Preventing Prescription Drug Misuse and Abuse

SAMHSA's Response and Preliminary Findings from CSAP's Partnership for Success

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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

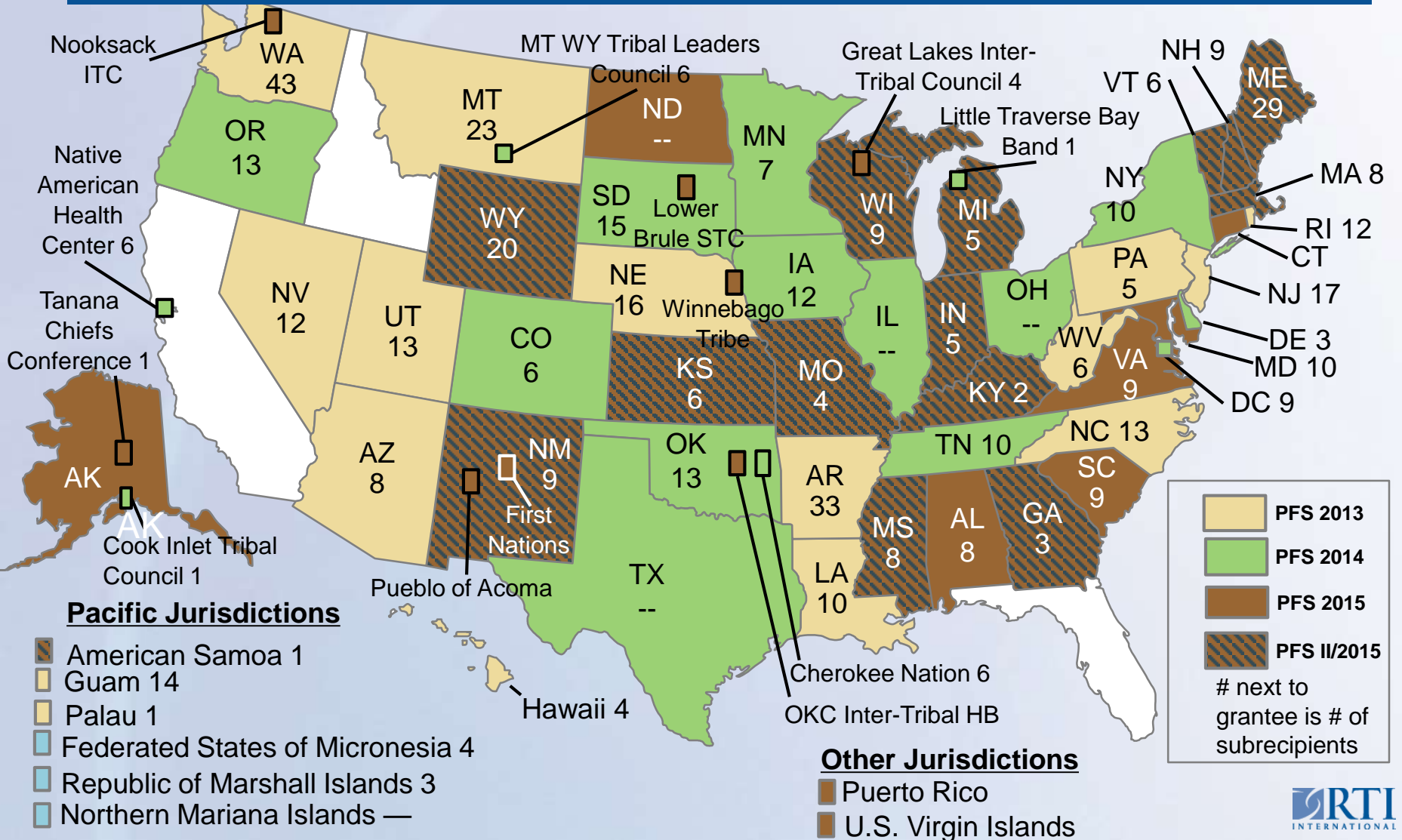| Cohort	Grantees	Funded Community Subrecipients	Length of Grant	Start Date – End Date
PFS II	15*	141	3 years	Oct. 2012 – Sept. 2015
PFS 2013	16**	230	5 years	Oct. 2013 – Sept. 2018
PFS 2014	21***	~160	5 years	Oct. 2014 – Sept. 2019
PFS 2015	32****	~250	5 years	Oct. 2015 – Sept. 2020
Total	69****	~641		

* 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

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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

Map labels:
- Nooksack ITC — WA 43
- OR 13
- Native American Health Center 6
- Tanana Chiefs Conference 1
- AK
- Cook Inlet Tribal Council 1
- NV 12
- UT 13
- AZ 8
- Pueblo of Acoma — NM 9 — First Nations
- TX --
- Hawaii 4
- MT 23
- WY 20
- CO 6
- MT WY Tribal Leaders Council 6
- ND --
- SD 15
- Lower Brule STC
- NE 16
- Winnebago Tribe
- KS 6
- OK 13
- Cherokee Nation 6
- OKC Inter-Tribal HB
- AR 33
- LA 10
- MN 7
- IA 12
- MO 4
- MS 8
- AL 8
- Great Lakes Inter-Tribal Council 4
- WI 9
- Little Traverse Bay Band 1
- MI 5
- IL --
- IN 5
- KY 2
- TN 10
- GA 3
- NH 9
- VT 6
- ME 29
- NY 10
- MA 8
- RI 12
- CT
- NJ 17
- PA 5
- OH --
- WV 6
- VA 9
- DE 3
- MD 10
- DC 9
- NC 13
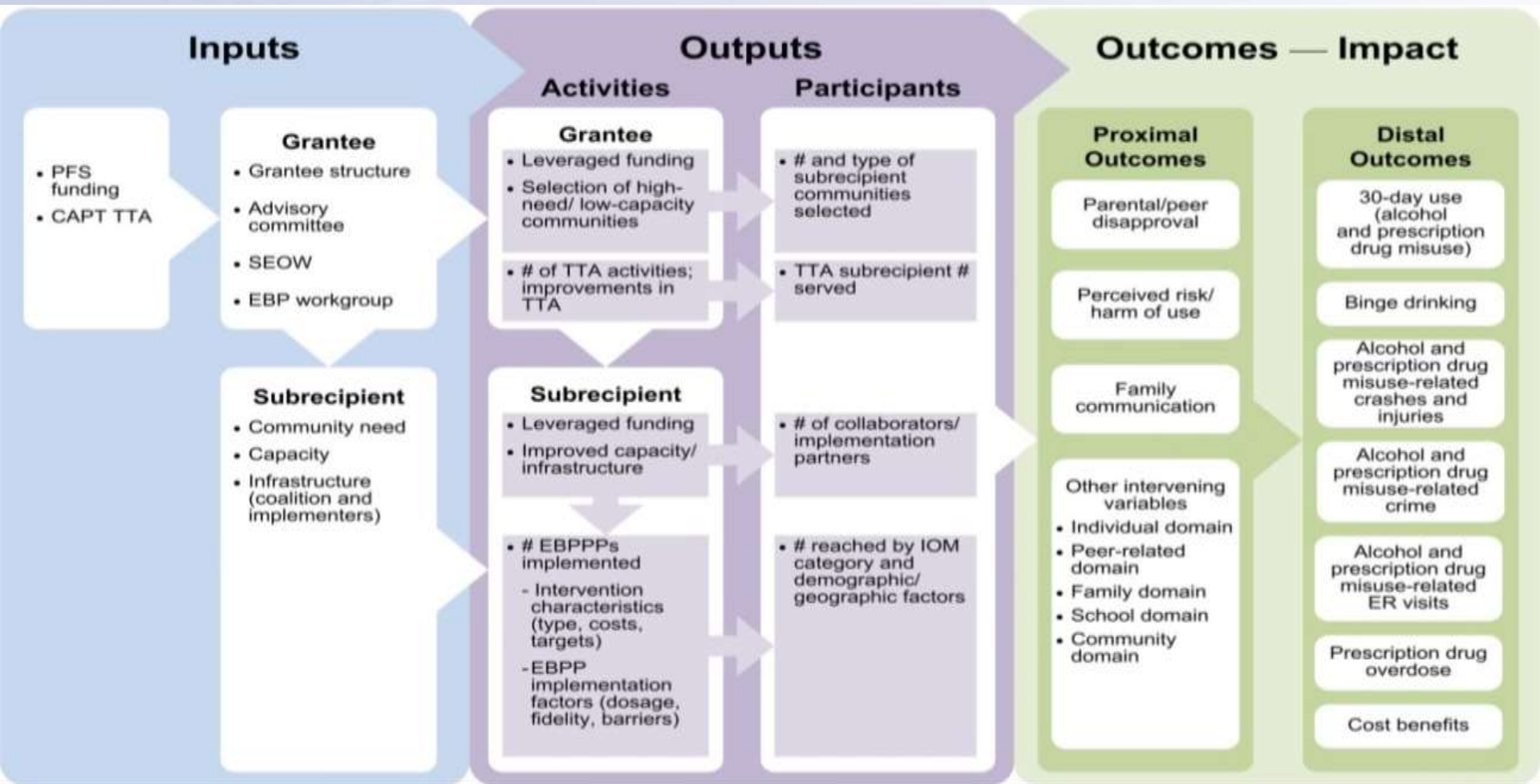- SC 9

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Logic Model, Evaluation Questions, Key Analytic Features, Grantee Evaluation Plans

EVALUATION DESIGN

PFS Cross-Site Evaluation Logic Model

PFS Cross-Site Evaluation Questions

EQ1
Was the implementation of PFS programs associated with a reduction in underage drinking and/or prescription drug misuse and abuse?

EQ2
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?

EQ3
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?

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	EQ 1	EQ 2	EQ 3	EQ 4	EQ 5
Data Harmonization	✓	✓	✓	✓	✓
Qualitative Comparative Analysis (QCA)			✓		✓
Cost Effectiveness Analysis				✓	

- Identification of epidemiological data
- Identification of matched comparison communities

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
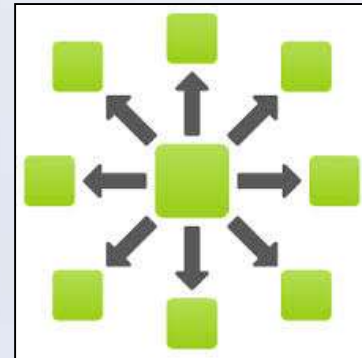
- Grantee-Level **Outcome Data**
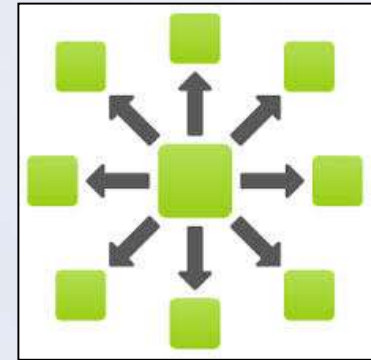
    1. PFS Selected Grantee-Level Outcomes

Cross-Site Requirements: Community-Level Data

- Community-Level **Process Data**

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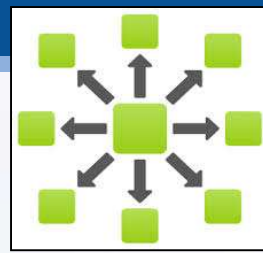
  Submitted by subrecipients

- 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?

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Priorities Across PFS Grantees

PFS Cohorts	Priority			
	Underage Drinking	Prescription Drugs	Marijuana	Other
PFS II	11	13	1	0
PFS 2013	15	12	2	1
PFS 2014	18	10	5	1
PFS 2015	22	20	5	5
Total*	**55**	**42**	**12**	**7**

* Excludes PFS II, as they are also included in PFS 2015 counts.

Strategies Targeting 12-17

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

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

- **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

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Strategies Targeting 18-25

CSAP Strategy Type	Evidence Based?			Total
	Yes	**No**	**I Don't Know**	
Alternative activities	12	7	7	26
Community-based processes	28	18	20	66
Environmental strategy	57	40	24	121
Information dissemination (and other communication activities)	68	105	41	214
Prevention education	30	18	9	57
Problem identification and referral	7	1	1	9
Total	202	189	102	493

Using Archival Data to Examine Impact

The National Poisoning Data Center

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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)

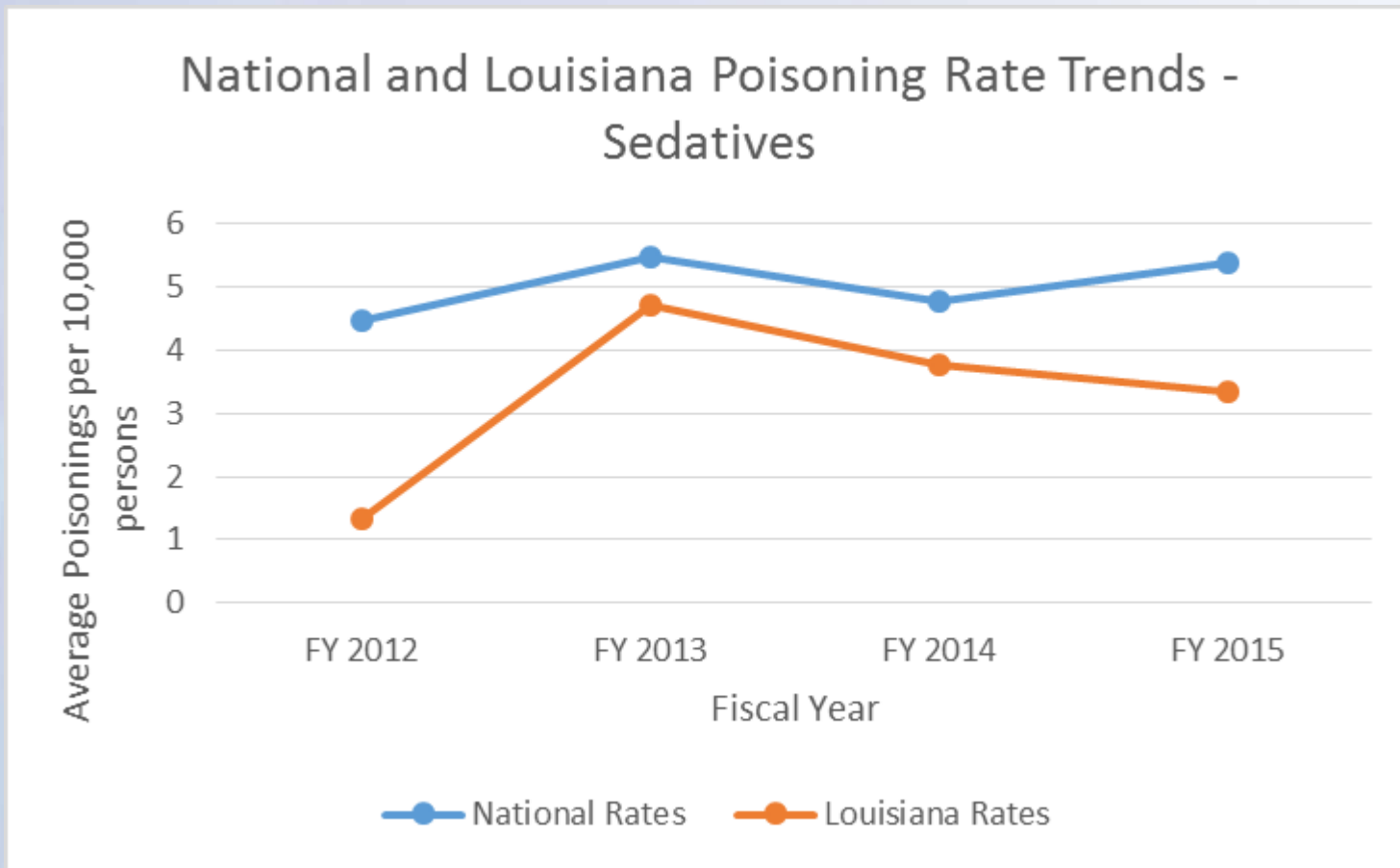- Estimated Rate per 10,000 youth = (counts/denominator)*10,000

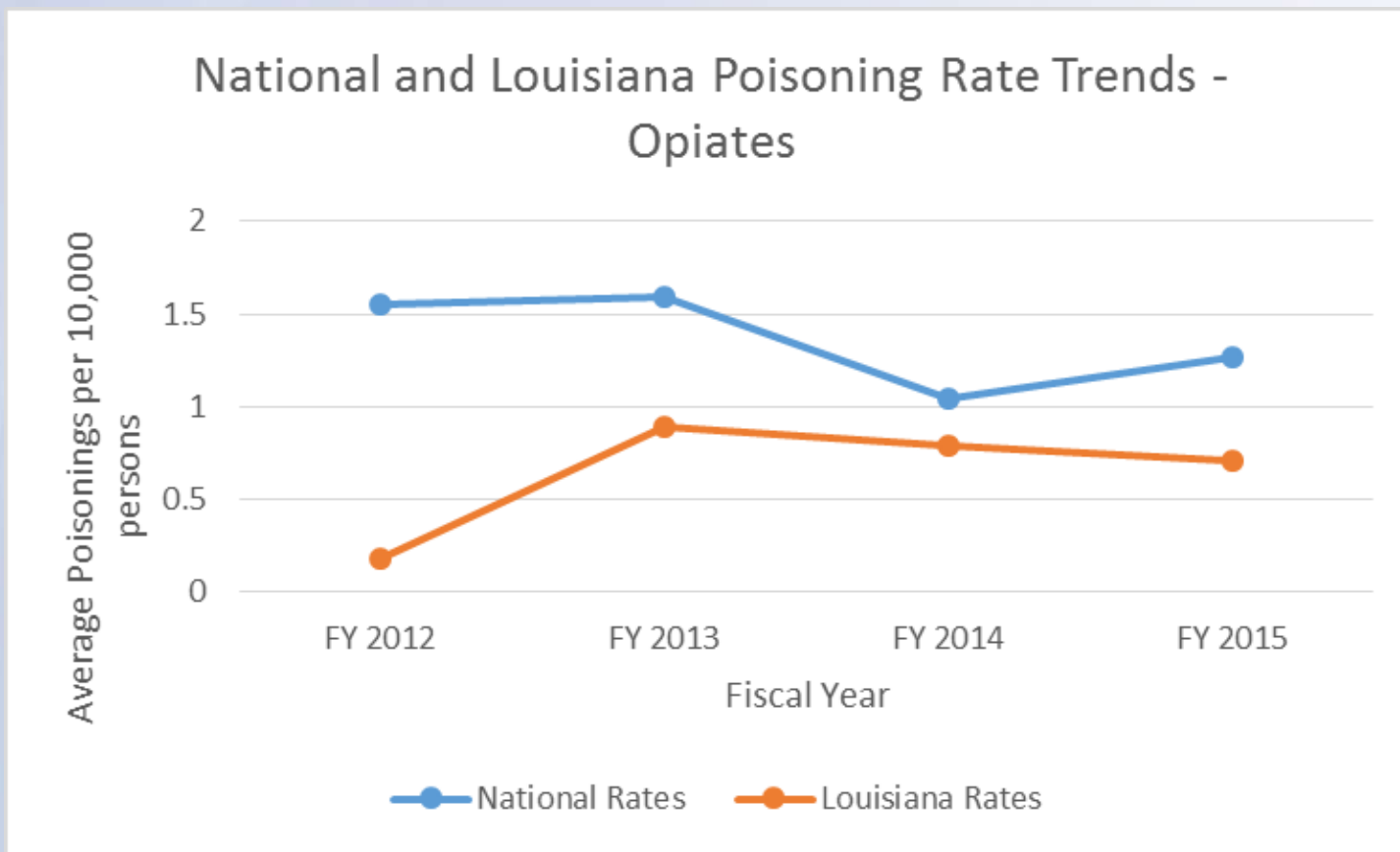# National and Louisiana Poisoning Trends - Overall
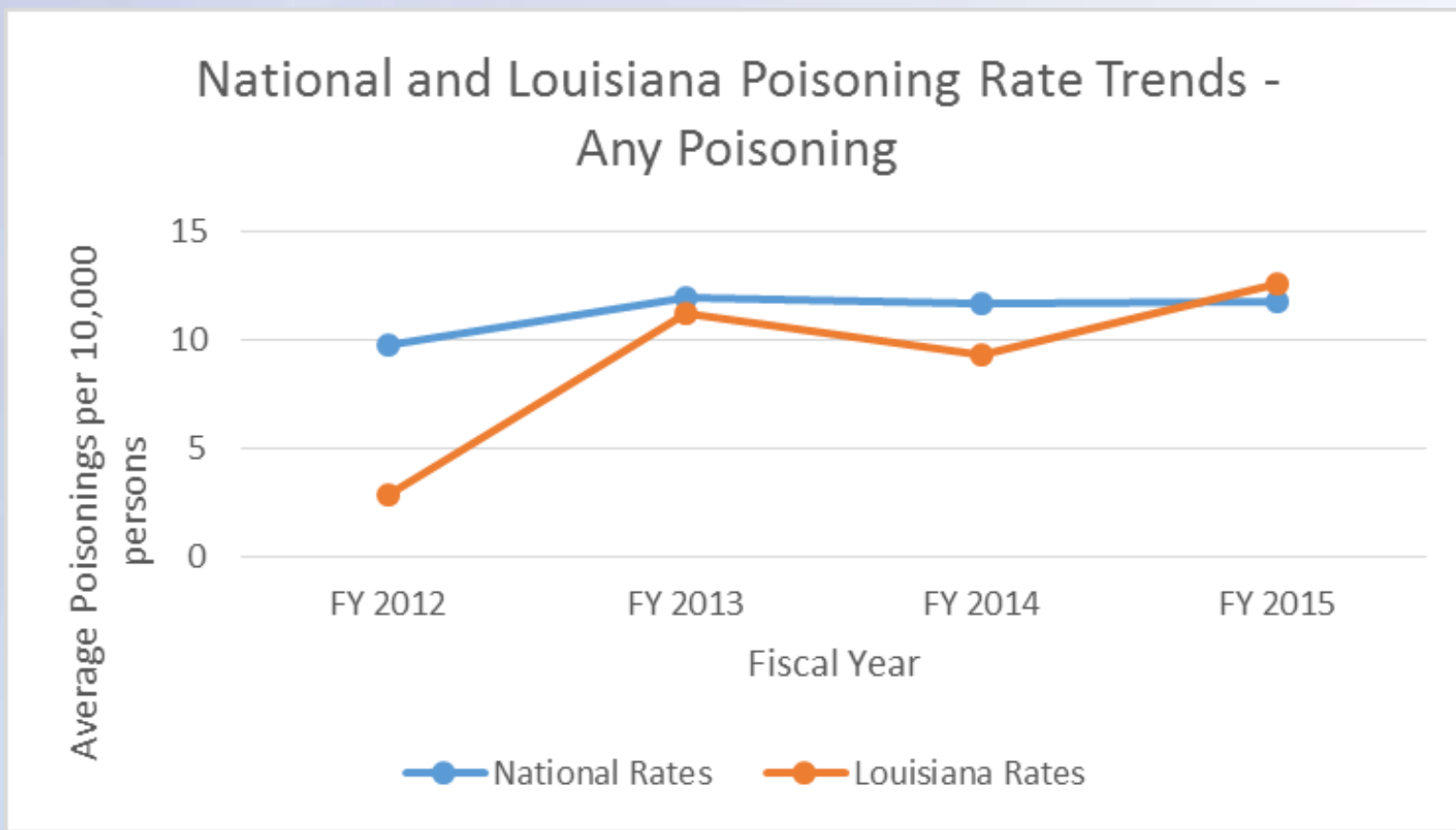
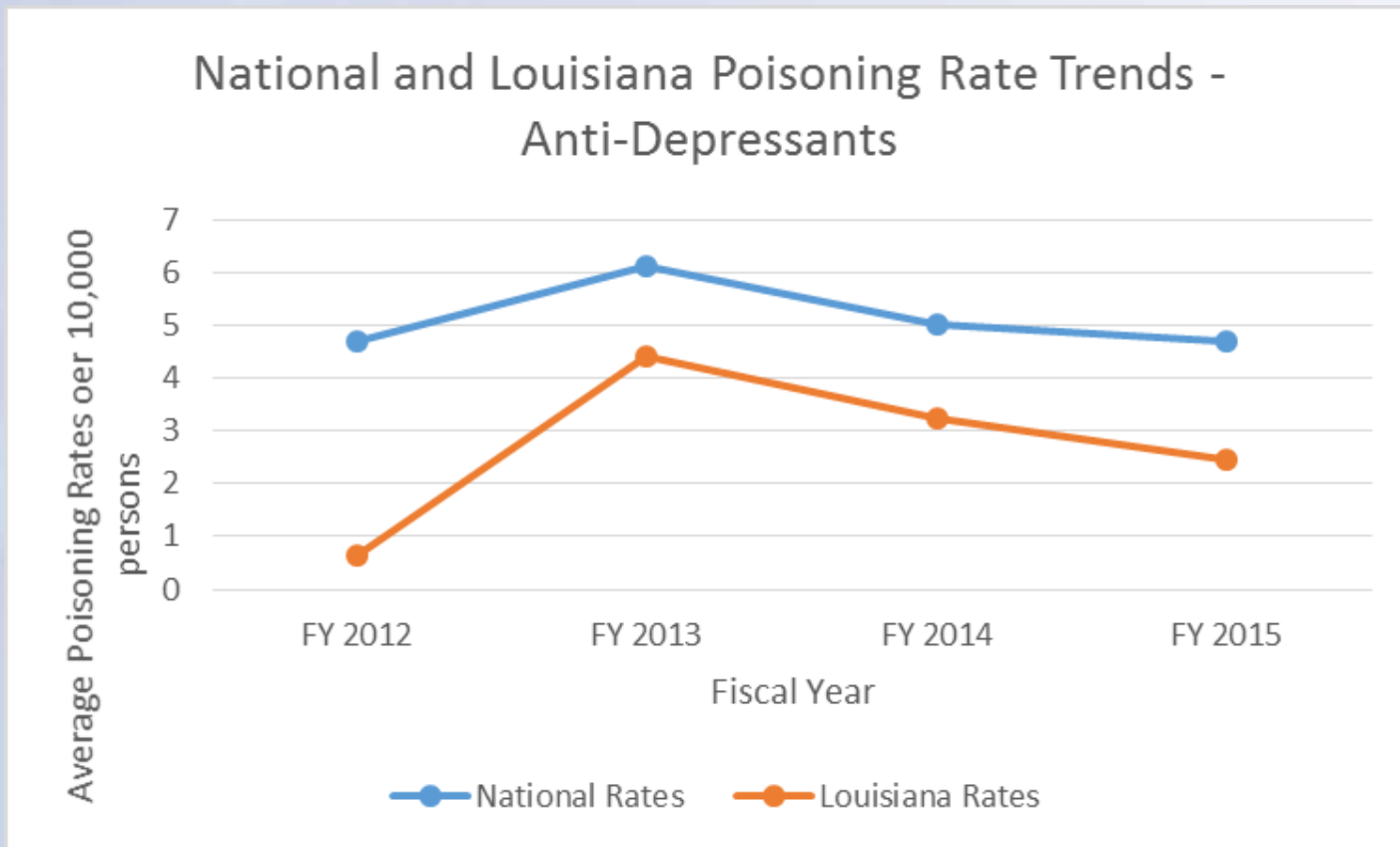# National and Louisiana Poisoning Trends – Stimulants
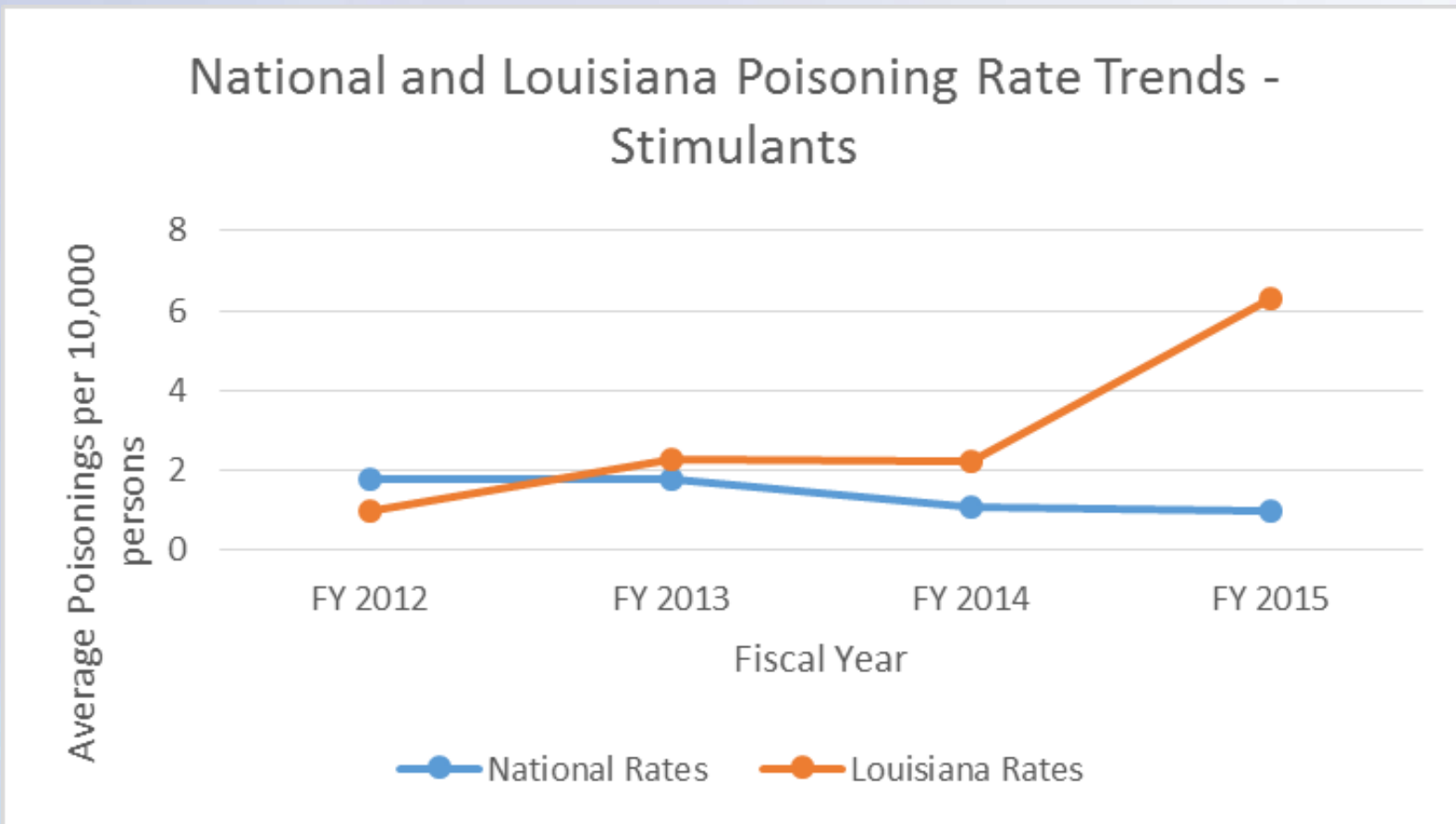
National and Louisiana Poisoning Trends - Sedatives

National and Louisiana Poisoning Trends - Opiates

National and Louisiana Poisoning Trends – Anti-Depressants

National and Louisiana Poisoning Trends – Ethanol
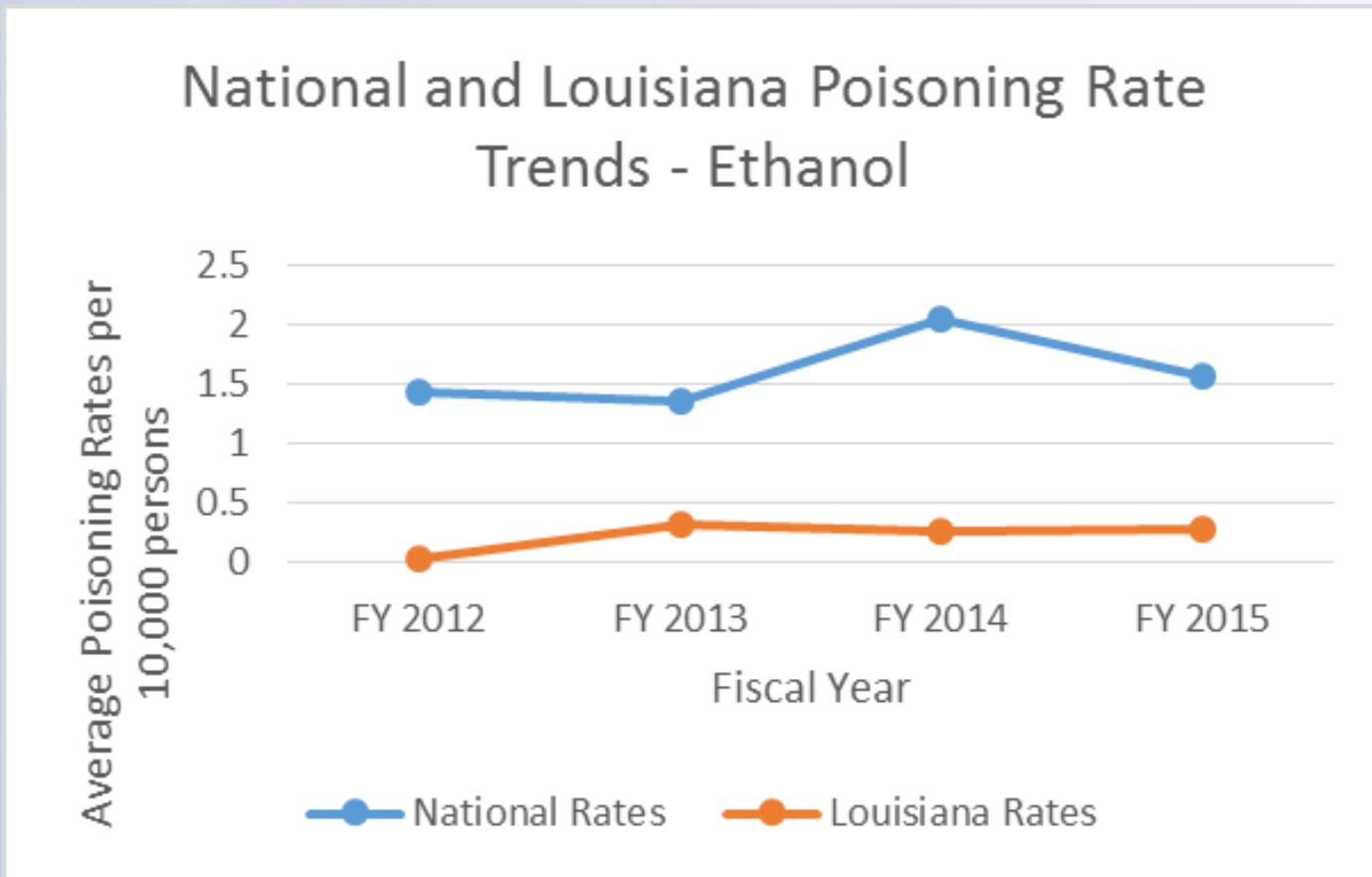
Summary Findings

- 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

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Geographic Distribution of PFS Grantees

Nooksack ITC — WA 43

MT WY Tribal Leaders Council 6

Great Lakes Inter-Tribal Council 4

NH 9

VT 6

ME 29

OR 13

MT 23

ND --

MN 7

Little Traverse Bay Band 1

NY 10

MA 8

Native American Health Center 6

WY 20

SD 15

Lower Brule STC

WI 9

MI 5

RI 12

CT

Tanana Chiefs Conference 1

NV 12

UT 13

NE 16

IA 12

Winnebago Tribe

IL --

IN 5

OH --

PA 5

NJ 17

DE 3

MD 10

AK

CO 6

KS 6

MO 4

KY 2

WV 6

VA 9

DC 9

AZ 8

NM 9

OK 13

TN 10

NC 13

AK

First Nations

AR 33

MS 8

AL 8

GA 3

SC 9

Cook Inlet Tribal Council 1

Pueblo of Acoma

TX --

LA 10

Pacific Jurisdictions

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

Hawaii 4

Cherokee Nation 6

OKC Inter-Tribal HB

Other Jurisdictions

Puerto Rico
U.S. Virgin Islands

PFS 2013

PFS 2014

PFS 2015

PFS II/2015

next to grantee is # of subrecipients

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Evaluation Questions

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

  - 2010/2011, 2011/2012, 2012/2013, 2013/2014

  - 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
  - – $Time_1$ (Normative Change from 2010/2011 through 2013/2014)
    - ▪ Normative Change Differences between PFS II and PFS 2013/14
  - – $Time_2$ (Additive Change from 2012/2013 to 2013/2014)
    - ▪ For PFS II only (i.e., the "Intervention Effect")

- ▪ Random Effects
  - – State-Level Variation in Intercept, $Time_1$ and $Time_2$
  - – Covariances between Intercept, $Time_1$ and $Time_2$

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

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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

Characteristic of Screening Protocol	Pilot Study		Effectiveness Study	
	Parents	Patients	Parents	Patients
Happy with / did not mind screening	100.0%	91.2%	96.5%	83.3%
Doctor helping kids behave safer is important	100.0%	94.8%	100.0%	95.2%
Had no or little trouble completing screening	100.0%	98.2%	100.0%	91.9%
Child had no or little trouble completing	100.0%	- -	98.2%	- -
Easy or not hard to answer honestly	98.3%	93.0%	98.2%	80.6%
Concerned about confidentiality	0.0%	7.0%	3.5%	9.7%
Gave a wrong answer on purpose	1.7%	5.3%	3.5%	3.2%
Preferred paper form over computer	0.0%	5.3%	3.5%	3.2%
Preferred reception room over exam room	5.0%	5.3%	3.5%	16.1%
Preferred doctor give screening over nurse	3.4%	14.0%	7.0%	8.1%
Would mind if pediatrician screens patients	6.8%	- -	8.8%	- -
If own child was 'at risk' would seek help (probably)	83.3% (10.0%)	- -	91.2% (5.3%)	- -
If own child was 'at risk' AND doctor knew who could help, would seek help (probably)	83.3% (13.3%)	- -	87.7% (10.5%)	- -

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