Preventing Prescription Drug Misuse and Abuse

SAMHSA’s Response and Preliminary Findings from CSAP’s Partnership for Success
Acknowledgements

- Center for Substance Abuse Prevention (CSAP)
- PEP-C Evaluation Team
- PFS Grantees
- PFS Sub-recipient Communities
Presentation Objectives

– Describe Prescription Drug Misuse and Abuse among Youth and Young Adults
– Describe CSAP’s Partnerships for Success (PFS) program and RTI’s Evaluation Design
– Describe Grantee and their Communities’ Responses
– Present Preliminary Findings from Partnerships for Success Analysis
– Present an example of prevention in primary care setting
– Brainstorm to identify novel approaches to reduce prescription drug abuse and misuse
SPF-PFS Grant Program

- Eligibility: States, tribal organizations (beginning 2014), and jurisdictions who were previous SPF State Incentive Grant (SIG) grantees
- Award amounts to grantees are tiered, depending upon underage drinking and prescription drug misuse prevalence rates in targeted populations
- Grantees in turn fund high-need, low-capacity community subrecipients
- Cohorts vary in terms of funding amount and years funded
Strategic Prevention Framework (SPF) Partnerships for Success (PFS)

- PFS priorities
  - Prevent the onset and reduce the progression of substance abuse, prioritizing underage drinking among persons age 12 – 20, prescription drug misuse and abuse among persons age 12 – 25, or both
  - Reduce substance abuse-related problems
  - Strengthen prevention capacity and infrastructure at the State and community levels
  - Leverage, redirect, and align statewide funding streams and resources for prevention
## PFS Grantee Cohorts & Community Subrecipients

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Grantees</th>
<th>Funded Community Subrecipients</th>
<th>Length of Grant</th>
<th>Start Date – End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFS II</td>
<td>15*</td>
<td>141</td>
<td>3 years</td>
<td>Oct. 2012 – Sept. 2015</td>
</tr>
<tr>
<td>PFS 2013</td>
<td>16**</td>
<td>230</td>
<td>5 years</td>
<td>Oct. 2013 – Sept. 2018</td>
</tr>
<tr>
<td>PFS 2015</td>
<td>32****</td>
<td>~250</td>
<td>5 years</td>
<td>Oct. 2015 – Sept. 2020</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>69****</td>
<td>~641</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Includes 14 States and 1 territory.
** Includes 14 States and 2 territories.
*** Includes 12 States, 3 territories, 5 tribal organizations, and the District of Columbia.
**** Includes 21 States, 3 territories, and 8 tribal organizations; all 15 PFS II grantees received funding as PFS 2015 grantees, so this total counts those grantees and subrecipients only once.
Geographic Distribution of PFS Grantees

Pacific Jurisdictions
- American Samoa 1
- Guam 14
- Palau 1
- Federated States of Micronesia 4
- Republic of Marshall Islands 3
- Northern Mariana Islands —

Other Jurisdictions
- Puerto Rico
- U.S. Virgin Islands

Legend:
- PFS 2013
- PFS 2014
- PFS 2015
- PFS II/2015

# next to grantee is # of subrecipients
PFS Cross-Site Evaluation Logic Model

**Inputs**
- **PFS funding**
- **CAPT TTA**
- **Grantee**
  - Grantee structure
  - Advisory committee
  - SEOW
  - EBP workgroup
- **Subrecipient**
  - Community need
  - Capacity
  - Infrastructure (coalition and implementers)

**Outputs**
- **Activities**
  - **Grantee**
    - Leveraged funding
    - Selection of high-need/low-capacity communities
    - # of TTA activities; improvements in TTA
  - **Subrecipient**
    - Leveraged funding
    - Improved capacity/infrastructure
    - # EBPPPs implemented
    - Intervention characteristics (type, costs, targets)
    - EBPP implementation factors (dosage, fidelity, barriers)
- **Participants**
  - # and type of subrecipient communities selected
  - TTA subrecipient # served
  - # of collaborators/implementation partners
  - # reached by IOM category and demographic/geographic factors

**Outcomes — Impact**
- **Proximal Outcomes**
  - Parental/peer disapproval
  - Perceived risk/harm of use
  - Family communication
- **Distal Outcomes**
  - 30-day use (alcohol and prescription drug misuse)
  - Binge drinking
  - Alcohol and prescription drug misuse-related crashes and injuries
  - Alcohol and prescription drug misuse-related crime
  - Alcohol and prescription drug misuse-related ER visits
  - Prescription drug overdose
  - Cost benefits
## PFS Cross-Site Evaluation Questions

<table>
<thead>
<tr>
<th>EQ1</th>
<th>Was the implementation of PFS programs associated with a reduction in underage drinking and/or prescription drug misuse and abuse?</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ2</td>
<td>Did variability in the total level of funding from all sources relate to outcomes? Did variability in the total level of PFS funding relate to outcomes, above and beyond other funding available to communities?</td>
</tr>
<tr>
<td>EQ3</td>
<td>What intervention type, combinations of interventions, and dosages of interventions were related to outcomes at the grantee level? What intervention type, combinations of interventions, and dosages of interventions were related to outcomes at the community level?</td>
</tr>
</tbody>
</table>
PFS Cross-Site Evaluation Questions

EQ4 Were some types and combinations of interventions within communities more cost effective than others?

EQ5 How does variability in factors (strategy selection and implementation, infrastructure, geography, demography, subrecipient selection, Training/TA, barriers to implementation) relate to outcomes across funded communities?
### Key Analytic Features

#### Innovative Analytic Approaches

<table>
<thead>
<tr>
<th></th>
<th>EQ 1</th>
<th>EQ 2</th>
<th>EQ 3</th>
<th>EQ 4</th>
<th>EQ 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Harmonization</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Qualitative Comparative Analysis (QCA)</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Cost Effectiveness Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

- Identification of epidemiological data
- Identification of matched comparison communities
Cross-Site Requirements at Grantee Level, Cross-Site Requirements at Community Level, Federal Reporting Requirements

DATA COLLECTION
Cross-Site Requirements: Grantee-Level Data

- **Grantee-Level Process Data**
  1. Grantee Level Instrument (GLI)
  2. Project Director (PD) Interview
  3. Quarterly Progress Reports

- **Grantee-Level Outcome Data**
  1. PFS Selected Grantee-Level Outcomes
Cross-Site Requirements: Community-Level Data

- **Community-Level Process Data**
  - Revised Community Level Instrument (CLI-R)
  - Submitted by subrecipients

- **Community-Level Outcome Data**
  - PFS Selected Community-Level Outcomes
  - Submitted by grantee for each community
Revised Community Level Instrument

CLI-R Topic Areas

• Subrecipient structure and capacity building
• Data availability and planning
• Stakeholders and partners
• Intervention implementation (incl. # reached, adaptations)
• Barriers and sustainability
Community-Level Outcome Data

- For each community, the **grantee** is required to submit relevant
  - Intervening variables
  - Consumption data
  - Consequence data
WHAT ARE COMMUNITIES TARGETING AND DOING?
## Priorities Across PFS Grantees

<table>
<thead>
<tr>
<th>PFS Cohorts</th>
<th>Underage Drinking</th>
<th>Prescription Drugs</th>
<th>Marijuana</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFS II</td>
<td>11</td>
<td>13</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>PFS 2013</td>
<td>15</td>
<td>12</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>PFS 2014</td>
<td>18</td>
<td>10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>PFS 2015</td>
<td>22</td>
<td>20</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong>*</td>
<td><strong>55</strong></td>
<td><strong>42</strong></td>
<td><strong>12</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

* Excludes PFS II, as they are also included in PFS 2015 counts.
# Strategies Targeting 12-17

<table>
<thead>
<tr>
<th>CSAP Strategy Type</th>
<th>Evidence Based?</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>I Don't Know</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Alternative activities</td>
<td>16</td>
<td>11</td>
<td>12</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Community-based processes</td>
<td>33</td>
<td>16</td>
<td>21</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>Environmental strategy</td>
<td>58</td>
<td>38</td>
<td>26</td>
<td></td>
<td>122</td>
</tr>
<tr>
<td>Information dissemination (and other communication activities)</td>
<td>81</td>
<td>111</td>
<td>48</td>
<td></td>
<td>240</td>
</tr>
<tr>
<td>Prevention education</td>
<td>68</td>
<td>29</td>
<td>16</td>
<td></td>
<td>113</td>
</tr>
<tr>
<td>Problem identification and referral</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>263</td>
<td>206</td>
<td>124</td>
<td></td>
<td>593</td>
</tr>
</tbody>
</table>
Environmental Strategies

- **Environmental strategies** were second-most common (n = 122; 20.6% of all Rx interventions)
  - Drop box-related activities were the most common intervention-service type (n = 56).
  - Training/educating environmental influencers (e.g., medical professionals, educators, law enforcement) (n = 26)
    - Specific interventions: Do No Harm Grand Rounds, Prescriber/Physician Education,
  - Establishing/reviewing/changing policies in schools, colleges, workplaces, and other organizations (n = 9)
- 47.5% of environmental strategies were described as evidence-based
Problem Identification and Referral included only 9 interventions (1.5%), 7 of which were evidence-based.

d:

- Student assistance programs (n = 4)
  - E.g., Project SUCCESS; PRIME for Life
- Other prevention assessment and referral programs (n = 3)
  - E.g., Screening, Brief Intervention, and Referral to Treatment (SBIRT); Brief Alcohol Screening and Intervention for College Students (BASICS)
- Online screening and referral (n = 1)
  - E.g., Electronic Screening and Brief Interventions (e-SBI)
- Youth diversion/early intervention program (n = 1)
  - E.g., Teen Court
## Strategies Targeting 18-25

<table>
<thead>
<tr>
<th>CSAP Strategy Type</th>
<th>Evidence Based?</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>I Don't Know</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative activities</td>
<td>12</td>
<td>7</td>
<td>7</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Community-based processes</td>
<td>28</td>
<td>18</td>
<td>20</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Environmental strategy</td>
<td>57</td>
<td>40</td>
<td>24</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Information dissemination (and other communication activities)</td>
<td>68</td>
<td>105</td>
<td>41</td>
<td>214</td>
<td></td>
</tr>
<tr>
<td>Prevention education</td>
<td>30</td>
<td>18</td>
<td>9</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Problem identification and referral</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>202</td>
<td>189</td>
<td>102</td>
<td>493</td>
<td></td>
</tr>
</tbody>
</table>
Using Archival Data to Examine Impact

The National Poisoning Data Center
National Poisoning Data Systems (NPDS)

- Zip Code-Level Poisoning Rates in PFS Grantee States
  - Poisoning counts in each zip code from NPDS across four drug classes + ethanol
    - Counts of youth and young adults aged 12-25 for sedatives, stimulants, opiates and anti-depressants
    - Counts of youth and young adults aged 12-20 for ethanol poisonings
      - Individual Cases account for poisoning incidents involving multiple substances
Data Sources

- American Community Survey 5-year population estimates
  - Estimated number of youth ages 12-24 in each zip code

- US Postal Service Database
  - Linking Poisonings in each zip codes to each county
    - Necessary because some grantees implemented PFS in entire counties while others implemented within specific zip codes with counties

- MRT Quarterly Report Data
  - Identify zip codes where PFS was implemented
Steps

- Merge NPDS, ACS, USPS and MRT data
- For each zip code within a PFS grantee State (across PFS II, PFS 2013, PFS 2014):
  - Sum all poisoning incidents within each zip code
  - Sum the population counts across zip codes within each county (denominator)
- Estimated Rate per 10,000 youth = (counts/denominator) * 10,000
National and Louisiana Poisoning Trends - Overall

National and Louisiana Poisoning Rate Trends - Any Poisoning

Average Poisonings per 10,000 persons

Fiscal Year

FY 2012 | FY 2013 | FY 2014 | FY 2015

National Rates | Louisiana Rates
National and Louisiana Poisoning Trends – Stimulants

National and Louisiana Poisoning Rate Trends - Stimulants

Average Poisonings per 10,000 persons

Fiscal Year

FY 2012
FY 2013
FY 2014
FY 2015

National Rates
Louisiana Rates
National and Louisiana Poisoning Trends - Sedatives

[Graph showing the trend of national and Louisiana poisoning rates by fiscal year (FY) from FY 2012 to FY 2015. The graph indicates that the sedatives poisoning rate is higher in Louisiana compared to the national rate for FY 2013 and FY 2014, with a decrease in FY 2015.]
National and Louisiana Poisoning Trends - Opiates

[Graph showing trends in poisoning rates from FY 2012 to FY 2015 for national and Louisiana rates. The graph indicates a decrease in poisoning rates over time for both national and Louisiana rates.]
National and Louisiana Poisoning Trends – Anti-Depressants

National and Louisiana Poisoning Rate Trends - Anti-Depressants

Average Poisoning Rates per 10,000 persons

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>National Rates</th>
<th>Louisiana Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2015</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
National and Louisiana Poisoning Trends – Ethanol

![Line graph showing national and Louisiana poisoning rate trends for ethanol over fiscal years 2012 to 2015. The graph indicates a slight increase in poisoning rates from FY 2012 to FY 2014, followed by a slight decrease in FY 2015. National rates are shown in blue, and Louisiana rates are shown in orange. The y-axis represents average poisoning rates per 10,000 persons, ranging from 0 to 2.5. The x-axis represents fiscal years 2012 to 2015.]}
Summary Findings

- LA rates for all poisoning types are generally lower than the National averages for zip code-level poisoning rates
  - Poisonings from stimulants are an exception
    - Rising over time
    - Greater than four times the National average by Fiscal Year 2015
Preliminary Findings

Grantee-Level Outcomes: Comparing PFS II to PFS 2013/2014 Cohorts via Meta-Regression
EQ1: Is the implementation of PFS programs associated with a reduction in underage drinking and/or prescription drug misuse and abuse?

EQ2: Did PFS funding relate to variability in outcomes, above and beyond other funding available to communities? Did total level of resources relate to outcomes?
Analytic Approach:

- Data from sub-recipients nested within grantees
  - Multi-level Latent Growth Models

- Nonrandomized comparison communities within grantees
  - Propensity Score Weighting
Analytic Approach: Primary Analysis Challenges

- Nonrandom selection of intervention types that occurred in combination
  - Propensity Score Weighting
  - Latent Class Analysis

- Cross-grantee variation in measurement of underage drinking and prescription drug use
  - Integrative Data Analysis/Data (Item) Harmonization

- Small sample sizes at the grantee level
  - Meta-Regression
Evaluation Question 1: Data Sources

- State estimates from the National Survey on Drug Use and Health
- Accident reports from the National Highway Traffic Safety Administration
- Arrest reports from the Uniform Crime Reports
- State and local surveys
- Local administrative records
Evaluation Question 1: Analytic Approach

• Assess “normative” changes in UAD, PDU and related outcomes from 2010-11 through 2013-14

• “Additive” change in outcomes for PFS II Cohort from 2012-13 to 2013-14
  • 12-13 to 13-14 is post-intervention period to PFS II, still pre-intervention for PFS 2013 & PFS 2014
Evaluation Question 1: Design Structure

- **Grantee-Level**
  - Non-equivalent control groups (NECG) design
  - PFS Grantees ($N_{States} = 41$)
    - PFS II ($n = 14$), PFS 2013 ($n = 14$), PFS 2014 ($n = 13$)

- **Subrecipient-Level**
  - NECG
  - PFS subrecipient communities versus non-funded communities within PFS States
Meta-Regression

- SPF-PFS Grantee-Level Evaluation: NSDUH Combined Two-Year Estimates
  - Sample Size contributing to the estimates ~ 35,400 adolescents, ~35,900 young adults
  - “Upweighted N” ~ 2,420,000 adolescents, ~15,218,000 young adults
Random Effects Meta-Regression

- Fixed Effects
  - Intercept (2010/2011)
    - Intercept differences between PFS II and PFS 2013/14
  - Time₁ (Normative Change from 2010/2011 through 2013/2014)
    - Normative Change Differences between PFS II and PFS 2013/14
  - Time₂ (Additive Change from 2012/2013 to 2013/2014)
    - For PFS II only (i.e., the “Intervention Effect”)

- Random Effects
  - State-Level Variation in Intercept, Time₁ and Time₂
  - Covariances between Intercept, Time₁ and Time₂
Observations To Note

- There were meaningful reductions in past 30 day alcohol use and binge drinking in PFS II grantee States during the initial post-intervention period (among ages 12-17)
  - Above-and-beyond the general trends toward reduced use from 10/11-13/14
  - In parallel with increases of peer disapproval of alcohol use

- Parallel increases in marijuana (which was not targeted)

- Little in the way of intervention-impacted reductions in PDU
  - Above-and-beyond the general trends toward reduced use
Example: SBIRT with “P”

Prevention in Primary Care Setting: Innovative Brainstorming
Protocol: Screening & Brief Intervention

- Administered by nurse (usu. in exam room)
- Computerized for confidentiality, illiteracy
- 5-8 min. child-report and parent-report
- Non-sensitive questions in child-report
- Computer scored & compare to threshold
- Results provided to pediatrician
- Recommendations & materials provided
## Stakeholder Acceptability

<table>
<thead>
<tr>
<th>Characteristic of Screening Protocol</th>
<th>Pilot Study</th>
<th>Effectiveness Study</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Parents</td>
<td>Patients</td>
</tr>
<tr>
<td>Happy with / did not mind screening</td>
<td>100.0%</td>
<td>91.2%</td>
</tr>
<tr>
<td>Doctor helping kids behave safer is important</td>
<td>100.0%</td>
<td>94.8%</td>
</tr>
<tr>
<td>Had no or little trouble completing screening</td>
<td>100.0%</td>
<td>98.2%</td>
</tr>
<tr>
<td>Child had no or little trouble completing</td>
<td>100.0%</td>
<td>-</td>
</tr>
<tr>
<td>Easy or not hard to answer honestly</td>
<td>98.3%</td>
<td>93.0%</td>
</tr>
<tr>
<td>Concerned about confidentiality</td>
<td>0.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Gave a wrong answer on purpose</td>
<td>1.7%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Preferred paper form over computer</td>
<td>0.0%</td>
<td>5.3%</td>
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<tr>
<td>Preferred reception room over exam room</td>
<td>5.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Preferred doctor give screening over nurse</td>
<td>3.4%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Would mind if pediatrician screens patients</td>
<td>6.8%</td>
<td>-</td>
</tr>
<tr>
<td>If own child was ‘at risk’ would seek help (probably)</td>
<td>83.3%</td>
<td>-</td>
</tr>
<tr>
<td>If own child was ‘at risk’ AND doctor knew who could help, would seek help (probably)</td>
<td>83.3%</td>
<td>-</td>
</tr>
</tbody>
</table>

Ridenour et al. (2015)
SBIRT to Date

• Recruiting for 20 months

• 92% enrolled (vs. 73% in school studies)

• Average treatment sessions = 5.1 (SD=6.5)

• Caregivers: 94.2% female, 36.5 years old (SD=6.7), 82.1% African-American, 14.6% Caucasian

• Youth: 53.6% female; 11.8 years old (SD=1.1), 89.4% African-American; 10.0% Caucasian
Referral to Treatment (Prevention)

- **Family Check-Up** is a brief, strengths-based intervention model for children ages 2 through 17. It promotes positive child outcomes by improving parenting and family management practices.

- Family-based, motivational interviewing

- 2 – 4 sessions

- Assessment-driven “case conceptualization”

- Efficacious / effective in other settings
Innovative Brainstorming

- What are the challenges of delivering prevention efforts in primary care setting?
- What approaches have you used or considered using?
- What would need to change to integrate more prevention services in primary care settings?
• Questions
• Comments
• Concerns