategy types. No community subrecipients combined all six modified CSAP strategy types. No more than 9% of the community subrecipients implemented any one CSAP strategy type alone or any specific combination of CSAP strategy types.

ECOLOGICAL TARGETS AND COMBINATIONS

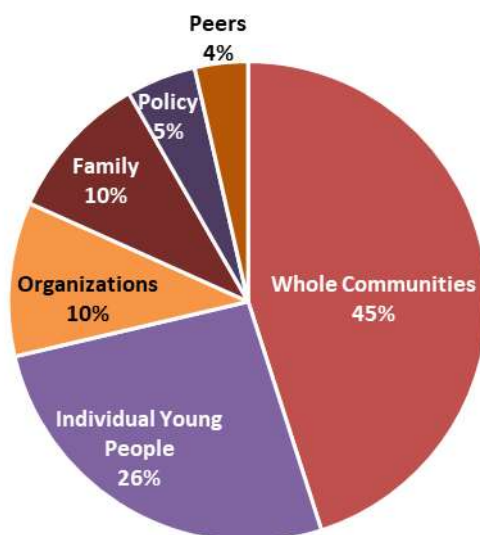
Community subrecipients also classified each intervention-service type activity they implemented by their ecological targets, as categorized according to the ecological model of health behavior (McLeroy, Bibeau, Steckler, & Glanz, 1988). These categories (and related interventions) include the following:

- Individual young people (e.g., classroom curriculum, individual counseling);
- Young people's immediate social environments, such as families or friendship networks (e.g., parenting program, mentoring program);
- Institutions or organizations that serve young people, such as schools, employers, or health care providers (e.g., employee assistance program, beverage server training);
- Communities, including the interrelationships between organizations and institutions (e.g., sobriety checkpoints, media campaign, prescription drug take-back program); and
- Public policy, including local or state laws or policies (e.g., liquor license policies, institution of prescription drug monitoring program).

Most community subrecipients (81%) implemented at least one intervention-service type activity that targeted the whole community. About half of the community subrecipients implemented intervention-service types that targeted individual young people (48%), and about one third targeted organizations that serve young people (34%). In terms of addressing the immediate social environment, community subrecipients were more likely to target family members (28%) than peers (13%). In addition, about 15% of the community subrecipients implemented at least one intervention-service type that targeted public laws and policies. Assessments at the intervention activity level produced similar results (see *Exhibit 23*), and these breakdowns did not differ substantially by cohort.

Exhibit 23. Intervention Activity Ecological Targets

Most PFS intervention activities targeted whole communities or individual young people.



Note: This analysis included 1,042 intervention activities from community subrecipients in the PFS 2013 cohort, 575 intervention activities from community subrecipients in the PFS 2014 cohort, 498 intervention activities from community subrecipients in the PFS 2015 (New) cohort, 162 intervention activities from community subrecipients in the PFS II/2015 cohort, and 4 intervention activities from community subrecipients in the PFS 2016 cohort.

About two thirds of the intervention activities categorized as information dissemination or environmental strategies targeted whole communities (64% and 62%, respectively). Intervention activities categorized as problem identification and referral, alternative activities, and prevention education most often targeted individual young people (69%, 65%, and 58%, respectively).

Similar to how community subrecipients used CSAP strategy types in combination to target outcomes, they also implemented interventions in combination to target multiple levels of the social ecology. A substantial number of community subrecipients ($n = 170$; 32%) implemented

interventions aimed at a single level of the social ecology, most commonly targeting entire communities. Another 34% implemented interventions that addressed two ecological targets, with community subrecipients most frequently targeting entire communities and individual youths or entire communities and organizations. Almost one quarter (23%) of community subrecipients implemented interventions targeting three ecological levels, whereas fewer targeted a combination of four (9%), five (3%), or all six (0.4%) ecological targets.

EVIDENCE-BASED PROGRAMS, POLICIES, AND PRACTICES

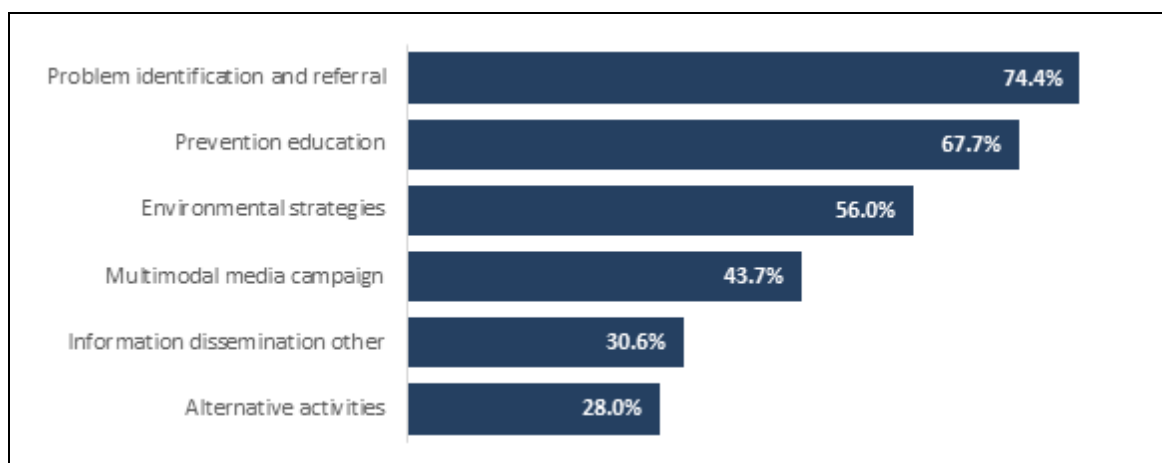
CSAP encouraged community subrecipients to implement EBPPPs for their interventions. Across cohorts, 85% of community subrecipients implemented at least one self-reported EBPPP.

Community subrecipients categorized 49% of their intervention activities as EBPPPs (1,118 of 2,281), including 66% of the activities that targeted alcohol-related outcomes, 39% of the activities that targeted prescription drug-related outcomes, and 43% of the activities that targeted both alcohol- and prescription drug-related outcomes.

Community subrecipients were most likely to categorize problem identification and referral and prevention education interventions as evidence based, followed by environmental strategies and multimodal media campaigns (see *Exhibit 24*). Community subrecipients least often described other information dissemination and alternative activities as evidence based.

Exhibit 24. Percentage of Intervention Activities Defined as EBPPPs

Community subrecipients most often categorized problem identification and referral and prevention education activities as evidence based.



Note: This analysis included 1,042 intervention activities from community subrecipients in the PFS 2013 cohort, 575 intervention activities from community subrecipients in the PFS 2014 cohort, 498 intervention activities from community subrecipients in the PFS 2015 (New) cohort, 162 intervention activities from community subrecipients in the PFS II/2015 cohort, and 4 intervention activities from community subrecipients in the PFS 2016 cohort.

Community subrecipients that self-categorized interventions as EBPPPs identified which of the CSAP criteria they used to categorize the interventions as such (see **Exhibit 25**). The majority (59%) of EBPPP intervention-service types were selected from a list of recommended EBPPPs provided by community subrecipients' state, tribal entity, or jurisdiction. Community subrecipients also commonly implemented EBPPPs that they found on a Federal registry of EBPPPs (40%), were based on documented evidence of effective implementation (22%), or were found to be effective as documented in a published scientific journal article (17%).

Exhibit 25. CSAP EBPPP Criteria

Community subrecipients most commonly selected their EBPPPs from grantee-provided lists of EBPPPs and Federal registries.

Criterion	% from Intervention Activities Categorized as EBPPPs (N = 1,118)
Appeared on a list of recommended EBPPPs provided by our state, tribe, or jurisdiction	58.7
Inclusion in a Federal registry of EBPPPs	40.3
Supported by documentation of effective implementation multiple times in the past (showing consistent pattern of positive effects)	22.1
Found to be effective (on the primary target outcome) in a published scientific journal	16.5
Based on a theory of change that is documented in a clear logic or conceptual model	15.8
Reviewed by a panel of informed experts, including qualified prevention researchers, local prevention practitioners, and key community leaders (e.g., law enforcement and education representatives; elders within indigenous cultures)	14.0
Similar in content and structure to interventions that appear in registries or peer-reviewed literature	11.0
Other	2.8
Did not use any specific criteria to determine that this was an EBPPP	1.1

Notes: Subrecipients could select more than one option for each EBPPP intervention activity. EBPPP = Evidence-based program, policy, or practice.

Given that community subrecipients most often relied on lists of recommended EBPPPs provided by their grantees, the PEP-C team looked to the grantee Project Director Interview responses to understand this grantee guidance. Most grantees reported using one or more of three criteria to define EBPPPs for their subrecipients: (1) Federal registries and lists of evidence-based interventions from the National Registry of Evidence-based Programs and Practices or from the Center for the Application of Prevention Technologies (CAPT) or from SAMHSA guidance

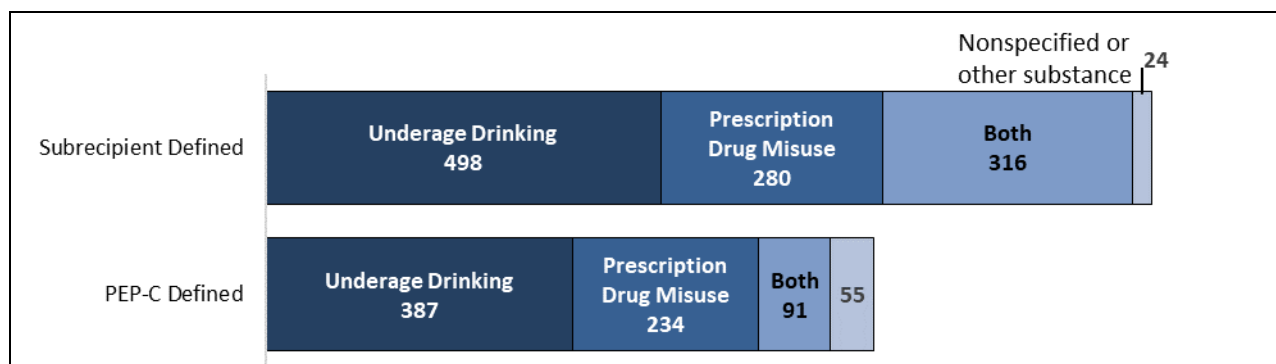
documents; (2) interventions found to be effective on the primary targeted outcome, as documented in peer-reviewed journals; and (3) interventions reviewed by a panel of experts.

In the interviews, grantees often described challenges identifying EBPPPs for PDM and challenges selecting culturally appropriate EBPPPs for tribal and territorial grantees. The relatively recent focus on PDM meant that related interventions often lacked a substantial evidence base; however, some grantees drew on alternative sources of evidence such as promising practices outlined in reports and peer-reviewed journals. Numerous tribal and territorial grantees described a lack of interventions for their communities and a need to adapt evidence-based interventions to be more culturally appropriate for the populations they served. In addition, some tribal and territorial grantees used alternative criteria for identifying EBPPPs, such as tribal panels that included tribal representatives and individuals most familiar with the tribal culture.

In addition to the community subrecipient self-report, the PEP-C team reviewed all reported interventions and related service types and used objective criteria to categorize them as EBPPPs (see *Appendix D.3* for more information). Using this PEP-C categorization, 71% of community subrecipients across cohorts implemented at least one self-reported EBPPP. *Exhibit 26* compares the number of intervention activities targeting each substance that were defined by community subrecipients as EBPPPs with the number that were defined as such through the PEP-C process.

Exhibit 26. EBPPP Intervention Activities, by Targeted Substance

Both PEP-C and community subrecipients categorized as EBPPPs more underage drinking-targeted intervention activities than prescription drug-targeted activities.



Notes: The intervention name and service type did not contain specific enough information for PEP-C to make a determination for 51% of the interventions.

NUMBERS REACHED AND SERVED

This section describes the numbers reached and served by each CSAP strategy type, as reported by the community subrecipients. *Numbers reached* refers to the total number of individuals who attended or were exposed to larger, community-level interventions (i.e., community-based processes, environmental strategies, multimodal media campaigns, or other information dissemination activities). These individuals may or may not have direct contact with an intervention activity, but they generally live in the communities where subrecipients disseminate their PFS prevention information and activities. *Numbers served* refers to the total number of participants who actively engaged in intervention types aimed at individuals (e.g., problem identification and referral) or small groups (e.g., prevention education or alternative activities).

Exhibit 27 shows the number of individuals reached or served by CSAP strategy type.

Multimodal media campaigns, other information dissemination interventions, and environmental strategies appear to have reached the greatest number of individuals. Because the same individuals may be served or reached by multiple activities, an unduplicated count of the number reached and served by PFS intervention activities is not possible. Looking at the total suggests that PFS activities reached or served more than 55 million individuals from FY2014 through FY2017, or more than 13 million individuals annually. However, these counts may include some individuals multiple times over the years or for multiple intervention activities in any one year (repeated exposure).

Exhibit 27. Numbers Served and Reached

Community subrecipients reached about 55 million individuals from FY2014 through FY2017.

CSAP Strategy Type	Total	FY2014	FY2015	FY2016	FY2017
Community-based processes	1,895,773	4,477	207,501	577,163	1,106,632
Prevention education	254,270	6,080	35,626	67,950	144,614
Alternative activities	111,350	1,232	17,328	41,015	51,775
Problem identification and referral	14,154	45	2,261	5,799	6,049
Environmental strategies	14,386,141	296,493	2,139,112	4,426,961	7,523,575
Multimodal media campaigns	28,911,080	1,654,353	4,800,601	9,581,454	12,874,672
Other information dissemination	9,844,223	6,430	2,750,285	3,317,312	3,770,196
Total	55,416,991	1,969,110	9,952,714	18,017,654	25,477,513

Notes: This analysis included 209 community subrecipients from the PFS 2013 cohort, 115 community subrecipients from the PFS 2014 cohort, 165 community subrecipients from the PFS 2015 (New) cohort, 44 community subrecipients from the PFS II/2015 cohort, and 4 community subrecipients from the PFS 2016 cohort. Analyses excluded outliers (data points that were three standard deviations away from the mean). PFS = Partnerships for Success.

OVERALL COMMUNITY EXPOSURE

Community exposure estimates how much substance use prevention programming a community received as determined by an index that combined reported numbers served or reached with dosage information. The community exposure index scores are standardized with values on a 10-point scale that represents low community exposure (1) to high community exposure (10; see **Appendix D.4** for more information on creation of the index). PFS community subrecipients had an average community exposure score of 5.5 (SD = 2.9).

2.2.2 Intervention Implementation Approaches

Communities had different resources and needs, resulting in significant variability in *what* interventions and combinations of interventions they chose along with *how* they implemented those interventions. Considering only *what* a community implements, without accounting for the implementation context, makes it unclear why outcomes change (or don't change) over time. Latent class analysis (LCA) allows us to define communities using multidimensional characteristics of intervention implementation (e.g., the *what* **and** the *how*) as opposed to focusing on one dimension at a time (e.g., the *what* **or** the *how*). For this report, we used exploratory LCA to group communities into smaller subgroups (classes) that used similar implementation approaches (the intervention implementation *what* **and** the *how*). We did this separately for communities targeting UAD and PDM because findings in **Section 2.2.1** show that targeting these outcomes encourages different intervention activities.

Given the goal to use the identified implementation approach classes to subsequently predict community outcomes, these analyses include only state and tribal community subrecipients in the PFS 2013 and PFS 2014 cohorts.⁹ Because outcomes were assessed at the community level, the analyses aggregated intervention-level data so that each community had one measure for each of the following implementation characteristic indicators (0 = no; 1 = yes):

- Whether a community subrecipient implemented **any** interventions within each CSAP strategy type:
 - Prevention education, problem identification and referral, alternative activities, environmental strategies, multimodal media campaigns, and other information dissemination;

⁹ Section 2.1 shows that PFS 2015 and PFS 2016 cohorts did not have many (or any) postintervention implementation outcomes, mainly because of their later funding and implementation lags. Pacific jurisdictions were excluded because they also lacked sufficient outcomes data.

- Whether they implemented three or more unique intervention activities;
- Whether 50% or more of their implemented interventions were evidence based (defined by the PEP-C team's coding of EBPPPs); and
- Whether it took the community subrecipients 90 days or more to implement their first intervention after receiving PFS funding.

Using an iterative process (see *Appendix D.5*), we determined that community subrecipients used one of six implementation approaches to address UAD, and they used one of five implementation approaches to address PDM.

Implementation Approaches to Address UAD

Exhibit 28 displays the proportion of community subrecipients that used each of the six identified implementation approaches for UAD and the most common characteristics that describe each approach. Green icons in each column indicate the probability of group members endorsing that characteristic was greater than 0.50; numerical item response probabilities are presented in *Exhibit D5-1*. The largest group of community subrecipients, the *Delayed, Evidence-Based High Implementers* (40%), implemented three or more intervention strategies, most commonly prevention education, environmental strategies, and multimodal media campaigns. This group took more than 90 days to begin implementing interventions, and their interventions were typically evidence based. The second group of *Delayed High Implementers* (19% of the community subrecipients) also implemented three or more intervention strategies (typically prevention education, alternative activities, environmental strategies, and other information dissemination) but were less likely to use EBPPPs. The next largest group, *Delayed, Evidence-Based Nonspecific* (13%), took more than 90 days and implemented one or two EBPPPs but did not overwhelmingly use any one or more specific CSAP strategies. Smaller groups of community subrecipients quickly implemented one or two non-EBPPP multimodal *media campaigns* (13%) or *alternative activities* (8%). The smallest group, *Delayed Indirect High Implementers* (7%), typically implemented three or more interventions, which consisted primarily of non-EBPPP environmental strategies and multimodal media campaigns.

Exhibit 28. Community Subrecipients Addressed UAD Using Six Different Implementation Approaches

Variables	Delayed, Indirect, High Implementers	Alternative Activities	Media Campaigns	Delayed, Evidence-Based, Non-specific	Delayed, High Implementers	Delayed, Evidence-Based High Implementers
Proportion of communities in each group	7.2%	8.3%	12.5%	13.2%	18.5%	40.4%
Implementation Characteristics						
Prevention education					✓	✓
Alternative activities		✓			✓	
Problem ID & referral						
Environmental strategy	✓				✓	✓
Multimodal media campaign	✓		✓			✓
Other information dissemination					✓	
3+ interventions implemented	✓				✓	✓
50%+ of interventions were EBPPPs				✓		✓
90+ days of implementation lag	✓			✓	✓	✓

Notes: This analysis included 182 community subrecipients from the PFS 2013 cohort and 83 community subrecipients from the PFS 2014 cohort. Green check = probability that group members demonstrated that characteristic ("yes") was > 0.50 (these characteristics identify the prevention approach).

Implementation Approaches to Address PDM

Exhibit 29 displays the proportion of community subrecipients that used each of the five identified implementation approaches toward PDM and the most common characteristics for each approach (indicated by the green icons in each column; numerical item response probabilities are presented in **Exhibit D5-2**). Consistent with the approaches defined for UAD, the largest group of community subrecipients (46%), the *High Implementers*, implemented a wide variety of intervention strategies; however, they differed from the most common UAD approach in that few of their strategies were EBPPPs and they endorsed all CSAP strategies except problem identification and referral. The second largest group implemented non-EBPPP multimodal *media campaigns* (18%). The third group, *Delayed, Evidence-Based Indirect* (15%), took longer than 90 days to implement and implemented one or two EBPPPs, which consisted primarily of environmental strategies and multimodal media campaigns. The *Delayed Information Dissemination* group included about 11% of community subrecipients and took more than 90 days to begin implementing activities that used a limited number of dissemination channels. The

final group represented just under 10% of communities and took over 90 days to implement one or two *evidence-based prevention education* programs.

Exhibit 29. Community Subrecipients Addressed PDM Using Five Different Implementation Approaches

Variables	Delayed, Evidence-Based Prevention Education	Delayed Information Dissemination	Delayed, Evidence-Based Indirect	Media Campaigns	High Implementers
Proportion of communities in each group	9.7%	11.0%	15.4%	17.6%	46.3%
Implementation Characteristics					
Prevention education	✓				✓
Alternative activities					✓
Problem ID & referral					
Environmental strategy			✓		✓
Multimodal media campaign			✓	✓	✓
Other information dissemination		✓			✓
3+ interventions implemented					✓
50%+ of interventions were EBPPPs	✓		✓		
90+ days of implementation lag	✓	✓	✓		

Notes: This analysis included 159 community subrecipients from the PFS 2013 cohort and 68 community subrecipients from the PFS 2014 cohort. Green check = probability that group members demonstrated that characteristic ("yes") was > 0.50 (these characteristics identify the prevention approach).

Relationship Between Interventions and Community Outcomes

EQ3 focused on associations between intervention implementation and outcomes. For this report, available outcomes data allowed us to look only at preliminary outcomes for PFS 2013 and PFS 2014 community subrecipients. The models specifically looked at the time period from 1 year before intervention implementation to 1 to 2 years after implementation and used the intervention characteristics described in **Section 2.2.1** as predictors of outcomes. Specific predictors included the number of implemented interventions, the number of different CSAP strategies implemented, the proportion of evidence-based interventions implemented (both community subrecipient defined and PEP-C defined), and community exposure.

In addition, the implementation approaches for UAD and PDM described in the LCA analysis section (**Section 2.2.2**) were also used to predict the community outcomes. The analyses categorized each community subrecipient by the approach (latent class) that best fit its intervention implementation. The approach or latent class indicators were then entered into analysis models as predictors.

Substance use (past-30-day alcohol use, binge drinking, or PDM) was not significantly associated with any of the individual intervention characteristics or implementation approaches within the first year or two after implementation. The analyses did produce a scattering of significant associations between intervention characteristics and some of the other community outcomes, but they did not form consistent patterns. *Sections 3* and *4* provide more discussion of these results.

2.3 EQ5. How does variability in factors (infrastructure, capacity, partnerships, workforce development, barriers to implementation) relate to outcomes across funded grantees and communities?

HIGHLIGHTS:

- PFS interventions served or reached more than 55 million individuals from FY2014 through FY2017.
- 537 community subrecipients from 61 grantee states, tribal organizations, and jurisdictions implemented 2,281 PFS intervention activities from FY2014 through FY2017.
- Community subrecipients most often implemented information dissemination, environmental strategies, or prevention education CSAP strategy types.
- Community subrecipients targeted UAD more with prevention education activities than they did PDM, and they targeted PDM more with information dissemination or environmental strategies than they did UAD.
- 51% of community subrecipients implemented media campaigns.
- 85% of community subrecipients implemented at least one evidence-based program, policy, or practice (EBPPP); community subrecipients categorized 49% of their interventions as EBPPPs.
- Early postintervention implementation data show few consistent associations between specific intervention characteristics or approaches and outcomes.

PFS program goals include strengthening prevention capacity and infrastructure at the state and community levels. Infrastructure forms the foundation that supports a system, community, or

society in achieving desired outcomes. EQ5 explores the influence of both grantee- and community-level infrastructure, capacity, workforce development, partnership, and barrier factors on outcomes of PFS. As described in **Section 2.1**, delays in implementation and the reduced availability of postimplementation outcomes data limited the analyses that could answer EQ5, especially at the community level. Therefore, this exploration of EQ5 focuses somewhat on describing grantee and community subrecipient characteristics and activities from FY2014 through FY2017 for all four PFS cohorts. However, it also provides a preliminary look at the associations between some of the grantee- and community-level characteristics and early outcomes for PFS 2013 and PFS 2014 grantees and community subrecipients. This look at EQ5 concludes with an examination of the barriers that grantees and community subrecipients described as posing challenges to their implementation of PFS-related intervention strategies and activities.

2.3.1 Grantee Factors

The analysis of grantee-level factors uses data from FY2014 through FY2017 from the Grantee-Level Instrument–Revised (GLI-R) as well as the Quarterly Progress Reports (QPRs). This section first looks at descriptions of grantee reports at the time they received PFS funding (baseline) along with related scale development for the following infrastructure and capacity indicators:

- Integration of the grantee-level substance abuse prevention system (to leverage resources, collaborate with mental health agencies, and put in place grantee-wide policies);
- Capacity to collect, analyze, and share data related to planning, workforce needs, implementation, and monitoring;
- Workforce development mechanisms (including recruitment, career advancement, and cultural competence); and
- Sustainability efforts (including fostering community ownership, integrating the SPF model, building data infrastructure, and diversifying funding streams).

In addition, this section describes ongoing workgroups with partners, such as epidemiological outcomes workgroups (EOW) which provide data for needs assessments and planning purposes along with evidence-based practices workgroups (EBPW) which guide the selection of interventions.

Next, this section provides a preliminary look at the associations between the grantee-level characteristics and early outcomes for PFS 2013 and PFS 2014 grantees. It concludes with a look

at changes from baseline measures to the fifth (final) year for PFS 2013 grantees and the fourth year for PFS 2014 grantee.

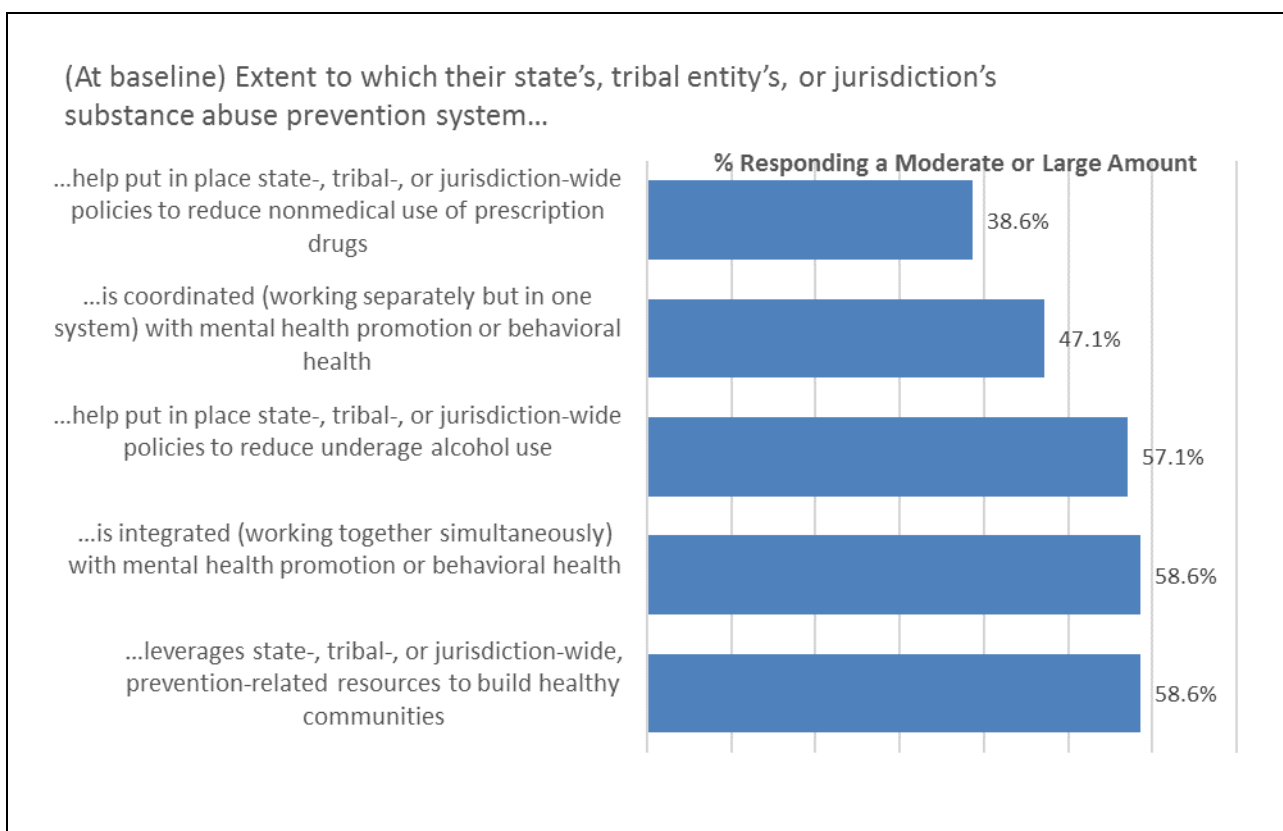
Integration of the Grantee-Level Prevention System

As an indicator of infrastructure, grantees reported at the beginning of their grants on their substance abuse prevention system's ability to leverage other state, tribal, or jurisdiction resources; coordinate or integrate with mental health agencies; and put in place state-, tribal-, or jurisdiction-wide policies related to UAD and PDM (see *Exhibit 30*).

Around half of all grantees had substance abuse prevention systems that leveraged prevention-related resources (59%), coordinated (47%) or integrated (59%) with mental health promotion or behavioral health, and developed jurisdiction-wide UAD policies (57%). Fewer implemented PDM-related policies (39%).

Exhibit 30. Prevention System Integration

At the beginning of their grants, around half of grantees had a prevention system that leveraged state-, tribe-, or jurisdiction-wide resources; worked with the mental health system; and put in place state-, tribe-, or jurisdiction-wide UAD policies.



Notes: This analysis included 16 grantees from the PFS 2013 cohort, 21 grantees from the PFS 2014 cohort, 17

grantees from the PFS 2015 (New) cohort, 14 grantees from the PFS II/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

The five integration items combined to form an integration of the prevention system scale (Cronbach's $\alpha = 0.79$) to use for the outcomes analyses. On average, grantees had a prevention system that was integrated between a little and a moderate extent (mean = 2.60 on the 4-point scale).

Data Capacity

The capacity to collect, analyze, and share data plays a central role in the infrastructure of all PFS grantees, as needs assessment and evaluation are important to the SPF process. Grantees provided information about the baseline data capacity of their state's, tribal entity's, or jurisdiction's prevention system on the GLI-R. Around three quarters of grantees had prevention systems that had a moderate or large capacity to collect data on intervention implementation (77%) and to share community-level data with key stakeholders (73%). Around two thirds of grantees had a moderate or large capacity to produce reports for prevention planning (67%) and prevention monitoring (63%), and only around half of grantees had the capacity to integrate prevention-related data from other agencies/groups (53%) or to collect data on prevention workforce needs (47%). On the six-item data capacity scale ($\alpha = 0.87$), on average grantees reported moderate data capacity at baseline (mean = 2.85 on the 4-point scale).

Prevention System Workforce Development

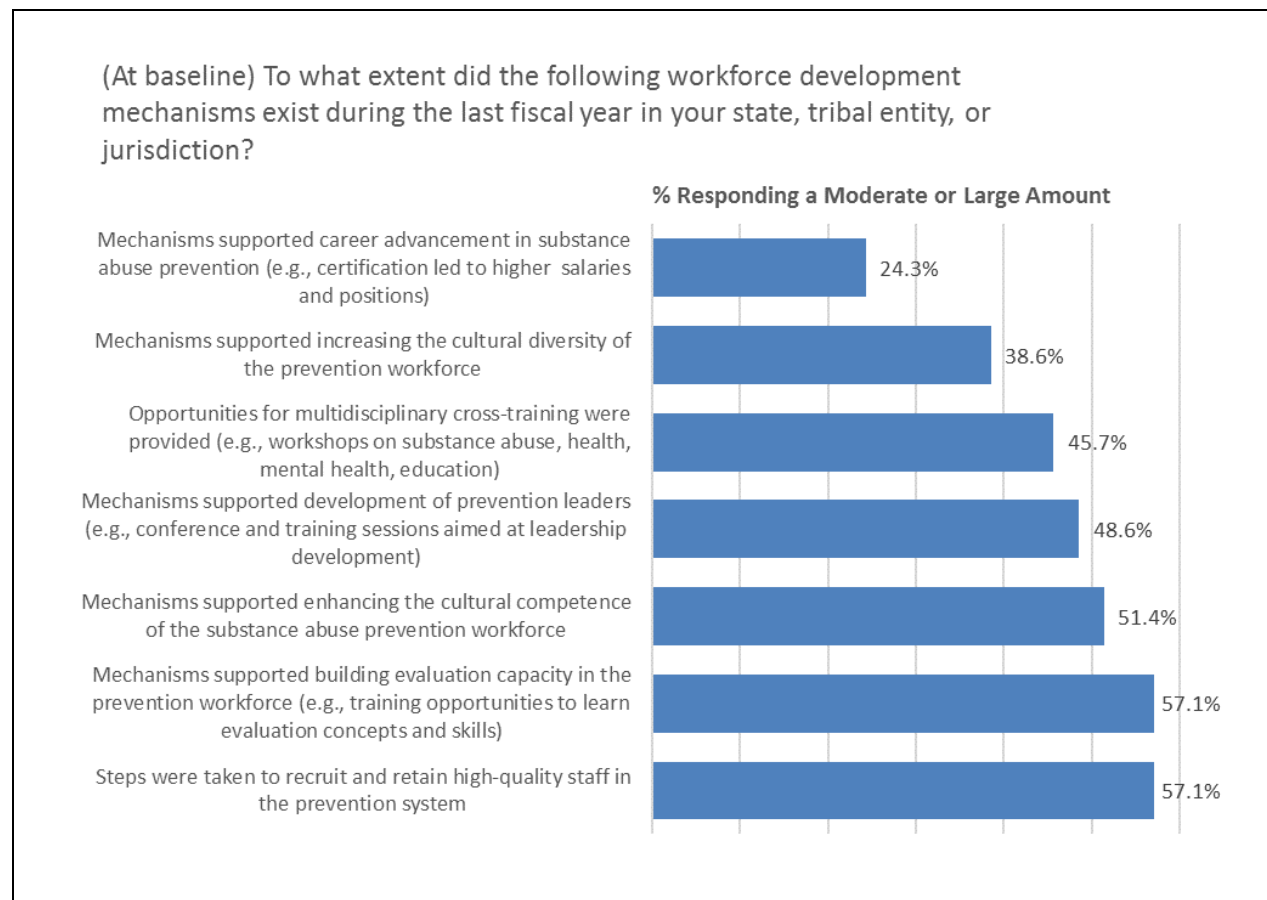
The existence of other prevention workforce development mechanisms at baseline provides an indication of the prevention system infrastructure available to grantees. When they received PFS funding, only 24% of grantees assessed the adequacy and needs of their prevention workforce by a regularly occurring process that was based on timely, accurate data and sound methods. However, they were implementing some mechanisms to develop that workforce. Through the GLI-R, grantees reported on whether their system had a large, moderate, or small amount of, or no, particular workforce development mechanisms in place during the year before they received the PFS grant (see *Exhibit 31*).

More than half of grantees took steps to recruit and retain high-quality staff (57%), had mechanisms that supported building evaluation capacity (57%), and had mechanisms supporting cultural competence (51%). Fewer grantees had mechanisms supporting career advancement (24%) or cultural diversity in the workforce (39%). On the 4-point, 5-item workforce

development mechanisms scale ($\alpha = 0.86$), on average, grantees had a small to moderate amount of workforce development mechanisms in place at baseline (mean = 2.48).

Exhibit 31. Workforce Development Mechanisms

At the time they received PFS funding, most grantees needed to improve the cultural diversity of their workforce and available career advancement mechanisms.



Notes: This analysis included 16 grantees from the PFS 2013 cohort, 21 grantees from the PFS 2014 cohort, 17 grantees from the PFS 2015 (New) cohort, 14 grantees from the PFS II/2015 cohort, and 2 grantees from the PFS 2016 cohort. PFS = Partnerships for Success.

Sustainability

Moving toward sustainability of prevention efforts underlies all aspects of the SPF model. Most grantees reported that even before they began their PFS grants they made efforts to sustain their prevention system through creating partnerships (90% of grantees), integrating the SPF model into prevention practices funded by the Substance Abuse Prevention and Treatment Block Grant (83%), and fostering community involvement and ownership (80%). Many also built a data infrastructure (76%), sought additional Federal funds (69%), otherwise diversified funding streams (53%), built public awareness (66%), or developed a training plan (56%). Less than half

of grantees institutionalized policies (46%). Only two grantees marked that their state or jurisdiction had not addressed sustainability.

The sustainability efforts index was calculated by adding together how many of the 11 types of efforts grantees marked that they did (including an “other” option and “developing a training plan” in addition to the options listed above). On average, grantees had close to seven of the sustainability efforts in place at the beginning of their PFS grants.

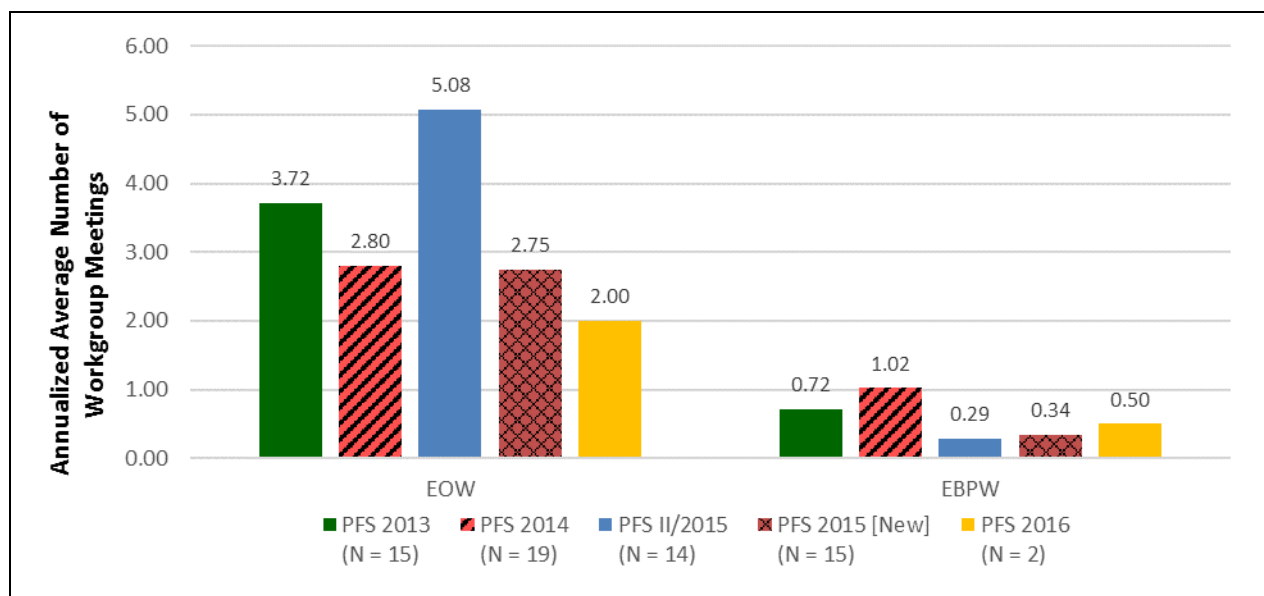
GRANTEE-LEVEL WORKGROUPS

Other key components of PFS grantee prevention infrastructure include cohesive groups, such as an EOW to provide data for needs assessments and planning purposes and an EBPW to guide the selection of interventions. Grantees provided information about the number of EOW and EBPW meetings and workgroup members in their QPRs.

Exhibit 32 displays the annualized average number of EOW and EBPW meetings held by grantees during each fiscal year from 2014 through 2017 by cohort. Overall, grantees held many more EOW meetings than EBPW meetings. The number of annual EOW meetings ranged from 1 to 34, and the number of annual EBPW meetings ranged from 0 to 13. The number of EOW and EBPW meetings generally increased with each year that grantees maintained their grants. Only 21% of funded grantees held at least one EBPW meeting in an average year; 97% of funded grantees held at least one EOW meeting in an average year.

Exhibit 32. Annualized Average Number of EOW and EBPW Meetings

Grantees held more EOW meetings than EBPW meetings in an average year.

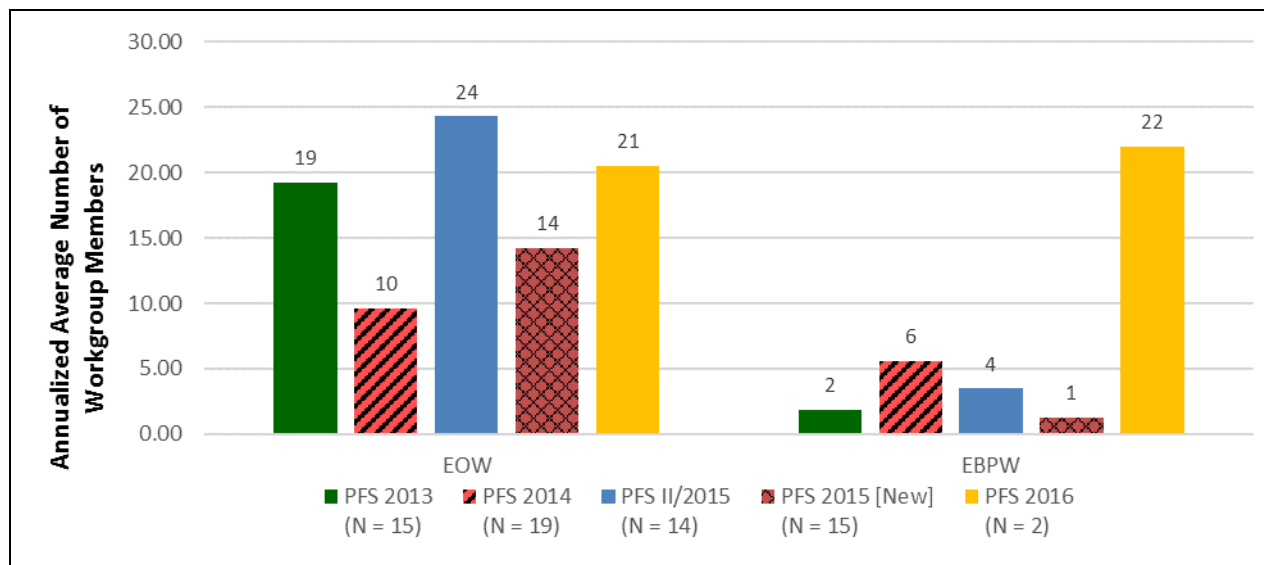


Note: To adjust for missing QPR data in FY2015, we weighted EBPW and EOW meeting totals up to represent four quarters in FY2015 and FY2017. EBPW = evidence-based practices workgroup; EOW = state epidemiological outcomes workgroup; PFS = Partnerships for Success.

Exhibit 33 displays the annualized average number of EOW and EBPW members in each cohort during each fiscal year from 2014 through 2017. As with the meetings, grantees had many more EOW members than EBPW members. The lowest and highest number of members engaged by any one grantee during any project year ranged from 41 to 385 for EOW members and 15 to 128 for EBPW members.

Exhibit 33. Annualized Average Number of EOW and EBPW Members

Grantees had more EOW members than EBPW members.



Notes: EBPW = evidence-based practices workgroup; EOW = state epidemiological outcomes workgroup; PFS = Partnerships for Success.

ASSOCIATIONS BETWEEN GRANTEE OUTCOMES AND GRANTEE-LEVEL INFRASTRUCTURE AND CAPACITY FACTORS

The analyses of associations between grantee outcomes and grantee infrastructure and capacity indicators used the same NSDUH grantee-level outcomes data that were used in the analyses described in *Section 2.1.1*. The statistical model that the PEP-C team used to fit outcome data was a conditional random effects meta-regression model, similar to the model employed for unconditional grantee outcomes in *Section 2.1.1*; the key parameter of interest (i.e., the Outcome Change x Infrastructure/Capacity Indicator interaction) captures whether grantees with stronger infrastructure or capacity have better post-PFS funding outcomes over time. *Exhibits 34* and *35* present only statistically significant effects ($p < 0.05$) or associations with effect sizes greater than $|.20|$; *Appendix E* shows the statistics related to the associations for all of the effects.

We found several significant or at least meaningful (in terms of effect size) associations between early PDM outcomes and the infrastructure and capacity indicators at the beginning of grantees' PFS grants (see *Exhibit 34*). Specifically, at baseline, greater capacity to collect and analyze data, more available prevention system workforce development mechanisms, and a higher number of existing efforts to sustain the prevention system appeared related to greater reductions in PDM in the first few years of the grants. Only a higher number of sustainability efforts appeared

associated with greater reductions in alcohol use, specifically with past-30-day alcohol use and binge drinking for youth age 12 to 17. The integration of the grantee-level prevention system did not appear related to any outcomes, and the other three baseline infrastructure and capacity indicators appeared inconsistently related to changes in the perceived risk and perceived approval measures.

Over the course of the PFS grantees grants, a higher annualized average number of EOW meetings and members appeared related to greater reductions in PDM, along with increases in perceptions of parental or friend disapproval of alcohol use (see Exhibit 35). A higher annualized average number of EBPW meetings and members appeared related to greater reductions in binge drinking and greater increases in the perceived risks of alcohol use. The workgroup meetings and member numbers also had some less favorable associations with outcomes, most notably that a higher annualized average number of EBPW members appeared related to greater increases in PDM.

Exhibit 34. Summary of Associations Between Grantee-Level Infrastructure and Capacity Factors at the Beginning of the Grant and Post-PFS Funding Grantee Outcomes

Outcomes	Prevention System Integration	Data Capacity	Workforce Development	Sustainability
30-day alcohol (age 12–17)				▼*
30-day alcohol (age 12–20)				
30-day alcohol (age 18–25)				
30-day binge (age 12–17)				▼
30-day binge (age 12–20)				
30-day binge (age 18–25)				
30-day PDM (12–17)		▼		▼
30-day PDM (18–25)		▼*		▼
12-month PDM (12–17)		▼	▼	▼*
12-month PDM (18–25)	*	▼*	▼*	▼*
30-day analgesics (12–17)			▼	▼
30-day analgesics (18–25)		▼*	▼	▼
12-month analgesics (12–17)		▼	▼*	▼*
12-month analgesics (18–25)		▼*	▼	▼
Perceived risk of alcohol use (12–17)		▼*	▲*	▼
Perceived risk of alcohol use (18–25)		▲		
Perceived peer disapproval (12–17)		▼	▼	
Perceived parental disapproval (12–17)			▼*	
Perceived friends disapproval (12–17)		▲		

Note: This analysis included 16 grantees at Baseline and 15 grantees at Follow Up from the PFS 2013 cohort, and 21 grantees at Baseline and 18 grantees at Follow Up from the PFS 2014 cohort. Arrows represent effect sizes of greater than 0.20, showing greater increases (up arrow) or reductions (down arrow) after the start of PFS funding for grantee states with higher levels of that infrastructure or capacity measure (i.e., more system integration, data capacity, available workforce development mechanisms, or existing sustainability efforts). Green arrows indicate desirable effects; red arrows indicate undesirable effects. * $p < 0.05$.

Exhibit 35. Summary of Associations Between Grantee-Level Workgroup Meetings and Members Throughout the Grant and Grantee Outcomes

Post-PFS Funding Outcomes	Number of EOW Meetings	Number of EBPW Meetings	Number of EOW Members	Number of EBPW Members
30-day alcohol (age 12–17)	▼*		▲	▲
30-day alcohol (age 12–20)				
30-day alcohol (age 18–25)	▲*	*		▼
30-day binge (age 12–17)	▼		▲	
30-day binge (age 12–20)		▼		▼
30-day binge (age 18–25)		▼*	▼*	▼*
30-day PDM (12–17)			▼	▲
30-day PDM (18–25)	▲		▼	
12-month PDM (12–17)	▼*	▲	▼*	▲
12-month PDM (18–25)	▼*	▼*	▼	▲
30-day analgesics (12–17)	▼		▼	
30-day analgesics (18–25)			▼	
12-month analgesics (12–17)	▼*		▼*	▲
12-month analgesics (18–25)			▼	
Perceived risk of alcohol use (12–17)	▲*	▲*		▲
Perceived risk of alcohol use (18–25)	▼*			
Perceived peer disapproval (12–17)	▲			
Perceived parental disapproval (12–17)	▲		▲*	
Perceived friends disapproval (12–17)	▲*		▲	▼

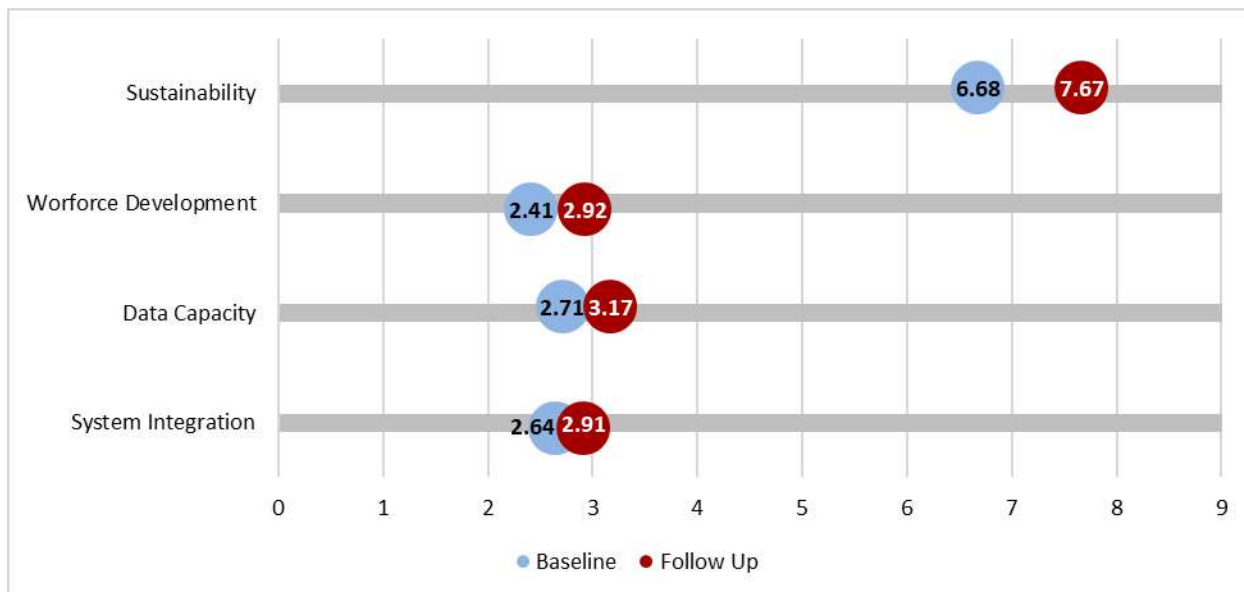
Note: This analysis included 15 grantees from the PFS 2013 cohort and 19 grantees from the PFS 2014 cohort. Arrows represent effect sizes of greater than 0.20, showing greater increases (up arrow) or reductions (down arrow) after the start of PFS funding for grantee states with a higher number of meetings or members. Green arrows indicate desirable effects, red arrows indicate undesirable effects. * $p < 0.05$.

CHANGES IN GRANTEE-LEVEL FACTORS

In addition to providing data on the capacity and infrastructure measures at the beginning of their grants (baseline), PFS 2013 and PFS 2014 also provided follow-up data on those measures in April 2018. This represents the fifth and final year of the PFS grant for PFS 2013 grantees and the fourth year for PFS 2014 grantees. *Exhibit 36* shows the changes over time on the four grantee-level indicators focused on in this report. Grantees significantly improved on the integration of their prevention system, their data capacity, and the workforce development mechanisms they had in place. They did not improve significantly in their number of sustainability efforts.

Exhibit 36. Grantee Infrastructure and Capacity Measures

PFS grantees reported significantly more prevention system integration, data capacity, and workforce development mechanisms toward the end of their grants than at the beginning of their grants.



Notes: This analysis included 16 grantees at Baseline and 15 grantees at Follow Up from the PFS 2013 cohort, and 21 grantees at Baseline and 18 grantees at Follow Up from the PFS 2014 cohort. PFS = Partnerships for Success.

In addition to changes in the overall scale or index indicators, grantees also improved in some specific areas of infrastructure and capacity as measured by the individual items. The following list highlights those areas of significant improvement from baseline to follow-up, with the percentages showing change over time for the PFS 2013 and PFS 2014 grantees¹⁰:

- *Integration of the Grantee-Level Prevention System*
 - The percentage of grantees who helped put in place state-, tribal-, or jurisdiction-wide policies to reduce nonmedical use of prescription drugs increased from 27% to 70% ($p < 0.001$).
- *Data Capacity*
 - The percentage of grantees who had moderate or large capacity to collect data on prevention workforce needs increased from 41% to 73% ($p < 0.01$).
 - The percentage of grantees who had moderate or large capacity to integrate prevention-related data from other agencies/groups increased from 43% to 76% ($p < 0.01$).

¹⁰ The earlier baseline descriptive analyses included grantees from the PFS 2013 through the PFS 2016 cohorts.

- The percentage of grantees who had moderate or large capacity to produce reports for prevention planning increased from 59% to 89% ($p < 0.01$).
- The percentage of grantees who had moderate or large capacity to produce reports for monitoring increased from 54% to 76% ($p < 0.05$).
- The percentage of grantees who had moderate or large capacity to share community-level data with key stakeholders increased from 73% to 91% ($p < 0.05$).
- *Prevention System Workforce Development*
 - The percentage of grantees who assessed the adequacy and needs of their prevention workforce regularly with timely data and sound methods increased from 16% to 49% ($p < 0.001$).
 - The percentage of grantees who had mechanisms supporting career advancement in substance abuse prevention increased from 16% to 33% ($p < 0.05$).
 - The percentage of grantees who provided opportunities for multidisciplinary cross-training increased from 43% to 91% ($p < 0.001$).
 - The percentage of grantees who had mechanisms supporting development of prevention leaders increased from 46% to 82% ($p < 0.05$).
 - The percentage of grantees who had mechanisms supporting enhancing the cultural competence of the substance abuse prevention workforce increased from 54% to 76% ($p < 0.001$).
 - The percentage of grantees who had mechanisms supporting building evaluation capacity in the prevention workforce increased from 56% to 76% ($p < 0.05$).
 - The percentage of grantees who took steps to recruit and retain high-quality staff in the prevention system increased from 43% to 70% ($p < 0.05$).
- *Sustainability*
 - The percentage of grantees who fostered community involvement and ownership increased from 78% to 94% ($p < 0.05$).
 - The percentage of grantees who built a data infrastructure increased from 70% at baseline to 88% at follow-up ($p < 0.05$).

2.3.2 Community Subrecipient Factors

For this report, community-level analyses focused on the following indicators of community subrecipient infrastructure, capacity, and processes, all obtained from responses to the CLI-R:

- Community subrecipient organization type;
- Community subrecipient capacity to implement their interventions at the beginning of their PFS funding;

- Data resources that community subrecipients had available at the beginning of their PFS funding;
- Training and technical assistance (T/TA) that community subrecipients received throughout their PFS funding;
- Number of partners and sectors that actively participated in the community subrecipients' PFS efforts; and
- Community subrecipient progress through the SPF steps.

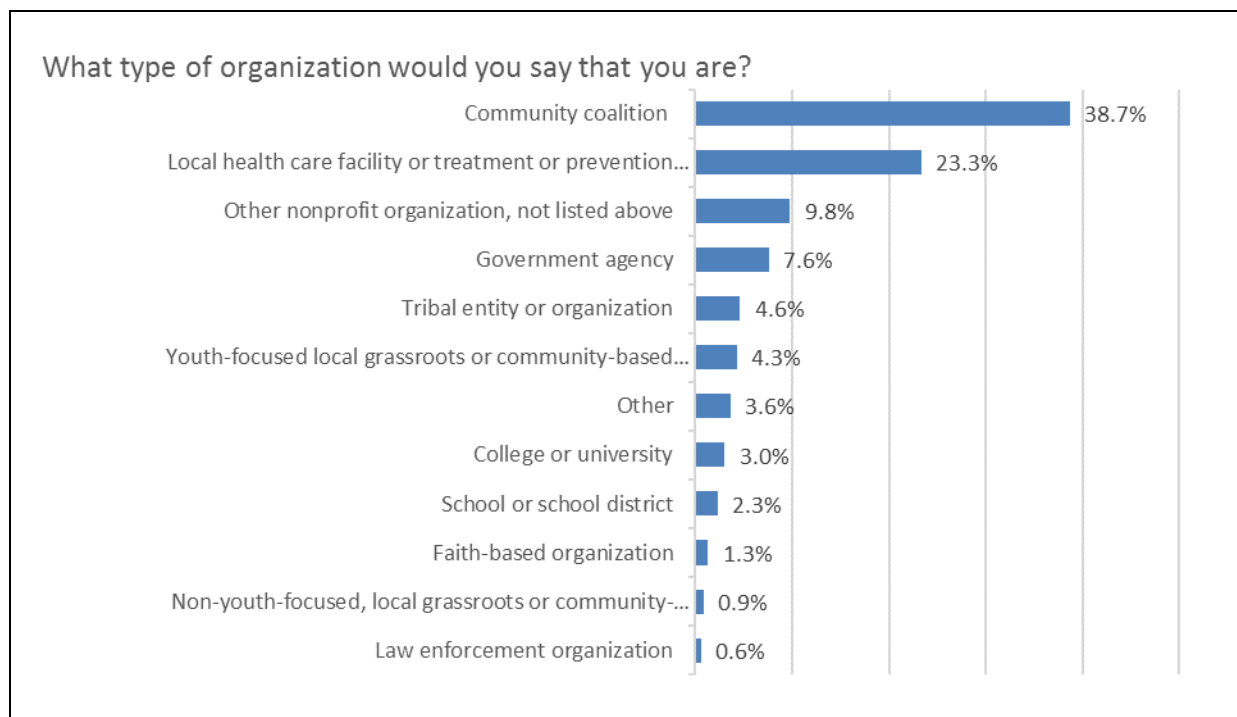
This section begins with descriptions of community subrecipient responses to individual items related to the indicators above, and then it describes the creation of related aggregate scales or indices for each of the indicators. It concludes with a preliminary look at the associations between the community-level indicator scales or indices and early outcomes for PFS 2013 and PFS 2014 community subrecipients.

Community Subrecipient Organization Type

Community subrecipients' self-descriptions of their organizations provided information on which types of community subrecipients the grantees selected and funded. Across cohorts and grantees, community subrecipients most often described themselves as community coalitions (39%) or as local health care facilities or treatment or prevention provider facilities (23%; see **Exhibit 37**). Of those community subrecipients who did not describe themselves as community coalitions, 56% partnered with a community coalition for the purposes of their PFS project. PFS 2014 community subrecipients more often described themselves as local facilities (33%) than as coalitions (28%), whereas community subrecipients in the PFS 2013, PFS II/2015, and PFS 2015 (New) cohorts more often described themselves as community coalitions than as any other organization type.

Exhibit 37. Community Subrecipient Organization Type

Most community subrecipients described themselves as either coalitions or as local health care, treatment, or prevention facilities.



Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

Community Subrecipient Capacity

Most community subrecipients across all cohorts agreed that they had enough capacity at the beginning of their PFS funding to implement their PFS interventions effectively, including capability to use data in prevention planning (88%), experience collaborating with other organizations on relevant prevention interventions (88%), experience with the target populations (87%), experience with relevant prevention interventions (85%), capability to use data in prevention evaluation (82%), and staff with the right skills (80%). Fewer community subrecipients agreed that they had enough staff (59%) or enough financial resources (57%; see *Exhibit 38*). There were no substantial cohort differences in self-ratings of capacity at the beginning of PFS funding.

Exhibit 38. Community Subrecipient Capacity

Most community subrecipients agreed they had enough capacity in most areas at the beginning of their PFS funding to implement their PFS interventions.



Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

An overall measure of capacity for each community subrecipient averaged the self-ratings on the nine individual items (from 1 = strongly disagree to 4 = strongly agree). On average, community subrecipients agreed they had enough capacity to implement their interventions (mean composite score = 3.00), and there were no significant differences in average capacity scores by PFS cohort. Four subscale measures of capacity represented the following: staff and financial resources (average of two items: enough staff and enough fiscal/financial resources; $r = 0.55$); staff experience (average of four items: staff with the right skills, experience with the target population, experience with relevant prevention interventions, and experience collaborating with other organizations on relevant prevention interventions; Cronbach's $\alpha = 0.81$); capacity to sustain efforts (one item: capability to sustain the prevention efforts over time), and data capacity (average of two items: capability to use data in prevention planning and capability to use data in prevention evaluation; $r = 0.83$). Community subrecipients indicated they had less capacity in

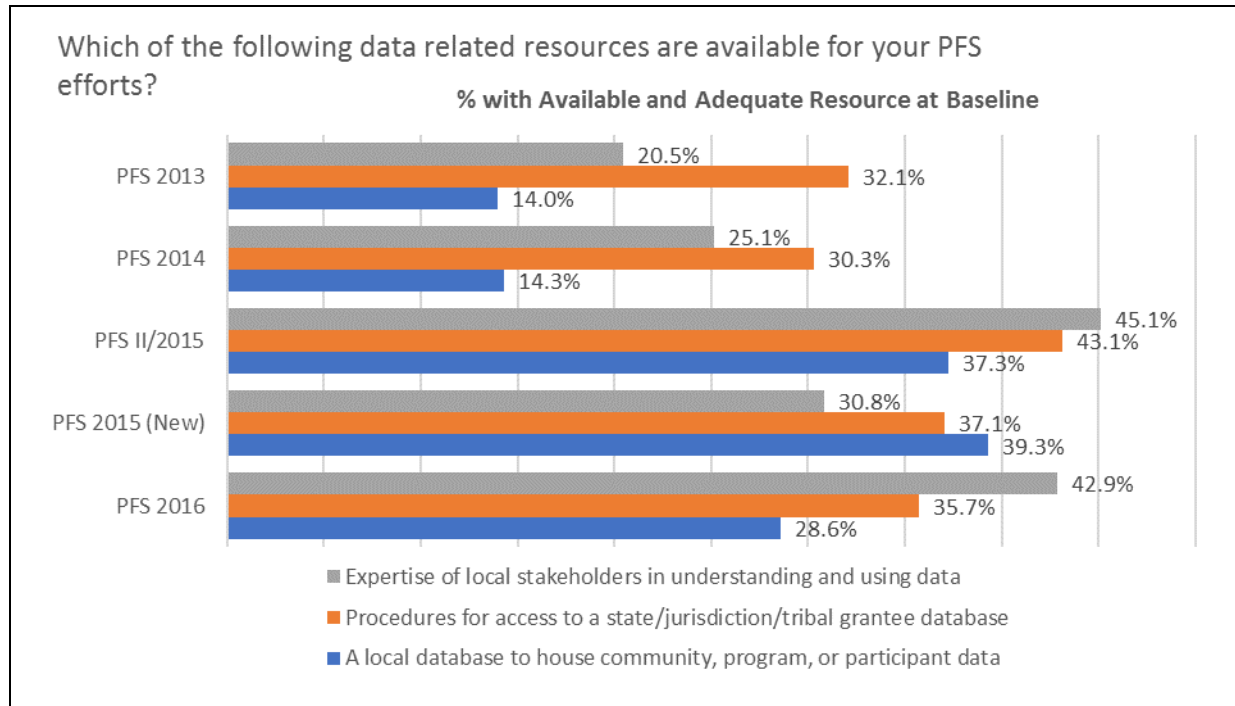
staff and financial resources (mean composite score = 2.59) than capacity to sustain efforts (mean = 2.86), staff experience (mean = 3.17), or data capacity (mean = 3.15).

Community Subrecipient Data Resources

The importance of data to each of the SPF steps makes data access and expertise vital parts of the infrastructure for any PFS community subrecipient. At the beginning of their PFS funding, community subrecipients reported on which data-related resources were not available to them, available but needed to be enhanced, or available and adequate. As shown in **Exhibit 39**, generally, fewer than half of the community subrecipients in any of the PFS cohorts felt that they had available and adequate local stakeholder data expertise, procedures to access grantee databases, or local databases of their own. These data resource gaps appeared more commonly for PFS 2013 and PFS 2014 community subrecipients than for community subrecipients in other cohorts. Subrecipients reported an average of 0.83 of the three potential resources to be available and adequate at the beginning of their PFS grants.

Exhibit 39. Community Subrecipients' Data Resources

Most PFS community subrecipients needed to improve their data-related resources at the beginning of their PFS funding.



Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

Community Subrecipient Training and Technical Assistance

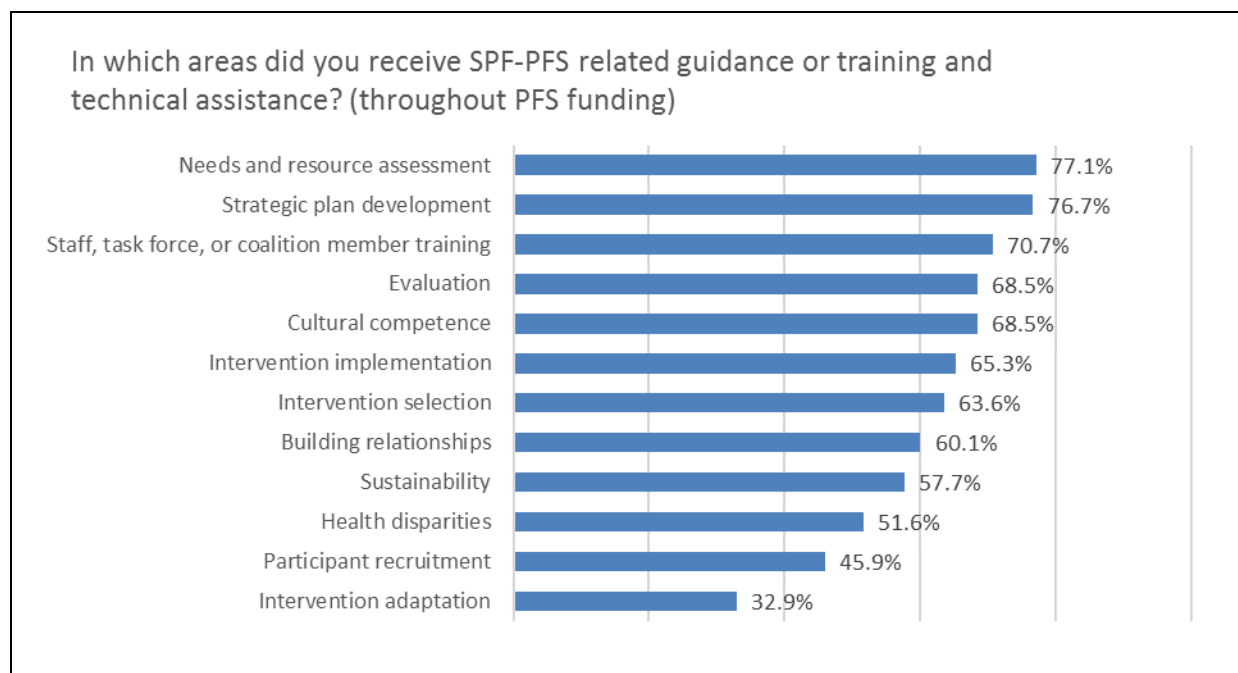
All grantees and many community subrecipients received prior SPF SIG (or PFS II) funding from SAMHSA to go through the SPF process and build their prevention workforce capacity.

However, since that time, most community subrecipients had experienced challenges regarding staff or project leadership turnover, likely leading to some loss of institutional knowledge. These challenges made T/TA a necessary component of the PFS program for all community subrecipients and an important factor to consider when looking at differences in outcomes.

During their PFS funding, community subrecipients most often reported receiving T/TA in needs and resource assessment (77%); strategic plan development (77%); staff, task force, or coalition member training (71%); evaluation (69%); cultural competence (69%); and intervention implementation (65%). Community subrecipients less often received T/TA in intervention adaptation (33%) and participant recruitment (46%; *see Exhibit 40*). In comparison to other cohorts, PFS 2016 community subrecipients received less T/TA in all areas, likely because they have been funded for a shorter period of time.

Exhibit 40. Training and Technical Assistance (T/TA)

During their PFS funding, many community subrecipients received T/TA in Strategic Prevention Framework areas such as strategic planning, needs assessment, intervention implementation, and evaluation.

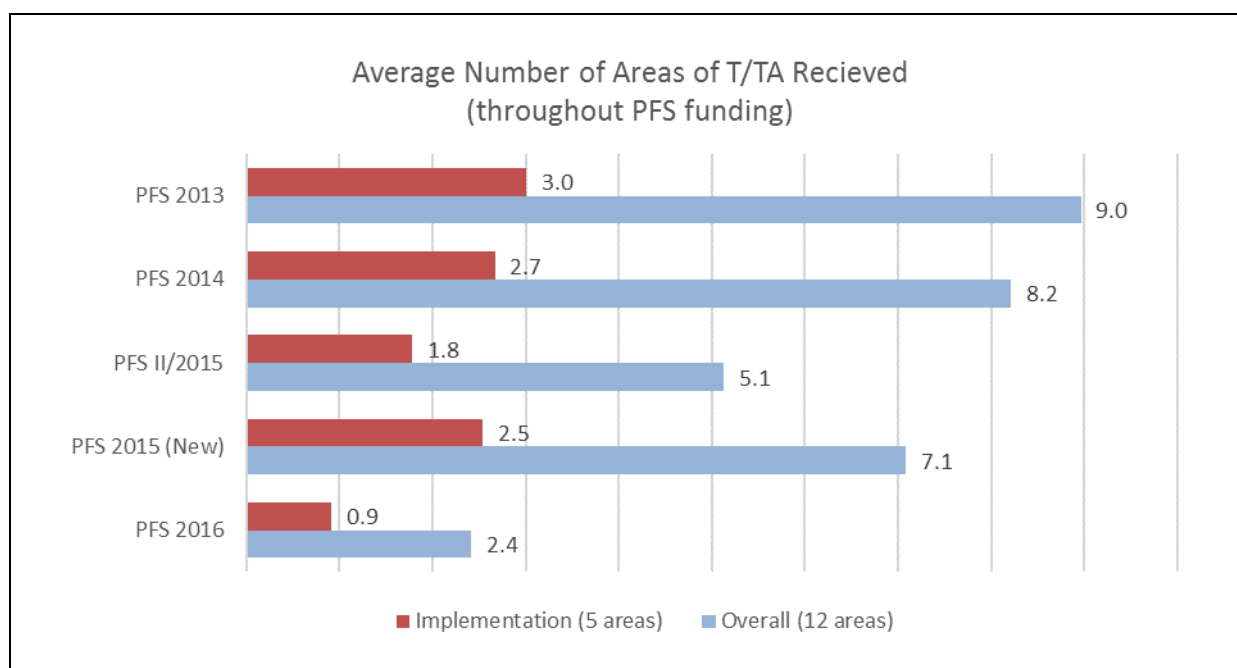


Note: This analysis included 228 community subrecipients from the PFS 2013 cohort, 171 community subrecipients from the PFS 2014 cohort, 223 community subrecipients from the PFS 2015 (New) cohort, 50 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

Two aggregate measures indicate the number of areas in which community subrecipients received T/TA while funded by PFS. The first measure summed across all 12 areas, and the second summed across the 5 areas more specifically related to intervention implementation (building relationships, intervention selection, participant recruitment, intervention implementation, and intervention adaptation). As shown in **Exhibit 41**, on average PFS 2013 community subrecipients received T/TA in more areas (overall and specifically related to implementation) than all other cohorts, likely because they have received funding for the longest period of time.

Exhibit 41. Training and Technical Assistance (T/TA)

Earlier cohorts of PFS community subrecipients have received T/TA in more areas, likely because they received funding over a longer period of time thus far.



Note: This analysis included 228 community subrecipients from the PFS 2013 cohort, 171 community subrecipients from the PFS 2014 cohort, 223 community subrecipients from the PFS 2015 (New) cohort, 50 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

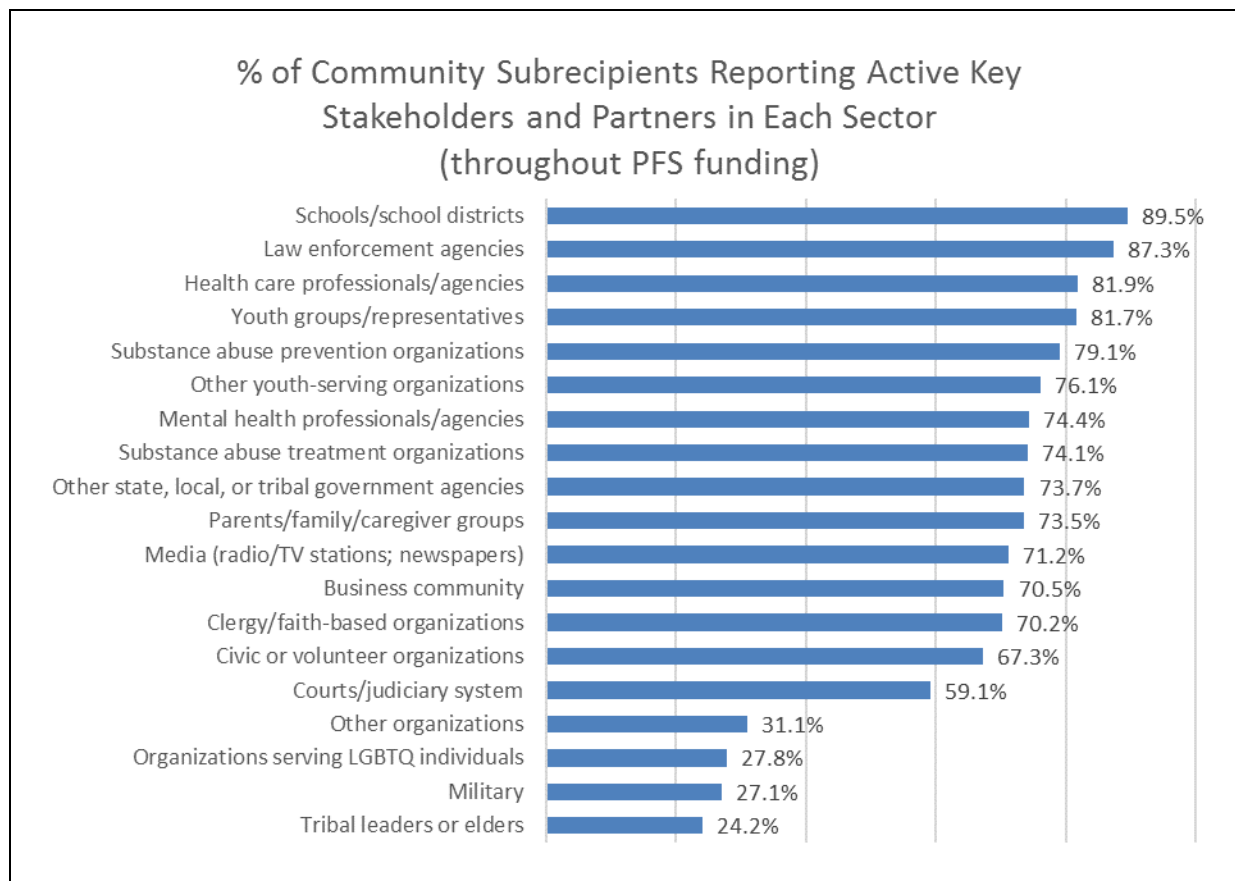
Community Subrecipient Stakeholders and Partners

Stakeholders and partners allow community subrecipients to leverage resources beyond their PFS funding. They can help PFS-funded organizations get the data they need for their needs assessments; contribute valuable insights into planning processes; donate personnel, space, and other in-kind resources for intervention implementation; provide access to target populations; and facilitate intervention implementation and evaluation activities. **Exhibit 42** shows the percentage of community subrecipients that had representatives of various sectors actively participate during their PFS grant through FY2017. Over 80% of community subrecipients reported active

stakeholders or partners in the following sectors: schools and school districts, law enforcement agencies, health care professionals and agencies, and youth groups and youth representatives.

Exhibit 42. Active Key Stakeholders and Partners

Community subrecipients actively involved stakeholders and partners from many different community sectors in their PFS activities.

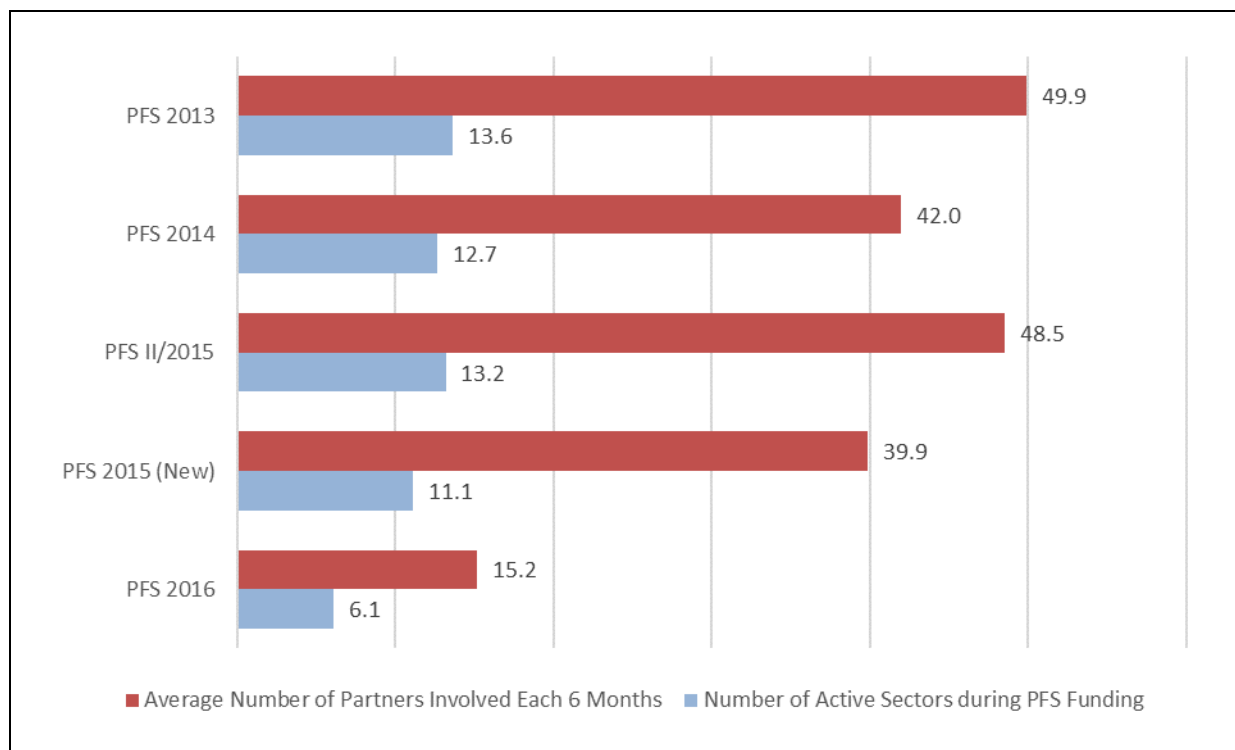


Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

Aggregate measures indicate the number of sectors with actively involved stakeholders during each community subrecipient's entire PFS grant and the average number of partners that actively participated during each 6-month CLI-R data collection period. On average, community subrecipients involved partners from 13 different sectors during their PFS grants (range = 1 to 19) and engaged an average of 45 partners at any one time (range = 0 to 1,068; see *Exhibit 43*). PFS II/2015 community subrecipients reported engaging a higher average number of partners than did community subrecipients in the other cohorts.

Exhibit 43. Community Subrecipients' Partnerships

On average, community subrecipients actively involved 45 partners or key stakeholders and 13 different partner sectors during their PFS funding.



Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

Community Subrecipient Progress Through SPF Steps

Community subrecipients receive PFS funding from their state, tribe, or jurisdiction grantees to implement community-level prevention interventions using the SPF steps: needs assessment, capacity building, strategic planning, prevention implementation, and evaluation. On the CLI-R, they responded to questions about whether their organization “completed an assessment of community needs and resources,” “conducted activities that produced gains in [their] organizational resources related to PFS during the past year,” completed “a SPF-PFS strategic plan,” delivered “any PFS-related prevention interventions,” or worked on “intervention evaluation activities related to process or outcomes evaluation of [their] PFS interventions.”

Exhibit 44 shows the percentage of community subrecipients that engaged in activities associated with each SPF step from the beginning of their grants through FY2017. All subrecipients engaged in evaluation activities, and more than 95% of subrecipients had engaged in capacity building and planning activities by the end of FY2017. Across cohorts, 83% of community subrecipients had

conducted a needs assessment by the end of FY2017. PFS 2016 community subrecipients were the least likely to have engaged in each SPF step by the end of FY2017, as they were through only the second year of their grant.

Exhibit 44. Strategic Prevention Framework (SPF) Engagement

Most community subrecipients had engaged in each of the SPF steps by the end of FY2017.

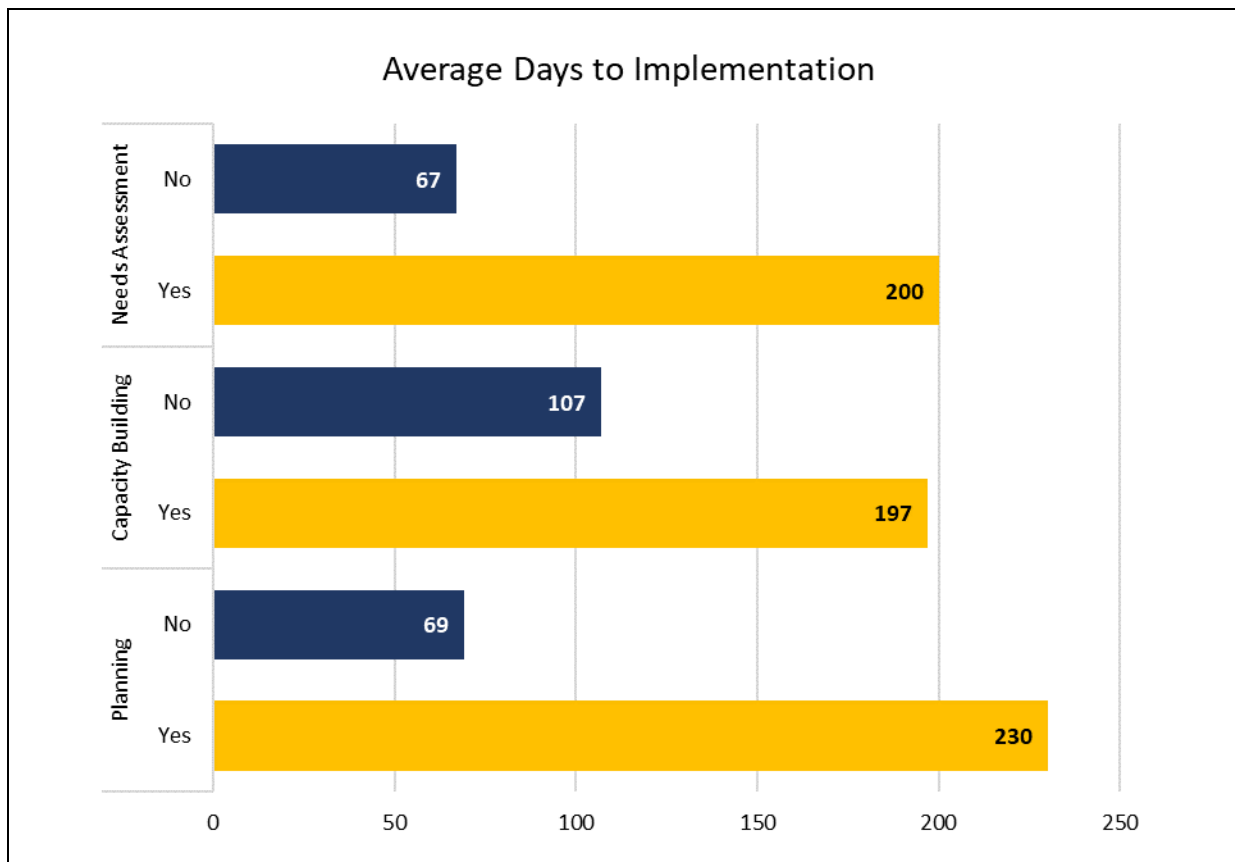
Strategic Prevention Framework (SPF) Steps	Cohort					
	Total, %	PFS 2013, %	PFS 2014, %	PFS 2015 (New), %	PFS II/2015, %	PFS 2016, %
Assessment	83.3	89.9	86.7	74.9	90.0	42.9
Capacity	95.5	97.8	97.1	93.6	92.0	78.6
Planning	96.1	93.0	99.4	96.2	100.0	92.3
Implementation	85.6	94.7	79.7	81.1	96.1	42.9
Evaluation	100.0	100.0	100.0	100.0	100.0	100.0

Notes: The percentages of community subrecipients providing SPF steps data varied for each SPF step. Of 695 funded community subrecipients, 98% (683) of community subrecipients provided data for assessment, 98% (684) for capacity, 92% (636) for planning, 99% (692) for implementation, and 98% (683) for evaluation. PFS = Partnerships for Success.

Implementation of the SPF steps provides some explanation for the community subrecipient implementation lag described in *Section 1.1.1*. Specifically, community subrecipients that completed a needs assessment before implementing their interventions took around 5 months longer to implement interventions than subrecipients that did not (see *Exhibit 45*). Community subrecipients that engaged in capacity-building activities before intervention implementation took around 3 months longer to implement interventions than subrecipients that did not, and community subrecipients that completed strategic plans before intervention implementation took nearly 4.5 months longer than those who did not. Implementing interventions before conducting needs assessments, building capacity, or developing strategic plans may allow some community subrecipients to implement more quickly, but likely at the cost of their potentially not targeting the most needy subpopulations, the most affected geographic areas, or the most influential risk and protective factors in those communities, possibly leading to less positive PFS outcomes in those communities.

Exhibit 45. SPF Steps and Implementation Lag

Community subrecipients that conducted needs assessments, capacity building, and planning before intervention implementation took longer to implement interventions after they received their PFS funding.



Notes: The needs assessment analysis included 63 grantees and 566 community subrecipients, the capacity building analysis included 63 grantees and 567 community subrecipients, and the planning analysis included 61 grantees and 503 community subrecipients.

Association Between Community Subrecipient Factors and Community Outcomes

EQ5 focused on associations between community outcomes and community subrecipient organization type, capacity to implement their interventions, data resources, T/TA received, and active partners and sectors. As with the evaluation of EQ3, available outcomes data for this report allowed us to look only at preliminary outcomes for PFS 2013 and PFS 2014 community subrecipients. The models specifically looked at the time period from 1 year before intervention implementation to 1 to 2 years postimplementation and used the 10 community factor indicators (scales or indices) described in *Section 2.3.2* as predictors of outcomes.

Substance use (past-30-day alcohol use, binge drinking, or PDM) was not significantly associated with any of the community subrecipient indicators, except in two instances. Community

subrecipients that reported enough staff and financial resources at the beginning of their PFS funding, or that received more T/TA related to intervention implementation during their PFS funding, demonstrated less impact on reducing binge drinking (staff resources: $p = 0.04$, $d = 0.10$; T/TA: $p = 0.02$, $d = 0.17$), the opposite of what we would have predicted. The analyses produced few other significant associations between individual community subrecipient indicators and other community outcomes. The minimal significant findings and inconsistent patterns found among the many variables included in these analyses lead us to conclude that it may be too early to uncover significant relationships with community outcomes. **Sections 3** and **4** provide more discussion of these results.

2.3.3 Barriers to and Facilitators of PFS Intervention Implementation

Through the Project Director Interviews, grantees shared numerous barriers to and facilitators of community subrecipient implementation of their PFS interventions. The challenges they described included capacity and cultural barriers, community pressures to implement interventions quickly, and lack of relevant EBPPPs. Capacity challenges included finding experienced staff to plan and implement prevention programming, staff turnover, confusion over roles and responsibilities, distractions from other projects, and gaps in community-level incidence or prevalence data. Cultural challenges included difficulties engaging culturally diverse communities, language barriers, and challenges with trying to change cultural norms around alcohol and drug misuse and abuse. Several community subrecipients experienced impatience from their communities and were pressured to begin providing services immediately rather than adhering to the SPF steps. Some communities lacked EBPPPs appropriate for their subrecipient communities and populations. Unique to PDM-targeted interventions, a couple of grantees reported that community subrecipients had difficulties arranging for the disposal of prescription drugs.

Grantees drew on numerous strategies to assist community subrecipients in overcoming their PFS-related challenges. Many grantees reported that greater communication or information sharing by the grantee (or among subrecipients) solved many challenges. These communication efforts included having regular telephone calls, grantee staff attending subrecipient meetings, reinforcing open lines of discussion, and offering multiple means of seeking assistance. Some grantees reallocated their staff to help with their communication with community subrecipients, such as by assigning a dedicated staff liaison. Several grantees consistently emphasized the SPF

model to community subrecipients to ensure their awareness of the importance of assessment and planning before intervention implementation. Many grantees described providing TA to subrecipients to address various barriers. Several grantees established learning communities or other formal/intentional peer-sharing processes to create networks among community subrecipients.

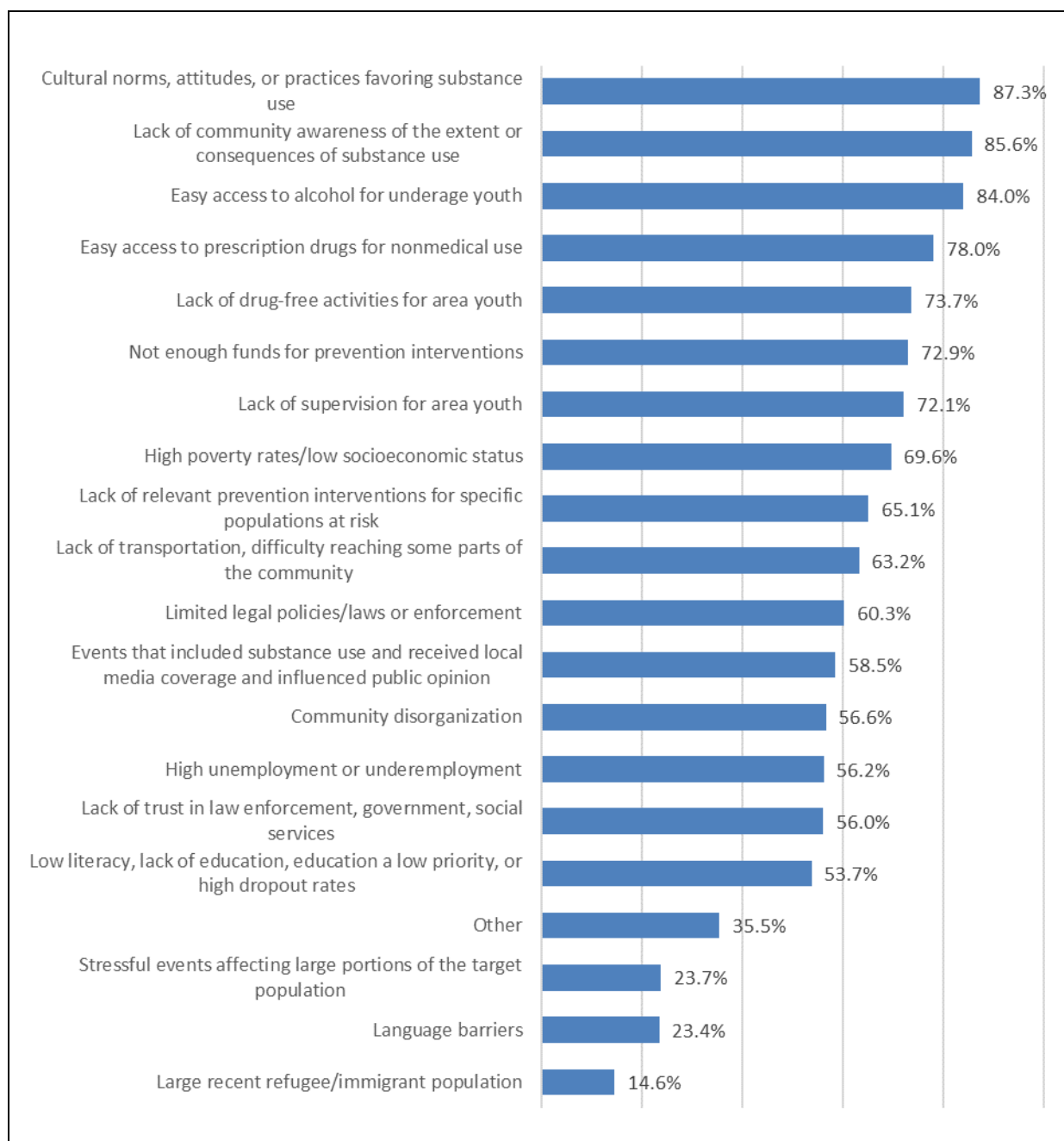
To reduce data collection burden on communities, many grantees created and disseminated standardized, manualized, or prefilled templates or tools. A few grantees provided their subrecipients with community-level data for planning and monitoring purposes. Finally, several grantees indicated that stakeholder involvement was key to ensuring community subrecipient success, and a couple of grantees reported a positive change in community norms as valuable to overcoming challenges.

Community Subrecipient-Reported Barriers

The CLI-R annually asked community subrecipients to rate how 19 different demographic, environmental, and cultural barriers or challenges affected their PFS prevention activities in their communities. Items were measured on a four-point scale, which indicated the level of impact each barrier had on community subrecipients' prevention activities (1 = No Impact to 4 = High Impact). As shown in **Exhibit 46**, the most frequently endorsed barriers that had moderate or high impact on community subrecipients' PFS activities were “cultural norms, attitudes, or practices favoring substance use” (endorsed by 87% of community subrecipients who provided barrier data), “a lack of community awareness of the extent or consequences of substance use” (endorsed by 86%), and “easy access to alcohol for underage youth” (endorsed by 84%).

Exhibit 46. Barriers to PFS Implementation

Community subrecipients reported many different barriers to their PFS implementation efforts.

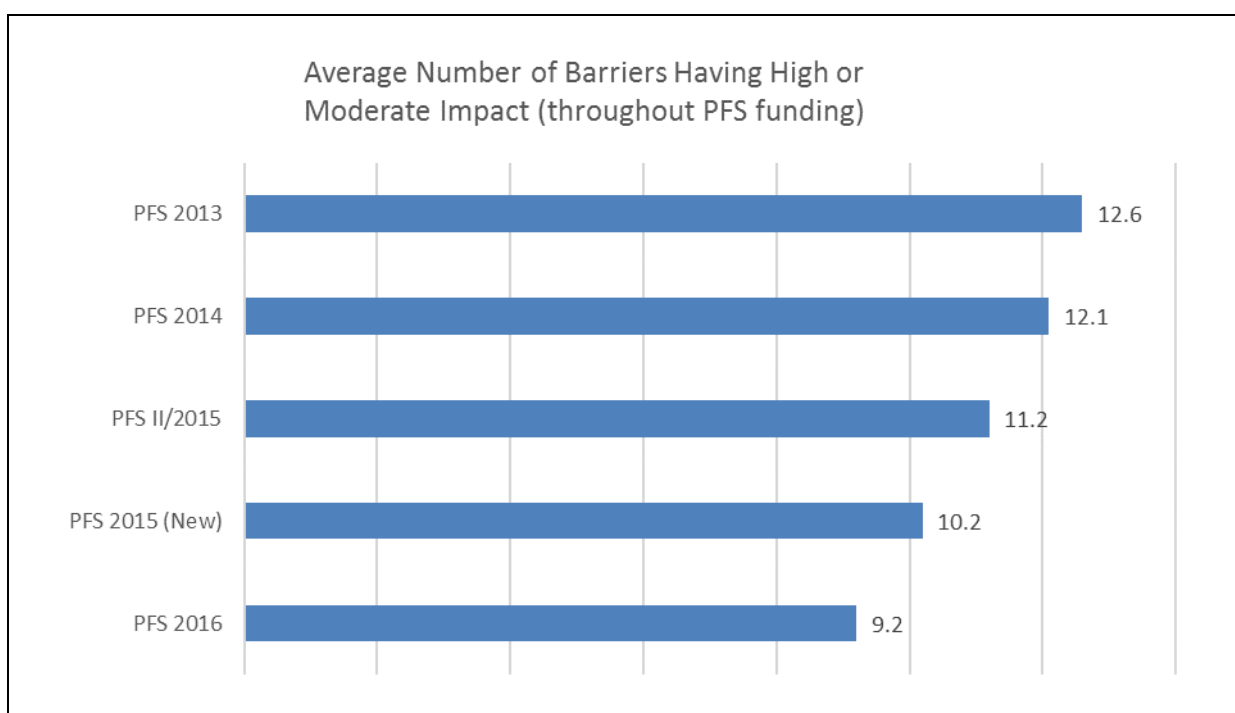


Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

On average, PFS 2013 and PFS 2014 community subrecipients reported the highest number of barriers as having high or moderate impact on their PFS activities, whereas PFS 2016 community subrecipients reported the least number of barriers (see *Exhibit 47*). This finding was expected, given that PFS 2013 and PFS 2014 community subrecipients generally received funding 2–3 years before PFS 2016 subrecipients and thus have had more time to experience and report challenges.

Exhibit 47. Barriers to PFS Implementation by Cohort

Community subrecipients in the earliest funded cohorts reported the highest number of barriers to their PFS implementation efforts.



Note: This analysis included 229 community subrecipients from the PFS 2013 cohort, 176 community subrecipients from the PFS 2014 cohort, 224 community subrecipients from the PFS 2015 (New) cohort, 51 community subrecipients from the PFS II/2015 cohort, and 14 community subrecipients from the PFS 2016 cohort.

3. Conclusions and Implications for Policy and Practice

This final evaluation report for SAMHSA’s Strategic Prevention Framework (SPF) Partnerships for Success (PFS) presents findings related to both the implementation process and early outcomes. The evaluation findings lead to the following conclusions and lessons to inform future programming.

3.1 Key Outcomes

- PFS enabled communities to reach many individuals with interventions that met their community needs. Community subrecipients implemented 2,281 PFS-related intervention activities from FY2014 through FY2017, reaching between 25 million and 55 million individual participants. The communities used a variety of implementation approaches and combinations of interventions, from implementation of individual strategies to more comprehensive combinations of individually targeted and community-based strategies.
- To date, the PFS program has resulted in significant state-level reductions in underage drinking (UAD) and binge drinking, as well as reductions in prescription drug misuse (PDM) among young adults. In addition, states that covered a larger geographic area with PFS funding showed greater reductions in stimulant, sedative, and opiate poisoning calls than states with less geographic coverage. At the local level, after implementing PFS interventions, community subrecipients experienced greater declines in PDM than they did before implementing PFS.
- The evaluation found the strongest and most consistent results at the grantee level. The strength of the results at the state level suggests that PFS had important effects on state-level prevention system capacity and overall prevention efforts. Moreover, community prevention systems depend on the support of a well-functioning state system to achieve their prevention goals. Although the evaluation found favorable community-level effects of PFS, community-level analyses of outcomes were hampered by community data limitations (see *Section 4, Limitations, Solutions, and Future Considerations*).

3.2 Factors Contributing to Success

- **Prevention system infrastructure and capacity building.** Grantees with stronger prevention system infrastructure at the beginning of their grants tended to achieve greater state-level reductions in PDM, UAD, and binge drinking than did grantees with weaker infrastructure. Three of the four composite grantee infrastructure measures—data capacity, prevention system workforce development, and sustainability efforts—were associated with reductions in prevalence of PDM, likely because this infrastructure allowed grantees to quickly address an emerging crisis. Having existing sustainability efforts was associated with reductions in UAD—an unsurprising result as many grantees

were sustaining efforts to address UAD that had begun under their Strategic Prevention Framework State Incentive Grants (SPF SIGs).

- **Collaboration.** Within state and local levels and between states and their communities, the PFS program strengthened collaboration through joint planning and collaborative problem solving.
 - Grantees often reported collaboration as a key ingredient for success. Statistical analysis showed that having more individuals active in epidemiological outcomes workgroups was associated with reductions in the prevalence of PDM as well as with increases in perceptions of parental or friend disapproval of alcohol use.
 - To successfully implement their PFS interventions, on average, community subrecipients collaborated with 45 key partners or stakeholders representing 13 different sectors of the community.

3.3 Policy Issues and Future Considerations

- **Implementation lag.** Grantees varied widely in the times within which they funded their communities, and community subrecipient initial implementation of interventions (implementation lag) averaged around 16 months from grantee funding date. CSAP may need to reassess whether quick implementation is realistic and whether support can be provided to expedite implementation. This is important to consider because lags in implementation directly affect the amount of prevention programming and exposure and, as a consequence, capacity to document the impact of prevention programming exposure on outcomes. Multiple factors contribute to lags, including program goals and requirements, capacity, and administrative issues.
 - The time required to conduct the SPF steps of needs assessment, capacity building, and planning (Steps 1–3) appeared to contribute to some of the delays in community subrecipient implementation. CSAP may consider whether the SPF process requires the observed funding and implementation lag times and consider resources that may shorten the time needed to complete earlier SPF steps. For example, in grant applications, SAMHSA could require grantees to have their strategic plans in place and to demonstrate the existence of local community data sources and related reports, which could then lead to grantees' better supporting community subrecipients in conducting needs assessments more quickly.
 - Other sources of implementation delay included administrative delays in funding subrecipients, sometimes due to grantee-level policies, such as the process for requesting proposals. SAMHSA could work directly with grantees to expedite each state's process by providing targeted training and technical assistance (T/TA). Other strategies to help address this might include outlining expected timelines and milestones for funding subrecipients in future SAMHSA solicitations; considering realistic community funding plans (e.g., having already developed requests for applications for subrecipients or having preselected communities) in application reviews; and intensively monitoring grantees that take more than 6 months to begin funding their communities.
- **Evidence-based prevention strategy identification and implementation.** One of the PFS program's Government Performance and Results Act (GPRA) measures focuses on

increasing communities' implementation of evidence-based programs, policies, and practices (EBPPPs). Although about 85% of community subrecipients reported implementing at least one EBPPP, they defined only about 49% of their intervention activities as EBPPPs. The PEP-C team identified an even smaller percentage of the interventions as EBPPPs, partially due to community subrecipient vagueness in describing the interventions. Grantees reported having relatively few evidence-based practices workgroup members or related meetings to help guide the selection of EBPPPs. In addition, grantees described challenges in finding appropriate EBPPPs for some targeted communities and subpopulations.

- Grantees and their community subrecipients need more T/TA related to identifying and selecting appropriate EBPPPs, including, for example, the provision of lists of interventions to address specific substances, geographic areas, or subpopulations of interest.
- At the same time, there is a relatively limited evidence base for environmental strategies and interventions targeting PDM. In addition, tribal and Pacific jurisdiction grantees described challenges with identifying culturally appropriate EBPPPs. CSAP may want to direct additional resources into establishing the efficacy and evidence base for commonly implemented interventions in these areas.
- As SAMHSA redesigns its approach to the identification and dissemination of evidence-based prevention strategies, the evaluation provides some lessons. Evaluation findings reinforce the need to provide training and guidance to SAMHSA grantees on what constitutes appropriate evidence and how best to align that understanding with local conditions. Registries and similar resource or guidance tools and documents should provide stakeholders with appropriate options as a function of local conditions, target population, available resources (i.e.; funding level), and potential impact. However, the next generation of tools will also need to better assist communities in addressing appropriate responses to emerging issues such as PDM and the opioid epidemic. It will be important to consider how to develop a system that has some flexibility but avoids adoption of approaches not grounded in solid research.
- **Workforce development.** High staff turnover posed a barrier to many grantees. In general, the substance abuse prevention field suffers from low salaries and lack of career ladders for advancement (SAMHSA, 2007); at the beginning of their grants, about 75% of grantees did not have mechanisms supporting career advancement for prevention staff. Some grantees also reported challenges finding experienced staff to plan and implement programming. About 40% of communities did not have enough staff at the beginning of their funding to implement their PFS activities.

Many grantees also indicated that they need to develop better processes to assess the adequacy and needs of the substance abuse prevention workforce. Some grantees improved on these processes through their PFS grants. CSAP should continue to provide related T/TA to grantees along with encouragement to help them get these processes in place. T/TA may also help grantees build capacity to collect data on prevention workforce needs. (See SAMHSA's [2018] report on PFS workforce development.)

- **Capacity.** PFS originally required grantees to select high-need and low-capacity communities, but most community subrecipients considered themselves to have sufficient capacity at the outset of their PFS funding. As CSAP reviews changes to programmatic requirements for its discretionary grant programs, it will be important to carefully

consider impacts of requirements on implementation start-up, T/TA needs, and expected outcomes. For example, a requirement of selecting low-capacity communities needs to be coupled with required capacity-building training to ensure that communities begin implementing interventions more quickly.

- **Sustainability.** Nearly all grantees reported taking steps to increase the sustainability of their prevention efforts even before they began their funding for PFS. Many grantees expressed a need to improve their sustainability efforts by institutionalizing policies, developing training plans, and diversifying funding streams. Over 40% of communities had not yet received sustainability-related training by the end of FY2017. CSAP may consider requiring that sustainability plans be submitted 2 years before grant end and requiring sustainability training at the grantee and community subrecipient levels.

4. Limitations, Solutions, and Future Considerations

This report serves as the final evaluation report for the SAMHSA/CSAP's Strategic Prevention Framework Partnerships for Success (PFS). The PEP-C evaluation team, in collaboration with CSAP, grantees, and our External Steering Committee, designed and implemented an evaluation intended to strengthen rigor while reducing data collection burden to stakeholders and communities. We also placed significant value on quality control, learning, and dissemination. Our cross-site evaluation of PFS incorporated several innovations to improve the overall rigor of the evaluation, such as the methodological approaches of latent class analysis (LCA) and meta-regression. We also leveraged administrative and archival data using propensity score matching to incorporate a community-level comparison design.

In this section we discuss some of the limitation we faced in our evaluation design, along with solutions we applied to overcome some of those limitations. We then provide suggestions, based on what we have learned over the past 5 years, for next steps and future directions for similar evaluations. The lessons we learned from the cross-site national evaluation of PFS include perspectives derived from our data analyses as well as feedback from stakeholders, including SAMHSA/CSAP staff, grantees, and external reviewers.

4.1 Limitations and Solutions

4.1.1 Differential Exposure

Limitation: All PFS II grantees received funding as part of the PFS 2015 cohort. Thus, grantees and community subrecipients in this former PFS II cohort group had more extensive experience with the PFS program than did other PFS 2015 grantees.

Solution: For all analyses, the PEP-C team separated findings for this cohort from those of other PFS 2015 grantees (PFS II/2015 cohort and PFS 2015 [New] cohort).

4.1.2 Addressing Implementation Lag and Delays

Limitation: To evaluate the success of PFS, it was important that enough community subrecipients implemented interventions for a long enough time to produce an impact on targeted

outcomes. For example, two grantees in the PFS 2014 cohort and two grantees in the PFS 2015 (New) cohort still had not funded communities through the end of FY2017. In addition, 158 funded community subrecipients had not yet begun implementing interventions. On average, community subrecipients took about 16 months from grantee funding date to begin implementing interventions, and some community subrecipients took more than 3 years (see *Section 1.1.1*). As a result, analyses in this report underestimate the community funding lag and community implementation lag in these cohorts.

Solution: Any funding or implementation lag findings should be considered underestimated until after all grantees fund their communities and all funded communities begin implementing interventions.

4.1.3 Improving Community-Level Outcomes

Limitation: Our evaluation findings showed consistent and strong positive results at the grantee level, but weaker results at the community level. Grantees expressed challenges in finding data to meet all of the community outcomes evaluation requirements, especially with regard to prescription drug misuse (PDM).

Solution: The PEP-C team provided extensive training and technical assistance (T/TA) to grantees to help them understand and meet community outcomes requirements and followed up with grantees through a data feedback process to improve the outcomes they provided.

4.1.4 Post-Baseline Data and Adequate Implementation

Limitation: Adequately assessing the evaluation questions for the cross-site national evaluation of the PFS program requires that sufficient postimplementation outcomes data be available to assess the impacts of interventions and other factors on outcomes. This was a challenge for PFS community-level data because of the delayed intervention implementation in many communities combined with lags in the availability of relevant outcomes data.

4.1.5 Using Extant, Secondary, and Archival Data

Limitation: SAMHSA implemented extensive design changes to National Survey on Drug Use and Health (NSDUH) items in 2015, which resulted in no NSDUH combined estimates for 2014–2015 for many of the PFS grantee outcome variables, especially those related to PDM. In

addition, trend breaks at the 2015 time point for these variables challenged the PEP-C team in assessments of trends from before 2015 to after 2015.

Solution: For this year's analyses, we treated pre-2015 estimates and trends as covariates to address the redesign bias and look at change through 2015–2016.

4.1.6 Evidence-Based Strategy Identification and Categorization

Limitation: The PEP-C team worked closely with SAMHSA and key stakeholders to streamline the Community-Level Instrument–Revised and improve its overall data collection accuracy. A key component of this process included improvements to the sections that gathered information about the intervention-related activities conducted by subrecipient communities. However, information provided by subrecipient communities often lacked the necessary detail to independently identify and classify the activity as an evidence-based program, practice, or policy (EBPPP). As stated earlier from a programmatic perspective, our findings highlighted the need for improving the classification of reported prevention programming as evidence based.

Solution: The PFS evaluation team used an empirical process based on participant responses and a systematic review of intervention activity descriptions to classify activities as evidence based. We also reviewed responses to interview questions to better understand how grantees identified, promoted, and disseminated information about EBPPPs to subrecipient communities.

4.1.7 Understanding the Combinations of Interventions

Limitation: PFS community subrecipients implemented a wide variety of interventions and combinations of those interventions. Understanding what they did, and what the subsequent impacts were on outcomes, required analytic approaches that categorized those combinations.

Solution: The PEP-C team categorized the interventions by CSAP strategy type, as done in previous evaluations, but also added examinations of service types, ecological targeting, evidence base, and implementation lags. Our innovative use of LCA allowed for an initial examination of what combinations of intervention approaches are most salient for each target outcome.

4.1.8 Measuring Dosage and Reach

Limitation: A significant number of PFS communities selected environmental strategies, media campaigns, and information dissemination as prevention strategies. Determining the number of participants reached continues to be an evaluation challenge to prevention-focused initiatives. Observed outliers in the dosage and reach data raised concerns about the accuracy of dosage and reach estimates. The large variety of dosage items, which differed based on CSAP strategy type, also posed challenges for consistent data analysis. In addition, because subrecipient communities reported measures of reach for each intervention-service type, the reported overall reach numbers likely duplicate individuals who were exposed to multiple interventions in a single community.

Solution: The PEP-C team initiated an extensive effort to clean the reach data through our data feedback process in FY2017. In addition, we developed a measure of community exposure to address aspects of the current limitations.

4.2 Considerations for Future Evaluations

Future evaluations of cross-site national programs such as PFS should consider the following concerns and recommendations:

- PFS II was significantly different from cohorts that followed, and its grantees provided important feedback to the PFS evaluation team. As such, we recommend that SAMHSA consider the development of pilot studies that include an evaluation feasibility component to test programmatic modifications and to explore effective approaches to assess impact.
- Future evaluations should adjust for poor or delayed intervention implementation and should consider approaches that compensate for implementation challenges in intervention communities when using comparison community designs. Although we completely endorse the Office of Management and Budget's directive to reduce data collection burden, we equally recognize the need to gather data to allow better monitoring of intervention implementation.
- Because delayed implementation may result in delayed effects, a longer follow-up period would allow for a more complete assessment of programs such as PFS. SAMHSA may consider reducing year 1 program funding and shifting those resources to extend implementation and evaluation-related data collection.
- As SAMHSA moves evaluation in-house and becomes more reliant on community-level data, better indicators of those data are needed. As such, data collection requirements need to include high levels of specification and documentation to facilitate accurate appraisal of data quality. Grantees and their communities need more T/TA to identify reliable and valid outcome measures at the community level.

- Future evaluations should attempt to build on advances made in the PFS evaluation by identifying better and readily available community-level indicators of targeted outcomes. For example, better access to emergency department visit and hospital data would have significant impact on the collection of a robust community-level set of substance use disorder-related consequences. SAMHSA could better support this access and manage data collection burden and costs by randomly selecting a smaller set of intervention communities and comparison communities and then targeting resources to improve outcomes data quality and accuracy.
- Future evaluations will need targeted resources to incorporate implementation science approaches and better strategies to collect the most salient predictors (e.g., intermediate outcomes and process variables) of program success. In addition, more time to collect process data would allow for examinations of how increases in capacity, infrastructure, and partnerships over the course of community program funding might influence implementation approaches.
- It is critically important to understand what works, but doing so equally requires understanding what was done. Future evaluations will need to improve data collection techniques to increase the accuracy of independent EBPPP designation. In addition, the PEP-C teams recommends continued use of such techniques as LCA to provide a better understanding of the comprehensive combinations of interventions implemented by communities.
- Better measures of dosage reach, overall and by subpopulations, are needed to more accurately assess the impact of indirect and population-level prevention programming. Future evaluations should build on the community exposure measure created for this evaluation and consider integrating additional innovative approaches. We believe SAMHSA's Innovation Policy Lab represents a unique opportunity to develop and test approaches to this and similar data collection challenges.

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Appendix A: Partnerships for Success Grantee Priorities and Number of Funded Community Subrecipients

Cohort	Grantee	Total number of subrecipients ever active through FY2017	Grantee Targeted Substances				
			UAD	PDM	Marijuana	Opioids	Other
PFS 2013	Arizona Department of Health Services	9	✓	✓			
PFS 2013	Arkansas Department of Human Services, Division of Behavioral Health Services	34	✓	✓			
PFS 2013	Guam Behavioral Health and Wellness Center	1	✓				✓
PFS 2013	Hawaii Department of Health, Alcohol and Drug Abuse Division	9	✓				
PFS 2013	Louisiana Department of Health and Hospitals	10	✓	✓			
PFS 2013	Montana Department of Public Health and Human Services—Addictive and Mental Disorders Division	23	✓	✓			
PFS 2013	Nebraska Department of Health and Human Services	16	✓				
PFS 2013	Nevada Division of Public and Behavioral Health	13		✓			
PFS 2013	New Jersey Division of Mental Health and Addiction Services	17	✓	✓			
PFS 2013	North Carolina Department of Health and Human Services	13	✓	✓			
PFS 2013	Palau Ministry of Health	1	✓				
PFS 2013	Pennsylvania Department of Drug and Alcohol Programs	5	✓	✓			
PFS 2013	Rhode Island Department of Behavioral Healthcare, Division of Developmental Disabilities	16	✓	✓	✓		
PFS 2013	Utah Division of Substance Abuse and Mental Health	13	✓	✓			
PFS 2013	Washington State Department of Social and Health Services	43	✓	✓	✓		

Cohort	Grantee	Total number of subrecipients ever active through FY2017	Grantee Targeted Substances				
			UAD	PDM	Marijuana	Opioids	Other
PFS 2013	West Virginia Department of Health and Human Resources	6	✓	✓			
PFS 2014	Cherokee Nation (Oklahoma)	11	✓	✓			
PFS 2014	Colorado Department of Human Services	6	✓	✓			
PFS 2014	Cook Inlet Tribal Council, Inc. (Alaska)	1	✓				
PFS 2014	Delaware Department of Health and Social Services	11	✓	✓			
PFS 2014	District of Columbia Department of Behavioral Health	9	✓		✓		
PFS 2014	Federated States of Micronesia Department of Health and Social Affairs	20	✓				
PFS 2014	Illinois Department of Human Services	9	✓				
PFS 2014	Iowa Department of Public Health	12	✓				
PFS 2014	Little Traverse Bay Bands of Odawa Indians (Michigan)	1	✓		✓		
PFS 2014	Minnesota—State of Minnesota	7	✓				
PFS 2014	Native American Health Center, Inc. (California)	5	✓				
PFS 2014	New York—Research Foundation for Mental Hygiene, Inc., at New York State Office of Alcoholism and Substance Abuse Services	10		✓		✓	✓
PFS 2014	Northern Marianas—Commonwealth Healthcare Corporation	3	✓	✓			
PFS 2014	Ohio Department of Mental Health and Addiction Services	10	✓	✓			
PFS 2014	Oklahoma Department of Mental Health and Substance Abuse Services	13		✓			
PFS 2014	Oregon Health Authority	14	✓	✓			
PFS 2014	Republic of Marshall Islands Ministry of Finance for Single State Agency	1	✓				

Cohort	Grantee	Total number of subrecipients ever active through FY2017	Grantee Targeted Substances				
			UAD	PDM	Marijuana	Opioids	Other
PFS 2014	Rocky Mountain Tribal Leadership Council (Montana)	1	✓				
PFS 2014	South Dakota Department of Social Services Prevention Program	15	✓				
PFS 2014	Tennessee—Department of Mental Health and Substance Abuse Services	10		✓			
PFS 2014	Texas Department of State Health Services	8	✓		✓		
PFS 2015	Alabama Department of Mental Health	8	✓				
PFS 2015	Alaska State Department of Health and Social Services	6		✓	✓	✓	
PFS 2015	American Samoa Department of Human and Social Services	8	✓				
PFS 2015	Connecticut State Department of Mental Health and Addiction Services	8	✓	✓		✓	
PFS 2015	First Nations Community Health Source	4	✓	✓		✓	
PFS 2015	Georgia Department of Behavioral Health and Developmental Disabilities	3		✓			
PFS 2015	Great Lakes Inter-Tribal Council, Inc. (Wisconsin)	4	✓	✓			
PFS 2015	Indiana Family and Social Services Administration	10	✓	✓			
PFS 2015	Kansas Department for Aging and Disability Services	8	NA	NA	NA	NA	NA
PFS 2015	Kentucky State Cabinet for Health and Family Services	14		✓		✓	✓
PFS 2015	Lower Brule Sioux Tribal Council (South Dakota)	1	✓				
PFS 2015	Maine State Department of Health and Human Services	21	✓	✓	✓		
PFS 2015	Maryland State Department of Health and Mental Hygiene	9	✓				
PFS 2015	Massachusetts State Department of Public Health	16		✓			
PFS 2015	Michigan State Department of Community Health	9	✓	✓			

Cohort	Grantee	Total number of subrecipients ever active through FY2017	Grantee Targeted Substances				
			UAD	PDM	Marijuana	Opioids	Other
PFS 2015	Mississippi State Department of Mental Health	10	✓	✓			
PFS 2015	Missouri State Department of Mental Health	5	✓	✓			
PFS 2015	New Hampshire Bureau of Drug and Alcohol Services	23	✓	✓		✓	✓
PFS 2015	New Mexico State Department of Human Services	8	✓	✓		✓	
PFS 2015	Nooksack Indian Tribal Council (Washington)	1	✓	✓	✓		✓
PFS 2015	North Dakota State Department of Human Services	10	NA	NA	NA	NA	NA
PFS 2015	Puerto Rico Mental Health/Anti-Addiction Services Administration	6	✓				
PFS 2015	South Carolina State Department of Alcohol and Drug Abuse Services	20	NA	NA	NA	NA	NA
PFS 2015	Southern Plains Tribal Health Board (Oklahoma)	4	✓	✓			
PFS 2015	Tanana Chiefs Conference, Inc. (Alaska)	1	✓				
PFS 2015	Vermont State Department of Health	12	✓	✓	✓		
PFS 2015	Virgin Islands Department of Health	0	✓		✓		
PFS 2015	Virginia Department of Behavioral Health and Development Services	9		✓		✓	✓
PFS 2015	Winnebago Tribe of Nebraska	0	✓				
PFS 2015	Wisconsin Department of Health Services	13		✓			
PFS 2015	Wyoming State Department of Health	23	✓	✓			
PFS 2016	California State Department Health Care Services	6		✓			
PFS 2016	Florida Department of Children and Families	8		✓			✓

NA = not applicable; PDM = prescription drug misuse and abuse; UAD = underage drinking

Appendix B: Instruments, Measures, and Constructs Linked to Evaluation Questions

The Strategic Prevention Framework Partnerships for Success (SPF-PFS) evaluation questions and logic model informed the development of all data collection instruments, measures, and related constructs. **Exhibit B-1** lists the constructs and variables assessed in this report as encompassed by the logic model (Exhibit 7) and evaluation questions (Exhibit 8). The color coding in the exhibit matches that of the logic model: blue for inputs, purple for outputs, and green for outcomes. Lighter shades relate to funded community subrecipients and darker shades to grantees. Each construct in the exhibit is linked to the specific questions in the Grantee-Level Instrument–Revised (GLI-R), Community-Level Instrument–Revised (CLI-R; see <https://www.samhsa.gov/sites/default/files/pfs-com-lev-inst.pdf>), Project Director (PD) Interview, or Program Evaluation for Prevention Contract (PEP-C) Management Reporting Tool (MRT) wireframes pages that include the relevant items. Please see the instruments or wireframe for the exact wording of items and response options. **Section 2** also provides more detail about the relevant questions and items.

Exhibit B-1. Constructs, Instruments, and Items, by Evaluation Question

Construct	Data Source	Item Location and Description
EQ1. Was the implementation of PFS programs associated with a reduction in underage drinking and/or prescription drug misuse and abuse?		
Grantee-level outcomes:	Secondary data from the National Survey on Drug Use and Health and National Poisoning Data System	Not applicable
Intervening variables (e.g., perception of peer disapproval, perceived risk or harm of use)		
Substance use (e.g., 30-day alcohol use, PDM, binge drinking)		
Consequences (e.g., alcohol-related crime, driving under the influence of alcohol and other drugs)		

(continued)

Exhibit B-1. Constructs, Instruments, and Items, by Evaluation Question (continued)

Construct	Data Source	Item Location and Description
Community-level outcomes:	Secondary data from administrative and survey data sources reported by grantees in the PEP-C MRT	MRT 3.3 (data source, targeted substance, targeted outcome, data source type, reported outcome, response options, population/sample parameters, data time frame, number of events, denominator, calculated value, value type, variability)
Intervening variables (e.g., perception of parental or peer disapproval, perceived risk or harm of use, family communication)		
Substance use (e.g., 30-day alcohol use, PDM, binge drinking)		
Consequences (e.g., alcohol- and drug-related car crashes and injuries, alcohol- and drug-related crime, alcohol- and prescription drug-related emergency visits, overdose/poisoning)		
EQ3. What intervention type, combinations of interventions, and dosages of interventions were related to outcomes at the grantee and community levels? (Community outputs)		
Intervention type (and number implemented)	CLI-R	33a–33g (service type, CSAP strategy, ecological level), 36a–b (EBPPP), 48–52, 63, 81, 87, 113–114, 116, 121, 123, 124a, 125–128a, 129a, 130a, 131, 132, 143–144, 147, 154a, 155a, 156a, 157a, 158a, 159a, 160, 161a, 162, 190 (activity descriptions)
Timing	CLI-R	33d (start date), 33h (active status), 33i (end date), 62, 64, 78, 82, 98, 112, 115a, 142 (start dates and whether or not implemented in cycles)
Dosage	CLI-R	44, 68a–68b, 85–86, 88, 118–119, 128b, 129b, 149a–149d, 150a–150d, 151a–151c, 152, 153, 155b, 156b, 157b, 158b, 161e, 195c, 196c (number and length of sessions, number of activities, number of times shown)
Reach and number served	CLI-R	39g (target population number), 45–47, 53a–53b, 67b–67c, 69a–69b, 80, 84, 89a–89b, 101, 103a–103b, 115b–115c, 120a–120b, 122a–122b, 124b, 130b, 133a–133b, 149e, 150e, 151d, 154b–154c, 159b, 161b–161c, 163a–163b

(continued)

Exhibit B-1. Constructs, Instruments, and Items, by Evaluation Question (continued)

Construct	Data Source	Item Location and Description
EQ5. How does variability in factors (infrastructure, community subrecipient selection, strategy selection, training and technical assistance [T/TA], barriers to implementation) relate to outcomes across funded communities?		
Grantee Input: Infrastructure	Grantee QPR	MRT 2.2.1–2.2.3 (council and workgroup members, sectors represented, and meetings)
	GLI-R	1a–1e, 2 (collaboration), 9–13 (data availability and capacity), 17–18 (staff credentials; workforce development mechanisms)
Community Input: Infrastructure	CLI-R	1–3 (organization/coalition), 10–13 (local data sources), 20a–20i (organizational capacity), 24–25 (key stakeholders/partners), 26–27 (data infrastructure)
Grantee Output: Community subrecipient selection	Grantee QPR	1.4–1.4.2 (community information, including type and number of community subrecipients)
	PD Interview	1–3 (definitions of “high need” and “low capacity”)
	CLI-R	4–5 (prior SPF SIG funding)
Community Output: Intervention selection	PD Interview	4–5, 6a (EBPPP selection and criteria)
	CLI-R	35a–35c (targets), 36b (EBPPP), 37 (history)
(Grantee Output: Training and technical assistance)	GLI-R	18c–e, 18g (prevention workforce training), 24a (evaluation training)
	PD Interview	6 (training for EBPPP selection)
Grantee Output: Training and technical assistance	CLI-R	23a–23n (TA received)
Grantee Output: Barriers to implementation	PD Interview	23–24 (barriers and solutions for community subrecipient PFS success)
Community Output: Barriers to implementation	CLI-R	206a–t (impact of barriers on PFS activities)
Additional Monitoring Measures		
Progress through SPF steps	CLI-R	6 (cultural competence); 8–9, 14–18 (assessment); 21–22 (capacity); 28 (sustainability); 29–31 (planning); 32 (implementation); 44–52, 145–146 (capacity); 202–205 (evaluation)

Note: CLI-R = Community-Level Instrument–Revised; GLI-R = Grantee-Level Instrument–Revised; EBPPP = evidence-based programs, policies, and practices; EQ = evaluation question; MRT = Management Reporting Tool; PD = Project Director; PDM = prescription drug misuse and abuse; PEP-C = Program Evaluation for Prevention Contract; PFS = Partnerships for Success; QPR = Quarterly Progress Report; SIG = State Incentive Grant; SPF = Strategic Prevention Framework; T/TA = training and technical assistance.

Appendix C: Outcomes Analysis Information

C.1 National Survey of Drug Use and Health Grantee-Level Outcomes Analyses

The structure of the current grantee-level analysis model separates changes over time in the outcome constructs from changes in the measurement properties among variables that had differences in item content after the 2014–2015 redesign of the National Survey on Drug Use and Health (NSDUH). It also captures two periods of linear change: normative changes in outcomes (before Partnerships for Success [PFS] funding) and changes in outcomes after PFS funding that differed from what was expected if the existing, normative trends had continued.

NSDUH Data

The NSDUH data come from estimates provided at the state level by the Center for Behavioral Health Statistics and Quality (CBHSQ). At the request of the Program Evaluation for Prevention Contract (PEP-C) team, these data included state-level standard errors, which allowed us to incorporate information on the sample sizes and sampling variability that contributed to the prevalence estimates for each state, without the need for individual-level observations. The total sample sizes that contributed to the estimates across PFS 2013, PFS 2014, PFS 2015, and PFS 2016 state grantees¹¹ included in the analyses was ~44,900 adolescents age 12–17 and ~45,100 young adults age 18–25. Participants were weighted in the NSDUH to represent ~3,306,000 adolescents and ~20,783,000 young adults. The NSDUH data used in this report cover estimates from 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015 (for available variables), and 2015–2016.

NSDUH Redesign. The key changes in the NSDUH redesign that affected PFS grantee-level analyses were (1) differentiation of the threshold for binge drinking between males and females; (2) changes in the definition for measuring the misuse of prescription drugs, including questions about any use of prescription drugs in addition to questions about misuse (i.e., nonmedical use); and (3) changes in consequence measures (e.g., perceived risk of harm from alcohol use; (CBHSQ, 2015)). The combined 2-year estimates that the PEP-C team received from the NSDUH

¹¹ CBHSQ could provide NSDUH data only for state grantees and the District of Columbia, so these analyses exclude the 8 territorial and 12 tribal grantees in those cohorts.

excluded 2014–2015 estimates for redesigned variables because they represent data that would be combined based on two nonidentical measures.

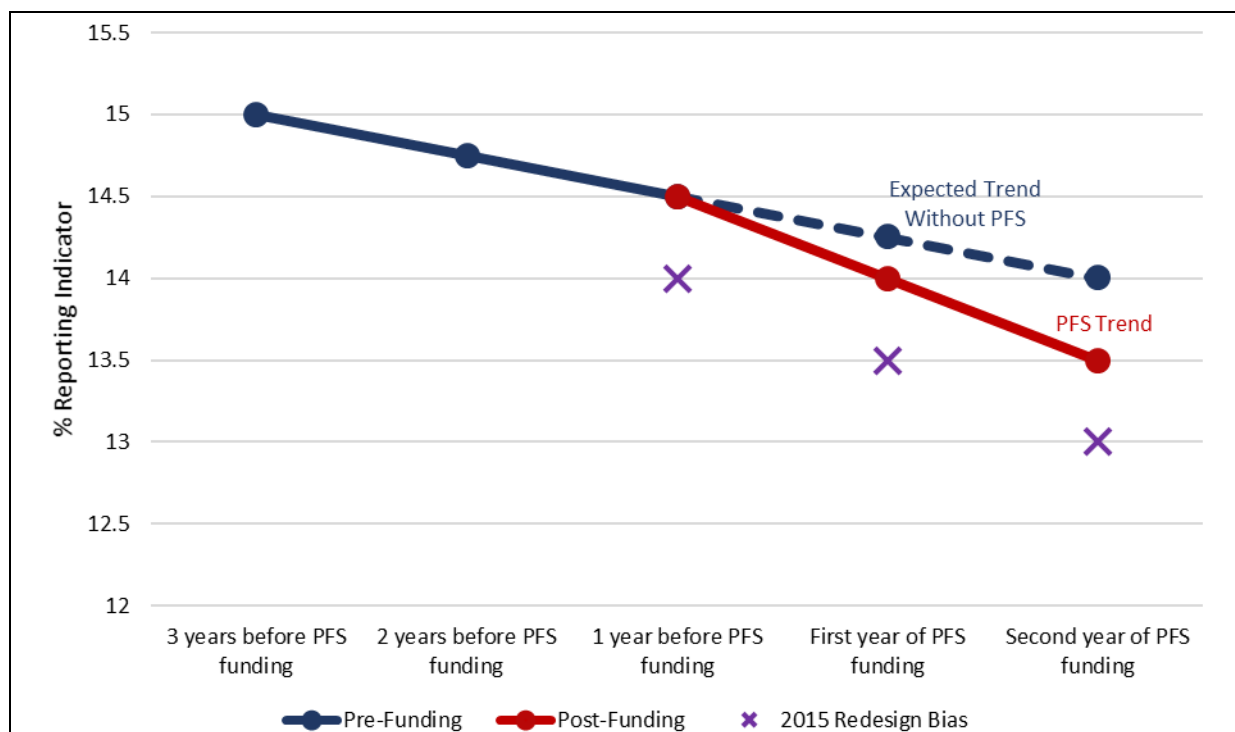
Modeling Measurement Bias and PFS Program Effects

The inclusion of the redesigned binge drinking and prescription drug misuse and abuse (PDM) variables in grantee-level analyses presents the potential for measurement bias because responses may differ between pre- and post-redesign measures for the same outcome constructs. These differences hamper the examination of trends over time because it is difficult to determine how much of the change is due to PFS funding and how much is due to changes in the measure. The PEP-C team devised an analysis strategy, in consultation with CSAP, CBHSQ, and methodologists on the NSDUH team, that separates the differences between the predicted prevalence rate for an outcome *had the question not been changed* (based on extrapolation of the pre-funding, pre-redesign trend) from the *actual* prevalence rate (using the post-redesign outcome).

Exhibit C1-1 is an example of such an analysis. The solid blue line illustrates the estimated outcome trajectory from 2 years before baseline through baseline (i.e., the year before PFS funding). All observations before baseline for all PFS cohorts are based on pre-redesign outcomes. Even for PFS 2016, the first year of the redesign (2015–2016) represents their baseline (their year before PFS funding). The dotted blue line extrapolates the pre-funding trend, and the solid orange line represents the additional decrease in the outcome after funding of PFS above and beyond the expected decrease without the PFS program; the difference between these two slopes represents the PFS program effect. However, for models involving binge drinking, PDM, and perceived risk, there is an additional element: the inclusion of observations affected by the NSDUH redesign.

Exhibit C1-1. NSDUH Outcomes

Model for pre- and post-funding change that accounts for NSDUH redesign bias.



Because these analyses combined multiple PFS cohorts, the baseline (year before funding) represents different years. This allows us to model the redesign bias. For example, if we look at binge drinking, the baseline measure for PFS 2013 and PFS 2014 will be from the “old” measure, whereas the baseline for PFS 2016 will be from the “new” measure. We can compare the binge prevalence rates across all time points between the old and new measures (with an indicator variable) and model any adjustment in the prevalence rates attributable to the change in measurement (i.e., “redesign” bias), captured in Exhibit C1-1 by the 0.5% gaps between the red dots and the X’s.

Statistical Model for NSDUH Outcomes

The PEP-C team used a random effects meta-regression model to fit outcome data (van Houwelingen et al., 2002). This type of model handles missing data under the full information maximum likelihood framework—that is, it assumes that missing variables are predictable by the values of non-missing variables (i.e., missing-at-random). The results present key statistical tests corresponding to (1) the expected annual linear change over time through the year before funding (baseline), which is also extrapolated as the expected change beyond baseline without PFS

funding; (2) the additional annual increment in change attributable to PFS, above and beyond the expected change without PFS funding; and (3) the average difference between the pre-redesign outcome and post-redesign outcome at all time points (for binge drinking and PDM analyses; i.e., a redesign bias adjustment). *Exhibit C1-2* provides detailed information on the model results.

Exhibit C1-2. Estimates for Pre- and Post-PFS Funding Changes on NSDUH Outcomes

Outcome	Pre-PFS Funding					Post-PFS Funding						Redesign Bias Adjust-ment	RBA x PFS Interac-tion
	Est	StdErr	DF	tValue	Probt	Est	StdErr	DF	tValue	Probt	Cohen's d	Cohen's d	Cohen's d
30-day alcohol (age 12–17)	-0.72	0.07	42	-9.90	<.0001	-0.05	0.20	246	-0.27	0.7844	-0.06		
30-day alcohol (age 12–20)	-0.78	0.09	42	-8.40	<.0001	-0.59	0.25	241	-2.36	0.0189	-0.43		
30-day alcohol (age 18–25)	-0.31	0.11	42	-2.84	0.007	-0.72	0.29	246	-2.50	0.0129	-0.26		
30-day binge (12–17)	-0.51	0.07	42	-7.33	<.0001	-0.17	0.20	196	-0.85	0.3981	-0.28	0.25	-0.09
30-day binge (12–20)	-0.62	0.10	42	-6.41	<.0001	-0.68	0.28	192	-2.45	0.0152	-0.64	0.31	-0.18
30-day binge (18–25)	-0.76	0.11	42	-6.68	<.0001	-0.22	0.32	194	-0.69	0.4886	-0.1	0.44	0.17
30-day psychotherapeutics (12–17)	-0.19	0.04	42	-4.62	<.0001	-0.18	0.12	195	-1.55	0.1239	-0.61	0.1	-0.07
30-day psychotherapeutics (18–25)	-0.25	0.07	42	-3.65	0.0007	-0.45	0.19	196	-2.30	0.0223	-0.78	0.6	-0.23
12-month psychotherapeutics (12–17)	-0.39	0.07	42	-5.35	<.0001	-0.28	0.21	196	-1.33	0.1836	-0.52	0.33	-0.05
12-month psychotherapeutics (18–25)	-0.49	0.11	42	-4.61	<.0001	-0.82	0.30	196	-2.70	0.0076	-0.84	1.22	-0.15
30-day analgesics (12–17)	-0.21	0.03	42	-5.85	<.0001	-0.13	0.10	194	-1.24	0.2172	-0.47	-0.07	-0.07
30-day analgesics (18–25)	-0.34	0.05	42	-6.40	<.0001	-0.17	0.15	196	-1.16	0.2458	-0.36	0.04	-0.04
12-month analgesics (12–17)	-0.45	0.06	42	-7.16	<.0001	-0.24	0.18	196	-1.34	0.1833	-0.48	0.17	-0.1
12-month analgesics (18–25)	-0.77	0.09	42	-8.59	<.0001	-0.18	0.26	196	-0.70	0.4853	-0.21	0.35	-0.03
Perceived risk of alcohol use (12–17)	-0.27	0.01	42	-2.80	0.0077	0.38	0.28	196	1.36	0.1753	0.38		
Perceived risk of alcohol use (18–25)	-0.38	0.14	42	-2.78	0.008	0.74	0.39	196	1.90	0.0594	0.51		
Disapproval of same age peers (12–17)	0.37	0.07	42	5.05	<.0001	0.07	0.19	246	0.36	0.7195	0.12		
Parental disapproval (12–17)	0.06	0.07	42	0.79	0.4369	-0.21	0.19	246	-1.1	0.272	-0.30		
Friends disapproval (12–17)	0.63	0.09	42	6.79	<.0001	0.95	0.25	246	3.82	0.0002	0.76		

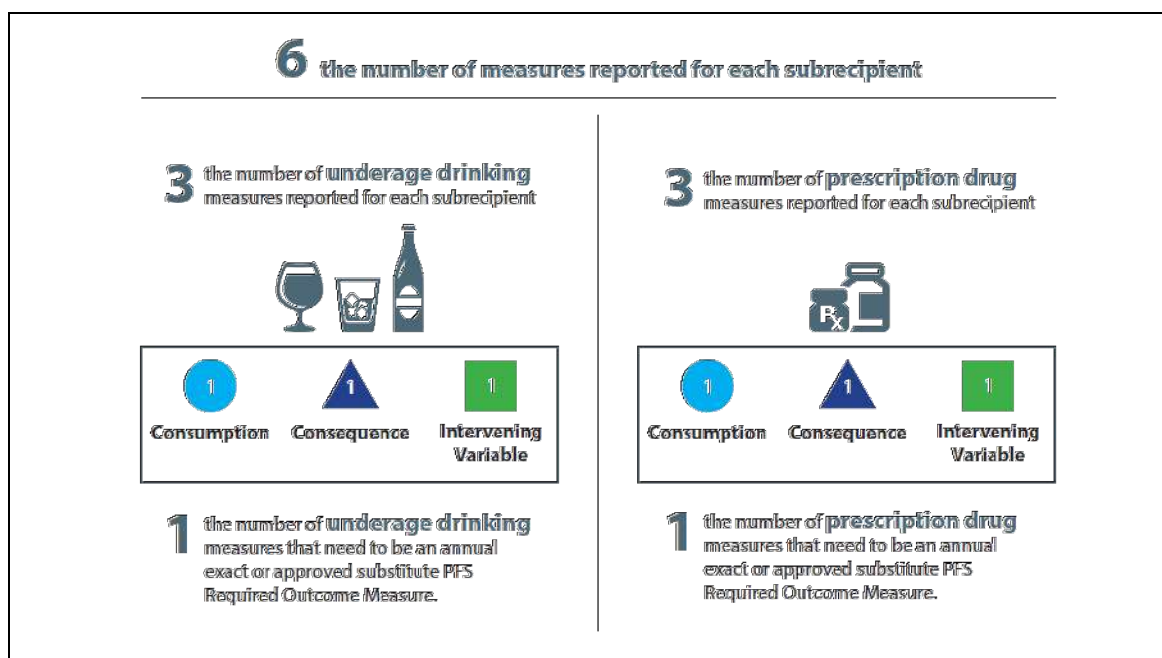
C.2 Community Outcomes Data Collection and Analysis

Community Outcomes Data Collection

The Community Outcomes module of the Management Reporting Tool (MRT) requests descriptions of the outcome measures, including target substance and outcome, data source type and name, reported outcome calculation description, item and response wordings, sample or population age and grade parameters, time frame of data collection, and actual outcome values and variability estimates.

Exhibit C2-1 outlines the grantee reporting requirements for the PFS cross-site national evaluation. Grantees needed to provide one annual outcome for each of their funded communities for each of the following: (1) UAD, (2) PDM, and (3) any other targeted substance. In addition, they had to provide data for at least two time points (pre-PFS and toward the end of their grant) for two additional UAD measures and two additional PDM measures. Grantees provided separate information for each community and each outcome. The outcomes provided in the Community Outcomes module come from existing survey and administrative data in the state, tribe, or jurisdiction.

Exhibit C2-1. Community-Level Outcomes Reporting Requirements for Partnerships for Success Grantees



Notes: Grantees targeting additional substances (e.g., marijuana) must provide one annual exact or approved substitute measure for each additional target. PFS = Partnerships for Success.

A key limitation of the community outcomes data is that the repeated measures across outcomes for each community vary in terms of having different time spans from the time period that the data represent to the baseline time period—that is, the year before grantees received funding. For example, a community may have one outcome¹²—say, past-30-day alcohol use—for which the data come from an every-other-year survey; it may have three reported pre-baseline observations¹³ on that outcome (for FY2008, FY2010, and FY2012), one reported post-baseline observation (for FY2014), and no reported observation for its baseline year (FY2013). On another outcome, such as substance-use-related emergency department visits, the same community may have annually reported observations from FY2012 through FY2015 (i.e., one pre-baseline, one baseline, and two post-baseline).

Grantee cohorts also varied in the percentage of communities for which they reported any post-baseline (postimplementation) outcomes (see *Exhibit C2-2*). Specifically, for most community outcomes, PFS 2015 grantees reported postimplementation data for a substantially smaller percentage of their communities than did PFS 2013 or PFS 2014 grantees. PFS 2016 grantees reported only preimplementation data in time for this report.

¹² Outcomes count each outcome variable for each community separately. So if community X reports community outcomes for past-30-day alcohol use, past-30-day PDM, communication with parents, alcohol-related arrests, and prescription-drug-related emergency department visits, then they have five outcomes included in their count.

¹³ Observations count each time point for each outcome variable for each community separately. So if community X has those 5 outcomes each measured at 5 separate time points, then they have 25 separate observations.

Exhibit C2-2. Percentage of Communities within Cohort with One or More Post-baseline Measures, by Outcome

Outcome	PFS 2013		PFS 2014		PFS 2015	
	N = 216	%	N = 146	%	N = 231	%
Past-30-day alcohol use	182	84.3%	99	67.8%	91	39.4%
Past-30-day prescription drug misuse	116	53.7%	96	65.8%	92	39.8%
Past-30-day binge drinking	1	0.5%	38	26.0%	45	19.5%
Family communication	1	0.5%	14	9.6%	13	5.6%
Perceived risk of harm—alcohol	128	59.3%	61	41.8%	91	39.4%
Perceived risk of harm—prescription drug misuse	127	58.8%	58	39.7%	96	41.6%
Perception of parent or peer disapproval—alcohol	63	29.2%	56	38.4%	32	13.9%
Perception of parent or peer disapproval—prescription drug misuse	68	31.5%	58	39.7%	33	14.3%
Alcohol- and other drug-related arrests	65	30.1%	65	44.5%	18	7.8%
Alcohol- and other drug-related crashes	48	22.2%	45	30.8%	20	8.7%
Alcohol-related crashes	47	21.8%	28	19.2%	20	8.7%
Prescription drug-related crashes	1	0.5%	26	17.8%	6	2.6%
Substance use-related emergency department visits	54	25.0%	22	15.1%	3	1.3%
Alcohol-related emergency department visits	41	19.0%	18	12.3%	0	0.0%
Prescription drug-related emergency department visits	54	25.0%	19	13.0%	3	1.3%

Community Outcomes Data Aggregation

Data processing at the outset of analyses either aggregated or collapsed community-level outcomes in multiple ways to form a suitable analytic dataset. Subrecipient communities sometimes contributed multiple estimates for one outcome within a single time point, for example, by having separate reports for past-30-day alcohol use for 8th, 10th, and 12th graders, which complicated estimation of both data prevalence and modeling of outcomes. We combined data by grade/age and then by duplicated report by grantee.

Aggregating Over Grades or Ages. Grantees reported some outcomes separately by grade (or, more rarely, by age) for some subrecipient communities. For example, while one grantee may have reported past-30-day alcohol use as one estimate inclusive of Grades 6 through 12 for each of its communities, another might have reported separate values for each of those grades. We aggregated multiple grade (or age) reports for a community for the same variable by taking the mean of all reported rows within each specific time frame. Where possible, these aggregate estimates weighted grade- (or age-) specific reports by the sample size of each reported value.

Duplicates by Grantee. In some cases, grantees reported the same estimated value across several, or all, of their subrecipient communities, possibly reflecting the use of a state-level estimate. To avoid biasing results by counting these distinct values multiple times, the data processing team collapsed the estimates within each time frame across the relevant communities (i.e., counted the estimate only once).

Community Outcomes Model Framework

We conducted estimation and comparison of change over time before and after baseline/implementation with multilevel models estimated with SAS PROC MIXED. These models nested repeated reports of each outcome within each community subrecipient and nested all community subrecipients within grantee. The models included data only from 3 years before baseline (intervention implementation) through 2 years after. In most cases (55%), we assigned baseline as the year before the community subrecipient received funding from the grantee, as they began implementing interventions in their first year of funding. In other cases (45%), community subrecipients experienced a year or more delay or lag in implementing interventions (see **Section 1.1.1**). In these cases, the analyses adjusted the categorization of baseline for those community subrecipients to reflect how much lag they reported in implementation (ranging from 1 to 3 years).

Most of the community outcomes analysis models used a completely unstructured variance structure, with variance components included for change over time, intercept, and their covariance at both the grantee and community subrecipient level. In some cases, noted below, this structure was untenable because of estimation or convergence problems and was adjusted.

Exhibit C2-3 shows model estimation change over time for each outcome in both the pre- and post-baseline periods, as well the difference in slopes between the two time periods and the significance of that difference.

Exhibit C2-3. Change Over Time on Reported Partnerships for Success Community Outcomes

Outcome	Baseline Estimate (%)	Average Change per Year (%), Pre-baseline Through Baseline			Average Change per Year (%), Baseline Through 2 Years Follow-up			Additional Annual Change Attributed to PFS			
		Pre slope	SE	p-value	Post slope	SE	p-value	Diff slope	Diff SE	p-value	Effect size (d)
Past-30-day alcohol use	24.8	-0.09	0.68	0.89	-1.27	0.65	0.50	-1.18	0.77	0.12	0.25
Past-30-day prescription drug misuse	6.35	-0.19	0.26	0.47	-0.78	0.24	0.00	-0.60	0.29	0.04	0.39
Past-30-day binge drinking	18.50	0.24	0.97	0.80	-1.65	0.76	0.03	-1.89	1.29	0.14	0.31
Family communication	51.24	1.36	2.34	0.56	5.21	1.41	0.00	3.86	3.00	0.21	1.03
Perceived risk of harm—alcohol	65.74	1.01	1.75	0.57	0.09	1.65	0.96	-0.92	1.19	0.44	0.01
Perceived risk of harm—prescription drug misuse	76.11	1.35	1.99	0.50	-0.84	1.81	0.64	-2.19	1.45	0.13	0.08
Perception of parent or peer disapproval—alcohol	77.12	-1.99	1.00	0.05	0.46	0.87	0.59	2.45	1.48	0.10	0.06
Perception of parent or peer disapproval—prescription drug misuse	87.85	-1.23	3.61	0.73	-2.43	3.50	0.49	-1.20	1.56	0.44	0.18
Alcohol- and other drug-related arrests	18.17	-2.22	1.08	0.04	-1.51	1.12	0.18	0.71	0.66	0.29	0.09
Alcohol- and other drug-related crashes	9.08	-1.36	0.89	0.13	-0.42	0.91	0.65	0.94	0.90	0.30	0.10
Alcohol-related crashes	8.86	-0.91	0.83	0.27	-1.11	0.85	0.19	-0.20	0.84	0.81	0.26
Prescription drug-related crashes	5.62	-7.96	3.38	0.02	8.44	3.80	0.03	16.40	4.45	0.000	2.10
Substance use-related emergency department visits	2.78	0.52	0.97	0.59	-0.12	1.02	0.91	-0.64	0.53	0.23	0.05
Alcohol-related emergency department visits	2.08	-0.28	0.90	0.75	0.09	0.93	0.92	0.38	0.31	0.23	0.09
Prescription drug-related emergency department visits	3.05	1.02	1.54	0.51	0.76	1.56	0.63	-0.27	0.39	0.50	0.20

C.3 NPDS Poisoning Call Data Analyses

National Poisoning Data System Data

The National Poisoning Data System (NPDS) includes more than 60 million exposure case records and product-specific data about more than 390,000 products going back to 1983. It plays a public health role by tracking poison exposure outbreaks across the country. Case data are uploaded every 8 minutes to the NPDS from all 57 American Association of Poison Control Centers (AAPCC) member poison centers, covering all 50 states, the District of Columbia, American Samoa, the Federated States of Micronesia, Guam, Puerto Rico, and the U.S. Virgin Islands.¹⁴ All AAPCC member poison centers use electronic health record collection systems with mandatory common data elements and reporting requirements. During normal AAPCC member poison center operations, staff enter data in real time as they manage cases.

Of direct interest to PFS evaluation efforts, the NPDS collects incidence data separately for the domains of sedatives, antidepressants, stimulants, opioids, and ethanol. The PEP-C team subset the substance-specific datasets it obtained from the NPDS to individuals in the PFS targeted age ranges for underage drinking (UAD; age 12–20 for the ethanol dataset) and PDM (age 12–25 for the other four domains). The PEP-C team merged across substance-specific datasets by individual identifiers to create cases in which individuals could have ingested multiple substance types. This ensured that individual cases would not be counted multiple times when we aggregated across substance types.

The individual poisoning cases were aggregated up to ZIP-code-level counts, which were then summed to the county level. If a county contained ZIP codes that had a mix of PFS and non-PFS ZIP codes (as identified from the PFS MRT community information data reported by grantees), two sub-county-level counts were created for that county: one for PFS and one for non-PFS (see, e.g., Stearns County in *Exhibit C3-1*). Next, the 2014 age 12–24 population counts for the counties from the American Community Survey (ACS) data (summed across the corresponding PFS and non-PFS ZIP codes) were merged with the NPDS data to calculate poisoning rates per 10,000 youth using the following formula: poisoning rate = (poisoning count in the

¹⁴ Analyses for this report included only state grantees and the District of Columbia in the PFS II, PFS 2013, PFS 2014, and PFS 2015 cohorts and excluded tribal and Pacific jurisdiction grantees.

county/population count for the county) x 10,000. The analyses used propensity-weighted comparisons between PFS and non-PFS sub-counties.

Comparison Community Data

To assess the effectiveness of the PFS intervention on poisoning calls in the most rigorous way possible outside of a randomized experimental design, the PEP-C team compared communities where PFS was implemented with communities where it was not. We used a non-equivalent control groups design (W. Shadish et al., 2002) with propensity score matching (Rosenbaum & Rubin, 1983), whereby “treated” groups are compared with “untreated” groups on outcomes of interest. Typically under such designs, because of nonrandomization, potential confounding variables may predict both group membership (PFS or non-PFS community) and outcome. Without some control of confounders, either statistically or by design, it would not be possible to distinguish whether any changes in the outcomes were due to PFS programming or to the confounding variables (Pedhazur & Pedhazur-Schmelkin, 1991; W. Shadish et al., 2002).

Therefore, identifying potential comparison communities required the identification of the types of community-level (e.g., ZIP code-level, county-level) confounding variables that are likely related to grantees’ and communities’ decisions to select specific communities into PFS on the basis of risk factors specific to their jurisdictions. For this purpose, the PEP-C team used the NPDS, ACS, Fatality Analysis Reporting System (FARS), and Uniform Crime Reports (UCR) as data sources. For this final evaluation report, we focused on the PFS 2013 through PFS 2016 cohorts. Because we had NPDS data for each fiscal year from 2013 through 2016, we used baseline (pre-funding) data for each cohort; that is, for PFS 2013 grantees we used FY2013 data, for PFS 2014 grantees we used FY2014 data, for PFS 2015 grantees we used FY2015 data, and for PFS 2016 grantees we used FY2016 data. For the ACS, FARS, and UCR data, we used the 2014 releases for each dataset. The following list outlines the comparison community selection data sources. Key variables selected for propensity score modeling begin with an asterisk and appear in bold:

- PFS Community Targeted ZIP Codes—from grantee reports in the PEP-C MRT subrecipient information module
 - Used to code all available ZIP codes as 1 = PFS or 0 = non-PFS
- U.S. Postal Service ZIP Codes and Counties

- Supplementary dataset to assist in the merging of all other data sources, where the data have either ZIP codes or county indicators but not both, to (1) merge against or (2) aggregate up to the county level
- NPDS/ACS—ZIP-code-level data aggregated up to the county level
 - ***Pre-PFS prescription drug poisoning rate per 10,000 among youth age 12–25 within each county, with separate estimates as needed for (1) the part of the county participating in PFS and (2) the part of the county not participating in PFS**
- 2014 FARS—ZIP code level
 - ***Sum of the number of crash fatalities involving a drunk driver across all PFS ZIP codes in the county**
 - ***Sum of the number of crash fatalities involving a drunk driver across all non-PFS ZIP codes in the county**
- 2014 UCR—county level (note that these estimates do not differ for PFS and non-PFS jurisdictions in a county because of the level of aggregation)
 - ***Number of DUI violations**
 - ***Number of liquor law violations**
 - ***Number of drug violations**

The data source merging and aggregation to the county level by PFS status yielded a dataset that resembles Exhibit C3-1, a small cross-section of the combined dataset for selected counties in Minnesota.

Exhibit C3-1. Example of the Combined Dataset Used for Selecting Comparison Communities

state	county	pfs_select	FARS Number of DUI-Involved Fatalities	Population Count of Youth ages 12-24	Baseline Poisonings per 10,000 Youth	UCR Drug Violations	UCR Liquor Law Violations	UCR DUIs
MN	Chippewa Count	0	4	2138	9.35453695	1	0	12
MN	Chisago County	0	0	8259	8.475602373	42	78	125
MN	Clay County	0	3	2738	10.95690285	160	712	394
MN	Clay County	1	0	13578	1.472970982	160	712	394
MN	Clearwater Cou	0	0	1526	13.1061599	9	16	8
MN	Clearwater County	0	5	1526	13.1061599			
MN	Cook County	0	6	767	39.11342894	28	13	23
MN	Cottonwood Cou	0	6	2056	14.59143969	13	51	75
MN	Crow Wing Coun	0	8	11778	16.1317711	256	283	404
MN	St Louis Count	0	4	43248	16.6481687	690	1047	864
MN	Stearns County	0	5	22109	9.046089828	579	806	1066
MN	Stearns County	1	0	17356	43.78889145	579	806	1066
MN	Steele County	0	4	6974	22.94235733	169	116	159

Note that, in the cross-section of the dataset displayed in Exhibit C3-1, the two highlighted counties (Clay and Stearns) include at least one ZIP code participating in PFS, but not all ZIP

codes in those counties participated in PFS. We distinguish the part of the county that is “PFS” from the part of the county that is not; thus, the highlighted counties appear twice in the dataset with different data values for some covariates.

Propensity Score Weighting

Propensity scoring is a statistical approach used to balance measured confounders or covariates that influence (1) the probability of selection into two or more non-experimental groups and (2) intervention outcomes (Rosenbaum & Rubin, 1983; W. Shadish et al., 2002; West, Biesanz, & Pitts, 2000); without balancing of confounders, intervention effects would likely be biased. To generate weights for PFS and non-PFS sub-counties in each state, the PEP-C team used a special case of logistic regression (i.e., generalized boosted regression; McCaffrey, Ridgeway, & Morral, 2004; Ridgeway, McCaffrey, Morral, Burgette, & Griffin, 2017) to estimate predicted probabilities that individual sub-counties would be selected for participation in PFS, with the PFS status variable (0 = non-PFS, 1 = PFS) as the outcome variable and the bolded covariates listed above as predictors. These predicted probabilities are the propensity scores.

In general practice, once we control for the propensity score, covariate distributions should be equal across conditions, which would mimic random assignment of sub-counties to PFS and non-PFS conditions. These scores are then converted to inverse-probability-of treatment weights and added as weights in outcome analyses to produce unbiased estimates of the intervention effect (Harder, Stuart, & Anthony, 2010; McCaffrey et al., 2004; Rosenbaum & Rubin, 1983; W. R. Shadish, 2010).

Exhibit C3-2 shows the initial unweighted differences on covariates between PFS sub-counties ($n = 444$) and potential comparison sub-counties in their states ($n = 2,094$). Three of the five covariates examined had effect size differences beyond the recommended $d < .10$ to consider the covariates sufficiently balanced across intervention conditions, with the highest value for liquor offenses ($.15$).

Exhibit C3-2. Unweighted and Propensity Score Weighted Differences Between PFS and Non-PFS Comparison Sub-counties

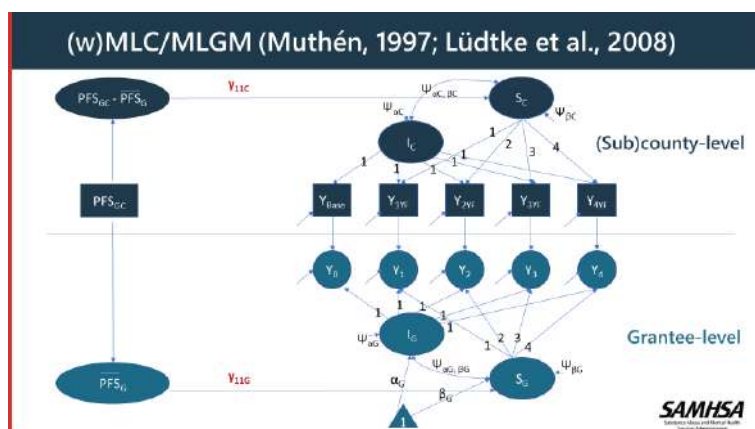
Outcome	Unweighted Differences			Propensity Weighted Differences		
	t	p-value	Cohen's d	t	p-value	Cohen's d
UCR drug offenses	2.21	0.027	0.10	0.58	0.55	0.02
UCR DUI offenses	2.41	0.015	0.10	0.23	0.81	< 0.01
UCR liquor offenses	3.09	0.002	0.15	0.46	0.64	0.01
FARS drunk driving fatalities	0.55	0.58	0.03	2.45	0.014	0.09
NPDS prescription drug poisonings per 10,000 youth/young adults	0.18	0.85	0.01	0.41	0.67	0.02

FARS = Fatality Analysis Reporting System; NPDS = National Poisoning Data System; UCR = Uniform Crime Reports.

Weighting of PFS and non-PFS sub-counties using the inverse probability of treatment weights achieved covariate balance (see Exhibit C3-2). The propensity score matching reduced the absolute value of the differences between PFS and non-PFS communities on all five measures to a standardized mean difference (i.e., d) of $< |.10|$.

Poisoning Data Outcome Analysis Model

The analyses of the poisoning call outcome data used a weighted multilevel latent growth modeling (wMLGM) approach. Each of the four cohorts (PFS 2013 through PFS 2016) contributed a cohort-specific baseline (e.g., FY2013 for PFS 2013) and up to four additional post-baseline yearly measures through FY2017. All cohorts except PFS 2013 would have missing data, by design, at one or more time points. Analysis of NPDS data from previous evaluation reports has shown that, at the points where there is data overlap, there are no cohort differences using the approach recommended by Miyazaki and Raudenbush (2000); test of the assumption of no cohort differences in poisoning rates for the same time point (e.g., baseline) at a different point in calendar time (i.e., baselines coming from different years) showed a nonsignificant interaction and justified using, for example, PFS 2013 data to extrapolate what would have been observed for the missing PFS 2014 and PFS 2015 time points.



We use combinations of the multilevel latent covariate model (MLC; Lüdtke et al., 2008) and the multilevel latent growth model (MLGM; Muthén, 1997). The MLC framework decomposes the PFS indicator ($PFS = 1$, non- $PFS = 0$) into two parts: (1) the

Grantee-Level PFS measure, an estimated proportion of sub-counties in each grantee state that are participating in PFS (“PFSG”) and (2) the Sub-County PFS measure, capturing each sub-county’s difference between its specific PFS status and the grantee state proportion of PFS sub-counties (“PFSGC – PFSG”). A similar decomposition of growth over time happens on the outcome side, where the repeated measures for the poisoning outcomes ($Y_{Base} - Y_{4YF}$) are done at baseline through 4-year follow-up; the measures are decomposed into (1) grantee-level means across sub-counties (the “circled” Y s) and (2) the remaining variation in poisonings at the sub-county level. Growth parameters are linked to the repeated measures at the grantee-level ($I(Intercept)G$ and $S(lope)G$) and sub-county-level (IGC and SGC). The growth parameters are then predicted by the PFS indicators at each of the respective levels of aggregation to assess whether PFS has an impact on changes over time in poisoning rates.

A key feature of the wMLGM framework for the NPDS analysis is the disaggregation of predictors (i.e., PFS status) and outcomes into grantee-level and sub-county-level components. To demonstrate what this would look like, *Exhibit C3-3* revisits the example from Minnesota:

Exhibit C3-3. Example of the Combined Dataset to Show Disaggregation of PFS Status in the Poisoning Call Data Analysis Model

State	County	PFS_Status	Baseline Poisonings per 10,000 Youth	PFS_State	PFS_Sub-County	Poisonings_State	Poisonings_Sub-County
MN	Chippewa	0	9.35453695	0.167	-0.167	16.84	-7.48546305
MN	Chisago	0	8.475602373	0.167	-0.167	16.84	-8.364397627
MN	Clay	0	10.95690285	0.167	-0.167	16.84	-5.88309715
MN	Clay	1	1.472970982	0.167	0.833	16.84	-15.36702902
MN	Clearwater	0	13.1061599	0.167	-0.167	16.84	-3.7338401
MN	Cook	0	13.1061599	0.167	-0.167	16.84	-3.7338401
MN	Cottonwood	0	39.11342894	0.167	-0.167	16.84	22.27342894
MN	Crow Wing	0	14.59143969	0.167	-0.167	16.84	-2.24856031
MN	St. Louis	0	16.1317711	0.167	-0.167	16.84	-0.7082289
MN	Stearns	0	9.046089828	0.167	-0.167	16.84	-7.793910172
MN	Stearns	1	43.78889145	0.167	0.833	16.84	26.94889145
MN	Steele	0	22.94235733	0.167	-0.167	16.84	6.10235733

For the sake of the example, let's presume that these 12 sub-counties were the only sub-counties in the analysis for Minnesota. The PFS Status indicator in Column 3 is now decomposed into two components: the state-level average proportion of sub-counties participating in PFS, which would be 0.167 (the "PFS_State" variable in column 5; 2 sub-counties out of 12) and a new "PFS_Sub-County" indicator variable capturing the deviation from the mean PFS proportion. A similar process is shown for the poisoning outcome at baseline: the average number of poisonings across all sub-counties in Minnesota ("Poisonings_State") and the sub-counties' deviation score from the state average ("Poisonings_Sub-County"). This allows for separate-but-simultaneous modeling of state- and sub-county-level outcomes. Most multilevel modeling software (e.g., SAS Proc MIXED/GLIMMIX/NLMIXED, HLM) requires the data to be disaggregated before analysis, but Mplus version 8 software, used for the NPDS analyses, performs the disaggregation in the background of the analysis without the need for data preprocessing (Lüdtke et al., 2008; Muthén & Muthén, 1998-2017).

Poisoning Data Outcomes

Exhibit C3-4. Poisoning Call Outcomes Results

Outcome	County-Level Effects				Grantee-Level Effects			
	Est	SE	p	D	Est	SE	p	D
All prescription drugs	0.07	0.21	0.73	0.01	-0.48	0.42	0.26	-.20
Stimulants	0.11	0.07	0.11	0.16	-0.14	0.08	0.06	-1.10
Sedatives	-0.03	0.11	0.80	-0.01	-0.39	0.20	0.05	-0.74
Opiates	0.06	0.04	0.11	0.09	-0.15	0.09	0.09	-0.30
Antidepressants	-0.16	0.11	0.17	-0.09	0.10	0.26	0.71	0.16
Ethanol	-0.10	0.04	0.02	-0.14	-0.10	0.08	0.20	-0.62

Appendix D: PFS Intervention-Service Type Activities

D.1 Multimodal Media Campaign Categorization

This report defined multimodal media campaigns using a two-step process that first examined the total number of channels used and then the relative exposure by channel. The total number of media channels step looked at the following seven information dissemination channels: television advertising, radio advertising, print advertising, public service announcements, posters, brochures, and websites. Intervention activities using fewer than two channels were placed in the “other information dissemination” category.

For the intervention-service type activities associated with two or more channels, the categorization process next examined the exposure data (see ***Section D.3***) and excluded any channels with exposure that was less than half of the median for that channel (except for print advertising, where relatively lower exposure resulted in a decision to set the exclusion criterion at the median). Any intervention-service type activity that had distribution and sufficient exposure through two or more channels after this exclusion process was defined as a multimodal media campaign.

The categorization analysis repeated this calculation process in each reporting period. If an intervention-service type met the multimodal media campaign definition during any reporting period, it was categorized as a multimodal media campaign for all analyses across reporting periods.

D.2 CSAP Strategy Type Combinations

Exhibit D2-1. Percentage of Community Subrecipients Implementing Each of the Most Common CSAP Strategy Type Combinations

Strategy Type Combinations	Overall (N = 537)	PFS 2013 (n = 209)	PFS 2014 (n = 115)	PFS 2015 (New) (n = 165)	PFS II/ 2015 (n = 44)	PFS 2016 (n = 4)
Single CSAP Strategy Type						
Environmental strategies	7.8	3.3	2.6	18.2	2.3	25.0
Prevention education	6.9	4.3	5.2	10.9	4.5	50.0
Information dissemination	6.3	2.4	14.8	4.8	6.8	25.0
Multimodal media campaigns	4.1	4.8	4.3	3.0	4.5	0.0
Alternative activities	1.5	1.4	4.3	0.0	0.0	0.0
Two Combined CSAP Strategy Types						
Environmental strategies & information dissemination	8.4	1.4	7.8	17.0	11.4	0.0
Environmental strategies & multimodal media campaigns	7.8	6.2	11.3	7.9	6.8	0.0
Prevention education & multimodal media campaigns	5.8	11.0	2.6	2.4	2.3	0.0
Prevention education & information dissemination	3.5	2.4	4.3	4.8	2.3	0.0
Prevention education & environmental strategies	3.0	2.4	5.2	1.8	4.5	0.0
Alternative activities & multi-modal media campaigns	1.7	4.3	0.0	0.0	0.0	0.0
Prevention education & alternative activities	1.3	1.0	0.9	2.4	0.0	0.0
Alternative activities & information dissemination	1.3	1.9	0.0	1.8	0.0	0.0
Alternative activities & environmental strategies	1.1	1.4	0.0	1.8	0.0	0.0
Three Combined CSAP Strategy Types						
Prevention education & environmental strategies & multimodal media campaigns	6.9	6.2	10.4	5.5	6.8	0.0
Prevention education & environmental strategies & information dissemination	4.5	4.3	4.3	2.4	13.6	0.0
Prevention education & alternative activities & multi-modal media campaigns	1.7	3.8	0.9	0.0	0.0	0.0
Prevention education & multimodal media campaigns & information dissemination	1.7	1.9	0.9	1.8	2.3	0.0

Strategy Type Combinations	Overall (N = 537)	PFS 2013 (n = 209)	PFS 2014 (n = 115)	PFS 2015 (New) (n = 165)	PFS II/ 2015 (n = 44)	PFS 2016 (n = 4)
Prevention education & alternative activities & information dissemination	1.5	1.9	1.7	1.2	0.0	0.0
Environmental strategies & multimodal media campaigns & information dissemination	1.5	2.9	0.9	0.6	0.0	0.0
Prevention education & alternative activities & environmental strategies	1.3	0.5	1.7	2.4	0.0	0.0
Four Combined CSAP Strategy Types						
Prevention education & environmental strategies & multimodal media campaigns & information dissemination	4.3	8.6	0.0	2.4	2.3	0.0
Prevention education & alternative activities & environmental strategies & multimodal media campaigns	2.4	5.3	0.9	0.6	0.0	0.0
Prevention education & alternative activities & environmental strategies & information dissemination	2.4	1.9	7.0	0.0	2.3	0.0
Five Combined CSAP Strategy Types						
Prevention education & alternative activities & environmental strategies & multimodal media campaigns & information dissemination	2.6	5.7	1.7	0.0	0.0	0.0

Notes: This table includes only combinations endorsed by at least five community subrecipients (overall). Individual cohorts implemented other combinations not presented here because fewer than five community subrecipients endorsed the combination across cohorts. The analyses calculated percentages based on the number of community subrecipients reporting implemented PFS interventions. PFS = Partnerships for Success.

D.3 PEP-C EBPPP Categorization

The Program Evaluation for Prevention Contract (PEP-C) team reviewed all reported interventions and associated service types and used objective criteria to categorize them as evidence-based programs, policies, and practices (EBPPPs). Resources limitations meant that during the PEP-C EBPPP categorization process the team could not exhaustively search for evidence, extensively judge the quality of the evidence, or follow up with grantees or community subrecipients when they provided insufficient descriptions, so some EBPPPs were likely misclassified. Nevertheless, the process does provide an objective check against community subrecipient self-reports of EBPPP status.

The PEP-C EBPPP process categorized each reported intervention as evidence based or not for each of the following substances: alcohol, opioids (prescription drugs), and other substances.

“Other substances” referred to substances other than alcohol and opioids (e.g., tobacco, marijuana, steroids) or to evaluations that aggregated multiple substances (e.g., alcohol and tobacco) into a single variable, such that impact on any one substance could not be isolated. The process focused on alcohol and opioids (prescription drugs); thus, if an intervention had evidence of effectiveness for alcohol or opioids (prescription drugs), we didn’t typically try to locate evidence of impact on other substances.

The process began with a list of intervention names and service type names as selected by or provided by the community subrecipients to describe their intervention activities. The PEP-C team first checked the Pew Results First Database (<http://www.pewtrusts.org/en/multimedia/data-visualizations/2015/results-first-clearinghouse-database>) and SAMHSA’s National Registry of Evidence-based Programs and Practices (NREPP; <https://www.samhsa.gov/nrepp>) to see whether they included interventions that matched the community subrecipient intervention descriptors. If an intervention was not listed in either registry, the team followed up with Google and Google Scholar searches and reviewed the intervention website (if one existed) or any uncovered evaluation articles or reports for the intervention.

For an intervention to receive a categorization as evidence based, the PEP-C team needed to find at least one study showing statistically significant impact on intervening factors (e.g., substance-related knowledge, attitudes, or beliefs), consumption (e.g., alcohol use, prescription drug misuse), or consequences (e.g., DUI crashes, overdose deaths) for the specific substance in question. This categorization process did not consider study quality (e.g., a single-group pre-/posttest design counted the same as a randomized controlled trial) and did not consider replication or robustness (i.e., if one study found results and one didn’t, or if there were effects at an earlier time point but not a later one, the intervention was still coded as evidence based).

Opioid- or prescription drug-related interventions do not have as extensive a research base as alcohol prevention interventions. Therefore, the PEP-C team broadened the criteria for opioid- or prescription drug-related interventions to include industry best practices, recommendations and guidelines from Federal agencies such as the Centers for Disease Control and Prevention, and expert consensus documents (e.g., <https://www.jhsph.edu/events/2017/americas-opioid-epidemic/report/2017-JohnsHopkins-Opioid-digital.pdf>).

Interventions categorized as not evidence based for alcohol, opioids, or other substances met one or more of the following conditions:

- We could not find an evaluation of the intervention;
- We found one or more evaluations, but none tested impact on the specific substance in question;
- We found one or more evaluations that tested outcomes related to the substance in question, but did not find statistically significant results;
- The intervention did not target the specific substance in question (e.g., alcohol compliance checks are characterized as not evidence based for opioids); or
- For opioids or prescription drugs, the intervention did not meet the criteria of industry best practices.

Note that an intervention categorized as not evidence based through this process might still be evidence based for other substances or for outcomes beyond the purview of Partnerships for Success (e.g., mental health, delinquency, positive youth development). Also, about 51% of the intervention descriptions in the Community Level Instrument–Revised did not provide enough information to understand what exactly the community subrecipient implemented (e.g., “Media Campaign,” “Underage drinking program”), so the PEP-C team was unable to look up information about its effectiveness.

D.4 Community Exposure

Analyses in this report defined community exposure using a multistep process. It first calculated exposure for each intervention activity for each year it was implemented, then aggregated these activity exposure scores across years. It then weighted the activity exposure scores by CSAP strategy type, aggregated the weighted scores to create a community-level exposure score, and standardized those scores to create an exposure index score for each subrecipient community.

Each CSAP strategy type used different exposure items (dosage and numbers reached/served), so exposure was defined within CSAP strategy type relative to other intervention activities with the same CSAP strategy type (see **Exhibit D4-1** for exposure formulas for each CSAP strategy type). Responses to all items were put into quartiles, low (1) to high (4), to reduce the influence of skewed data on some items (e.g., a reach value of 1 million) and to place scores for varied dosage and reach/served items on a relative scale for comparison. Then the quartiles were used in the calculations indicated in Exhibit D4-1 to produce the exposure score for each intervention activity for each year. These annual exposure scores were then averaged across years of implementation to get one annualized activity exposure score for each intervention activity implemented by a community subrecipient.

Next, a weight was applied to each annualized activity exposure score on the basis of the average number reach/served by CSAP strategy type (i.e., CSAP strategy types with higher average reach across all intervention activities received a higher weight). Weighted annualized activity exposure scores were then added across all intervention activities implemented by a community subrecipient and the totals then standardized on a 10-point scale (1 = low to 10 = high) to be used as predictors in community outcomes analyses.

Exhibit D4-1. Exposure Index Formulas by CSAP Strategy Type

CSAP Strategy Type	Exposure Formula
Prevention education	# of sessions * Average length of sessions * Proportion of targeted population served
Alternative activities	(Total sessions * Proportion of population served) + (Total events * Proportion of targeted population reached)
Problem identification and referral	Proportion of targeted population served
Environmental strategies	Environmental influencer items (# of training sessions * Average length of sessions * # of participants in session * Proportion of targeted population reached) + Policy item (policy implemented: yes/no * Proportion of targeted population reached) + Enforcement items (# of compliance checks * Proportion of targeted population reached) + (# of sobriety checks * Proportion of targeted population reached) + (# of law enforcement agencies engaged * Proportion of targeted population reached)
Information dissemination	(# of TV ads aired + # of radio ads aired + # of print ads run + # of public service announcements broadcast + # of posters distributed + # of brochures distributed + # of website visits) * Proportion of targeted population reached

D.5 Procedure and Results for Latent Class Analysis

Latent class analyses (LCAs) were conducted using the procedures recommended by Lanza and colleagues (2007), using Mplus (version 8, Muthén & Muthén, 1998-2017). The analyses enable us to identify unobservable subgroups of communities that are the most similar to each other with respect to indicators of interest (e.g., interventions implemented, proportion of EBPPP, implementation lag) within an observed population. The ideal number of classes was identified using an iterative process in which we compared model fit criteria for a two-class solution, followed by three-, four-, five-, and six-class solutions. Model fit criteria included the Log Likelihood, Akaike Information Criteria (AIC; Akaike, 1974), and the adjusted Bayesian Information Criteria (aBIC; Schwarz, 1978), where smaller values reflected better fit. In addition, we examined entropy values, which represent the percentage of the sample accurately classified

into the “correct” profile. Finally, model convergence and practical utility of the identified profiles were also considered when determining the best solution for the data.

Once the most appropriate solution was identified, we examined item probabilities to ensure that classes were distinctly differentiated, items were combined meaningfully, and the sample was reasonably distributed across the classes. Next, posterior probabilities and class membership probabilities were used to assign communities to the “most likely” class. This variable was used in subsequent outcomes analyses (Clogg, 1955).

Exhibit D5-1. Community Subrecipients Addressed UAD Using Six Different Implementation Approaches (With Item Response Probabilities)

Variables	Delayed Environmental Strategies	Alternative Activities	Media Campaigns	Delayed, Evidence-Based, Non-specific	High Implementers	Delayed, Evidence-Based High Implementers
Proportion of communities in each group	7.2%	8.3%	12.5%	13.2%	18.5%	40.4%
Implementation Characteristics						
Prevention education	0.00	0.00	0.46	0.47	0.65	1.00
Alternative activities	0.10	1.00	0.00	0.11	0.64	0.26
Problem ID & referral	0.11	0.00	0.00	0.00	0.01	0.08
Environmental strategy	1.00	0.00	0.00	0.25	0.57	0.60
Multimodal media campaign	1.00	0.40	1.00	0.00	0.28	0.65
Other information dissemination	0.29	0.15	0.12	0.46	0.92	0.25
3+ interventions implemented	0.89	0.21	0.00	0.00	1.00	1.00
50%+ of interventions were EBPPPs	0.34	0.00	0.24	0.53	0.03	0.53
90+ days of implementation lag	0.73	0.19	0.30	0.63	0.63	0.69

Exhibit D5-2. Community Subrecipients Addressed PDM Using Five Different Implementation Approaches (With Item Response Probabilities)

Variables	Evidence-Based Prevention Education	Delayed Information Dissemination	Delayed, Evidence-Based Environmental Strategies	Media Campaigns	High Implementers
Proportion of communities in each group	9.7%	11.0%	15.4%	17.6%	46.3%
Implementation Characteristics					
Prevention education	1.00	0.00	0.00	0.22	0.90
Alternative activities	0.06	0.04	0.07	0.28	0.54
Problem ID & referral	0.07	0.00	0.00	0.00	0.04
Environmental strategy	0.17	0.00	0.92	0.03	0.70
Multimodal media campaign	0.00	0.14	0.53	0.75	0.65
Other information dissemination	0.05	1.00	0.21	0.00	0.61
3+ interventions implemented	0.11	0.00	0.28	0.00	1.00
50%+ of interventions were EBPPPs	0.65	0.18	0.81	0.00	0.28
90+ days of implementation lag	0.58	0.85	0.80	0.27	0.49

Appendix E: Effects of Grantee Infrastructure on Grantee Outcomes

Exhibit E1. Relationship Between Integration of the Grantee-Level Prevention System and Grantee NSDUH Outcomes

Grantee Outcome	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	0.009052	0.04469	201	0.2	0.8397	0.01
30-day alcohol (age 12–20)	-0.05524	0.05677	196	-0.97	0.3317	-0.04
30-day alcohol (age 18–25)	-0.05401	0.06599	201	-0.82	0.4141	-0.02
30-day binge (age 12–17)	0.02886	0.03886	160	0.74	0.4589	0.05
30-day binge (age 12–20)	-0.03989	0.05173	156	-0.77	0.4418	-0.04
30-day binge (age 18–25)	-0.1193	0.06053	158	-1.97	0.0505	-0.05
30-day psychotherapeutics (12–17)	-0.00826	0.02198	159	-0.38	0.7077	-0.03
30-day psychotherapeutics (18–25)	-0.01414	0.03698	160	-0.38	0.7026	-0.03
12-month psychotherapeutics (12–17)	-0.02724	0.04015	160	-0.68	0.4985	-0.05
12-month psychotherapeutics (18–25)	-0.1268	0.05749	160	-2.21	0.0288	-0.13
30-day analgesics (12–17)	-0.00733	0.01911	158	-0.38	0.7017	-0.03
30-day analgesics (18–25)	-0.01574	0.02827	160	-0.56	0.5784	-0.03
12-month analgesics (12–17)	-0.01796	0.03335	160	-0.54	0.591	-0.04
12-month analgesics (18–25)	-0.05132	0.04743	160	-1.08	0.2808	-0.06
Perceived risk of alcohol use (12–17)	0.05315	0.05207	160	1.02	0.309	0.05
Perceived risk of alcohol use (18–25)	0.02796	0.07336	160	0.38	0.7036	0.02
Disapproval of same age peers (12–17)	-0.05042	0.044	201	-1.15	0.2532	-0.08
Parental disapproval (12–17)	-0.05493	0.04192	201	-1.31	0.1916	-0.08
Friends disapproval (12–17)	-0.01328	0.05695	201	-0.23	0.8158	-0.01

Exhibit E2. Relationship Between Grantee Data Capacity and Grantee NSDUH Outcomes

Grantee Outcome	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	0.02546	0.18	201	0.14	0.8876	0.03
30-day alcohol (age 12–20)	-0.1705	0.233	196	-0.73	0.4651	-0.12
30-day alcohol (age 18–25)	-0.04279	0.2658	201	-0.16	0.8722	-0.02
30-day binge (age 12–17)	0.07066	0.1576	160	0.45	0.6546	0.12
30-day binge (age 12–20)	-0.191	0.2129	156	-0.9	0.3709	-0.17
30-day binge (age 18–25)	-0.3332	0.2455	158	-1.36	0.1767	-0.15
30-day psychotherapeutics (12–17)	-0.08073	0.08871	159	-0.91	0.3642	-0.29
30-day psychotherapeutics (18–25)	-0.3516	0.1467	160	-2.4	0.0177	-0.63
12-month psychotherapeutics (12–17)	-0.1368	0.1629	160	-0.84	0.4021	-0.26
12-month psychotherapeutics (18–25)	-0.5966	0.2331	160	-2.56	0.0114	-0.63
30-day analgesics (12–17)	-0.02464	0.07718	158	-0.32	0.7499	-0.1
30-day analgesics (18–25)	-0.3055	0.1146	160	-2.66	0.0085	-0.64
12-month analgesics (12–17)	-0.1483	0.1353	160	-1.1	0.2748	-0.3
12-month analgesics (18–25)	-0.4815	0.1913	160	-2.52	0.0128	-0.6
Perceived risk of alcohol use (12–17)	-0.6555	0.2112	160	-3.1	0.0023	-0.65
Perceived risk of alcohol use (18–25)	0.3425	0.2975	160	1.15	0.2514	0.23
Disapproval of same age peers (12–17)	-0.276	0.1771	201	-1.56	0.1207	-0.44
Parental disapproval (12–17)	-0.1107	0.1703	201	-0.65	0.5167	-0.16
Friends disapproval (12–17)	0.3664	0.2293	201	1.6	0.1116	0.29

Exhibit E3. Relationship Between Grantee Workforce Development Mechanisms and Grantee NSDUH Outcomes

Grantee Outcomes	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	-0.02112	0.188	201	-0.11	0.9106	-0.02
30-day alcohol (age 12–20)	0.03917	0.2392	196	0.16	0.8701	0.03
30-day alcohol (age 18–25)	0.08314	0.2775	201	0.3	0.7648	0.03
30-day binge (age 12–17)	-0.08594	0.1636	160	-0.53	0.6001	-0.14
30-day binge (age 12–20)	-0.04812	0.2181	156	-0.22	0.8257	-0.04
30-day binge (age 18–25)	-0.166	0.2544	158	-0.65	0.5149	-0.07
30-day psychotherapeutics (12–17)	-0.03626	0.09509	159	-0.38	0.7035	-0.13
30-day psychotherapeutics (18–25)	0.007737	0.1556	160	0.05	0.9604	0.01
12-month psychotherapeutics (12–17)	-0.2914	0.1637	160	-1.78	0.0769	-0.56
12-month psychotherapeutics (18–25)	-0.5153	0.2419	160	-2.13	0.0347	-0.54
30-day analgesics (12–17)	-0.1055	0.08276	158	-1.27	0.2044	-0.42
30-day analgesics (18–25)	-0.1151	0.119	160	-0.97	0.3349	-0.24
12-month analgesics (12–17)	-0.2776	0.1404	160	-1.98	0.0498	-0.57
12-month analgesics (18–25)	-0.3717	0.1985	160	-1.87	0.063	-0.46
Perceived risk of alcohol use (12–17)	0.8633	0.2192	160	3.94	0.0001	0.86
Perceived risk of alcohol use (18–25)	0.2879	0.3087	160	0.93	0.3525	0.19
Disapproval of same age peers (12–17)	-0.276	0.1849	201	-1.49	0.1372	-0.44
Parental disapproval (12–17)	-0.4019	0.1724	201	-2.33	0.0207	-0.58
Friends disapproval (12–17)	-0.05134	0.2395	201	-0.21	0.8305	-0.04

Exhibit E4. Relationship Between Grantee Sustainability Efforts and Grantee NSDUH Outcomes

Grantee Outcomes	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	-0.3906	0.1817	200	-2.15	0.0328	-0.44
30-day alcohol (age 12–20)	-0.08289	0.2321	195	-0.36	0.7214	-0.06
30-day alcohol (age 18–25)	0.08468	0.2683	200	0.32	0.7526	0.03
30-day binge (age 12–17)	-0.184	0.1595	160	-1.15	0.2504	-0.31
30-day binge (age 12–20)	-0.06737	0.2135	156	-0.32	0.7528	-0.06
30-day binge (age 18–25)	-0.179	0.2482	158	-0.72	0.4718	-0.08
30-day psychotherapeutics (12–17)	-0.144	0.09156	159	-1.57	0.1177	-0.52
30-day psychotherapeutics (18–25)	-0.1584	0.1517	160	-1.04	0.2979	-0.28
12-month psychotherapeutics (12–17)	-0.3898	0.1596	160	-2.44	0.0157	-0.75
12-month psychotherapeutics (18–25)	-0.5382	0.2358	160	-2.28	0.0238	-0.57
30-day analgesics (12–17)	-0.1282	0.08199	158	-1.56	0.12	-0.51
30-day analgesics (18–25)	-0.1915	0.1152	160	-1.66	0.0986	-0.4
12-month analgesics (12–17)	-0.3089	0.137	160	-2.26	0.0254	-0.63
12-month analgesics (18–25)	-0.3411	0.1936	160	-1.76	0.0799	-0.42
Perceived risk of alcohol use (12–17)	0.06333	0.2138	160	0.3	0.7674	0.06
Perceived risk of alcohol use (18–25)	-0.3467	0.3009	160	-1.15	0.251	-0.23
Disapproval of same age peers (12–17)	0.06962	0.1786	200	0.39	0.6972	0.11
Parental disapproval (12–17)	0.08336	0.1719	200	0.49	0.6282	0.12
Friends disapproval (12–17)	0.2124	0.2314	200	0.92	0.3599	0.17

Exhibit E5. Relationship Between Grantee EOW Meetings and Grantee NSDUH Outcomes

Grantee Outcomes	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	-0.1044	0.04477	201	-2.33	0.0207	-.36
30-day alcohol (age 12–20)	-0.03518	0.05806	196	-0.61	0.5452	-.06
30-day alcohol (age 18–25)	0.2084	0.06611	201	3.15	0.0019	.27
30-day binge (age 12–17)	-0.03604	0.03826	160	-0.94	0.3476	-.20
30-day binge (age 12–20)	-0.01357	0.05267	156	-0.26	0.7970	-.10
30-day binge (age 18–25)	0.009937	0.06550	158	0.15	0.8796	-.05
30-day psychotherapeutics (12–17)	-0.01400	0.02180	159	-0.64	0.5217	-.15
30-day psychotherapeutics (18–25)	0.05991	0.03693	160	1.62	0.1068	.33
12-month psychotherapeutics (12–17)	-0.09930	0.03889	160	-2.55	0.0116	-.74
12-month psychotherapeutics (18–25)	0.1416	0.05743	160	2.47	0.0148	-.51
30-day analgesics (12–17)	-0.02035	0.01897	158	-1.07	0.2851	-.23
30-day analgesics (18–25)	-0.01629	0.02825	160	-0.58	0.5650	-.11
12-month analgesics (12–17)	-0.07722	0.03337	160	-2.31	0.0219	-.52
12-month analgesics (18–25)	0.04014	0.04714	160	0.85	0.3958	.10
Perceived risk of alcohol use (12–17)	0.1270	0.05207	160	2.44	0.0158	.45
Perceived risk of alcohol use (18–25)	-0.1456	0.07329	160	-1.99	0.0486	-.36
Disapproval of same age peers (12–17)	0.07084	0.04399	201	1.61	0.1089	.37
Parental disapproval (12–17)	0.07133	0.04104	201	1.74	0.0838	.37
Friends disapproval (12–17)	0.1773	0.05701	201	3.11	0.0021	.48

Exhibit E6. Relationship Between Grantee EBPW Meetings and Grantee NSDUH Outcomes

Grantee Outcomes	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	0.1669	0.09239	201	1.81	0.0723	.19
30-day alcohol (age 12–20)	-0.1839	0.1182	196	-1.55	0.1216	-.13
30-day alcohol (age 18–25)	-0.3693	0.1364	201	-2.71	0.0074	-.14
30-day binge (age 12–17)	0.02421	0.08042	160	0.30	0.7638	.04
30-day binge (age 12–20)	-0.2112	0.1078	156	-1.96	0.0520	-.20
30-day binge (age 18–25)	-0.4814	0.1258	158	-3.83	0.0002	-.22
30-day psychotherapeutics (12–17)	0.03921	0.04486	159	0.87	0.3834	.14
30-day psychotherapeutics (18–25)	-0.02804	0.07651	160	-0.37	0.7145	-.05
12-month psychotherapeutics (12–17)	0.1166	0.08309	160	1.40	0.1625	.23
12-month psychotherapeutics (18–25)	-0.2498	0.1190	160	-2.10	0.0374	-.27
30-day analgesics (12–17)	0.000682	0.03920	158	0.02	0.9862	.003
30-day analgesics (18–25)	-0.00256	0.05850	160	-0.04	0.9651	-.01
12-month analgesics (12–17)	0.07816	0.06901	160	1.13	0.2591	.16
12-month analgesics (18–25)	-0.01782	0.09814	160	-0.18	0.8562	-.02
Perceived risk of alcohol use (12–17)	0.1103	0.1097	160	1.01	0.3162	.11
Perceived risk of alcohol use (18–25)	0.3073	0.1518	160	2.02	0.0446	.21
Disapproval of same age peers (12–17)	-0.04458	0.09151	201	-0.49	0.6267	-.07
Parental disapproval (12–17)	-0.07447	0.08745	201	-0.85	0.3955	-.11
Friends disapproval (12–17)	-0.1511	0.1177	201	-1.28	0.2009	-.12

Exhibit E7. Relationship Between Grantee EOW Membership and Grantee NSDUH Outcomes

Grantee Outcomes	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	0.01712	0.01196	201	1.43	0.1539	.27
30-day alcohol (age 12–20)	0.01742	0.01541	196	1.13	0.2597	.14
30-day alcohol (age 18–25)	0.01889	0.01766	201	1.07	0.2861	.11
30-day binge (age 12–17)	0.01173	0.01033	160	1.14	0.2579	.28
30-day binge (age 12–20)	-0.00353	0.01394	156	-0.25	0.8007	-.05
30-day binge (age 18–25)	-0.04836	0.01607	158	-3.01	0.0031	-.27
30-day psychotherapeutics (12–17)	-0.00704	0.005848	159	-1.20	0.2305	-.36
30-day psychotherapeutics (18–25)	-0.01064	0.009821	160	-1.08	0.2803	-.26
12-month psychotherapeutics (12–17)	-0.03288	0.01034	160	-3.18	0.0018	-.88
12-month psychotherapeutics (18–25)	-0.02139	0.01527	160	-1.40	0.1633	-.29
30-day analgesics (12–17)	-0.00595	0.005083	158	-1.17	0.2434	-.33
30-day analgesics (18–25)	-0.01426	0.007462	160	-1.91	0.0578	-.42
12-month analgesics (12–17)	-0.02794	0.008868	160	-3.15	0.0019	-.76
12-month analgesics (18–25)	-0.01887	0.01253	160	-1.51	0.1343	-.31
Perceived risk of alcohol use (12–17)	0.01643	0.01384	160	1.19	0.2370	.15
Perceived risk of alcohol use (18–25)	-0.00330	0.01949	160	-0.17	0.8659	-.03
Disapproval of same age peers (12–17)	-0.00271	0.01184	201	-0.23	0.8191	-.04
Parental disapproval (12–17)	0.05397	0.01049	201	5.14	<.0001	1.05
Friends disapproval (12–17)	0.03253	0.01523	201	2.14	0.0339	.25

Exhibit E8. Relationship Between Grantee EBPW Membership and Grantee NSDUH Outcomes

Grantee Outcomes	Estimate	StdErr	DF	tValue	Probt	Cohen's d
30-day alcohol (age 12–17)	0.03835	0.02933	201	1.31	0.1924	.24
30-day alcohol (age 12–20)	-0.03312	0.03750	196	-0.88	0.3782	-.17
30-day alcohol (age 18–25)	-0.08884	0.04330	201	-2.05	0.0415	-.22
30-day binge (age 12–17)	0.002057	0.02531	160	0.08	0.9353	.01
30-day binge (age 12–20)	-0.05777	0.03391	156	-1.70	0.0904	-.31
30-day binge (age 18–25)	-0.1719	0.04036	158	-4.26	<.0001	-.52
30-day psychotherapeutics (12–17)	0.01580	0.01419	159	1.11	0.2673	.25
30-day psychotherapeutics (18–25)	0.000019	0.02410	160	0.00	0.9994	.01
12-month psychotherapeutics (12–17)	0.03428	0.02615	160	1.31	0.1918	.4
12-month psychotherapeutics (18–25)	-0.03320	0.03746	160	-0.89	0.3768	.20
30-day analgesics (12–17)	0.002513	0.01242	158	0.20	0.8399	.03
30-day analgesics (18–25)	0.000950	0.01842	160	0.05	0.9589	.02
12-month analgesics (12–17)	0.03534	0.02172	160	1.63	0.1056	.4
12-month analgesics (18–25)	0.02355	0.03074	160	0.77	0.4447	.16
Perceived risk of alcohol use (12–17)	0.05767	0.03454	160	1.67	0.0969	.45
Perceived risk of alcohol use (18–25)	0.01741	0.04780	160	0.36	0.7161	.08
Disapproval of same age peers (12–17)	0.01129	0.02905	201	0.39	0.6981	.08
Parental disapproval (12–17)	-0.02406	0.02700	201	-0.89	0.3740	-.17
Friends disapproval (12–17)	-0.05492	0.03738	201	-1.47	0.1433	-.31

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