

## Trends in substance use and risk factors among 10<sup>th</sup> grade students in communities receiving Partnerships for Success (PFS) funding

Transforming Lives

The Washington State Partnerships for Success (PFS) project provides extra funding support to community substance abuse prevention coalitions that are part of Washington’s Community Prevention and Wellness Initiative (CPWI).

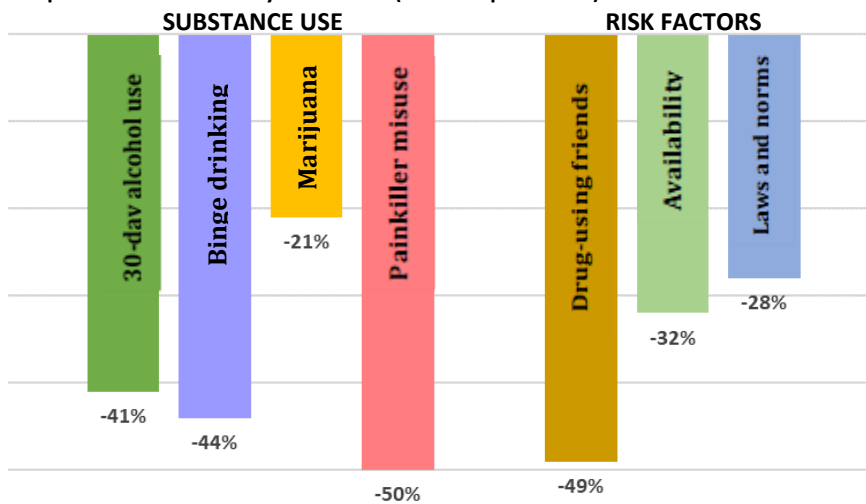
PFS communities have among the highest overall risk rates for drug and alcohol abuse in the state and are among the least able to fund comprehensive prevention services. In most cases, PFS funds are combined with money from other sources to support ongoing prevention initiatives and to create parity in funding levels across the state.

This report compares trends in substance use and substance use risk factors among 10<sup>th</sup> grade students in communities that received PFS funding for CPWI prevention coalitions-compared to those in demographically similar communities without CPWI coalitions. The results highlight the recent decline in youth substance abuse and importance of community-based prevention coalitions such as *Partnerships for Success*.

### Key Findings

- Compared to their peers in non-Partnership for Success (PFS) regions, students in PFS-funded communities had historically higher rates of substance use and substance use risk factors—this gap has narrowed over time.
- Drug and alcohol use by 10<sup>th</sup> graders in PFS-funded communities decreased significantly over the past decade.
- Rates of three key risk factors for youth substance abuse, including drug-using friends, drug availability, and favorable laws and norms decreased significantly in PFS communities over the same period.
- Substance use and risk rates decreased among all 10<sup>th</sup> graders in the state; however, declines in PFS-funded communities corresponded with the onset of prevention services.

Figure 1. Percentage decline in substance use rates and substance use risk factors in 2016 compared to the baseline year of 2002 (2006 for painkillers)



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## Data and Methods

### Data Source

The data presented here was collected from Washington State Healthy Youth Survey (HYS) administered biannually to middle and high school students across the state (please refer to ASKhys.net for more information).

### Sample

The present sample included all 10<sup>th</sup> grade students who took the HYS between 2002 and 2016—inclusive—and who attended school in a cluster three district. Cluster three—refers to one of six geographically and demographically similar regions<sup>1</sup>—was selected due to characteristics being the closest to the statewide average on a number of indicators.

**PFS group:** The PFS group included all students (12,246) who met the criteria outlined above and who attended school in a district that met the following criteria: joined the CPWI as one of the first (2011) or second (2012) cohorts; and received additional funding through the PFS grant beginning in 2013<sup>2</sup>.

**Non-PFS group.** All students (50,234 total) from any of the 45 school districts that were not part of a CPWI or PFS community (Figure 2).

### Outcome variables

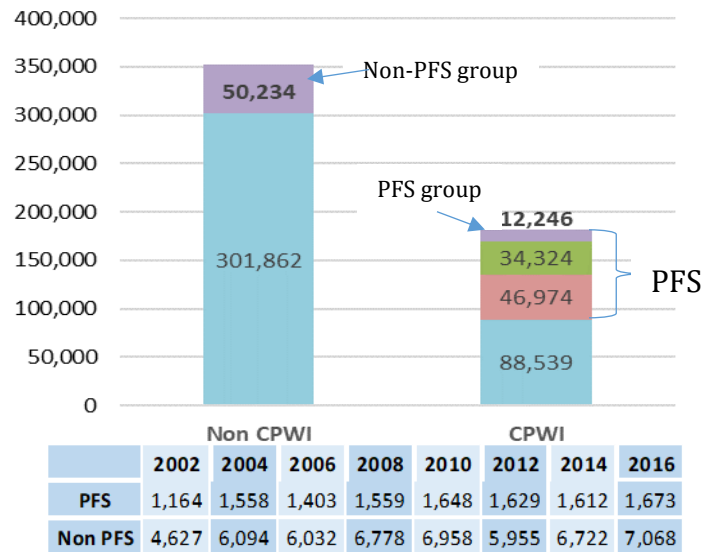
**Substance use:** The HYS current substance use items included here have self-reported rates of any substance-use in the 30 days prior to the survey administration, or two weeks prior, in the case of binge drinking. All responses were coded as yes or no.

- 30-day alcohol use
- 30-day marijuana use
- 30-day painkiller use
- Binge-drinking in the past two weeks (yes/no)

**Substance use risk factors:** Risk factors refer to standardized scales comprised of more than one HYS item. A positive score on a risk factor indicates that a student’s composite score was high enough to put them at risk in that particular domain<sup>3</sup>. The risk factors used here include:

- Perceived availability of Drugs
- Laws and norms favorable to drug use
- Friends’ use of drugs

**Figure 2. Population and sample sizes, 10th graders only, 2002-2016**



<sup>1</sup> These grouping were part of “School Districts Like Us” (SDLU), a procedure for grouping school districts. See Appendix A for details.

<sup>2</sup> PFS communities, by definition, had the highest risk rankings for substance use in the state at the time they were selected to participate.

<sup>3</sup> Please refer to Appendix B for a description of the items comprising each risk scale.

## Results

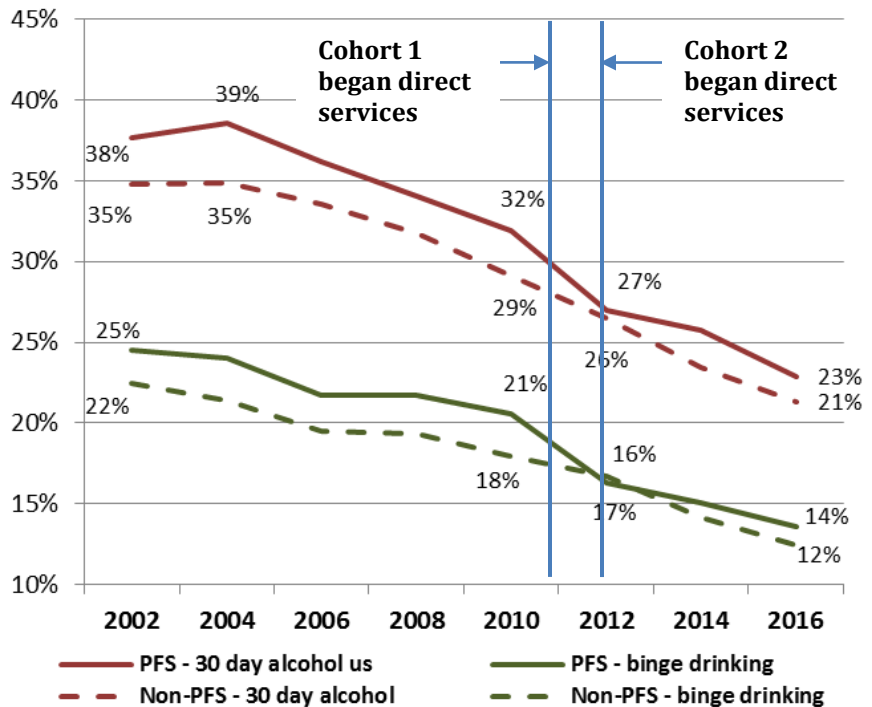
### Alcohol Use

Alcohol use by 10<sup>th</sup> graders in Washington state has decreased significantly<sup>4</sup> over the past 15 years. Thirty-day alcohol use (any alcohol use in the past 30 days) among 10<sup>th</sup> graders in PFS communities fell from a high of 39 percent in 2004 to 23 percent in 2016 (Figure 3). Rates of recent binge drinking in PFS communities fell by 44 percent over the same time period from 25 to 14 percent.

Tenth-grade alcohol use declined significantly over time in non-PFS communities as well. However, while students in PFS communities have historically higher rates of alcohol use than their counterparts in non-PFS communities, the gap between PFS and non-PFS communities narrowed by approximately 50 percent on both indicators between 2002 and 2016<sup>5</sup>.

Furthermore, as Figure 3 shows, PFS communities showed fairly sharp decreases in both 30 day alcohol use—16 percent decline—and recent binge-drinking —almost 24 percent decline—between 2010 and 2012, corresponding with the commencement of prevention services in PFS communities. In contrast, the decrease in alcohol use in non-PFS communities remained steady during the same period.

**Figure 3. Recent alcohol use and binge-drinking**



### Other Drug Use

Thirty-day marijuana use among 10<sup>th</sup> graders in PFS communities decreased from a high of 25 percent in 2002 to 19 percent in 2016, compared to a 22 to 18 percent decrease in non-PFS communities. In contrast to alcohol use, marijuana use rates increased after 2006 before falling dramatically again by 2016. Figure 4 puts these shifting patterns of marijuana use in the context of the recent legalization of marijuana in Washington State.

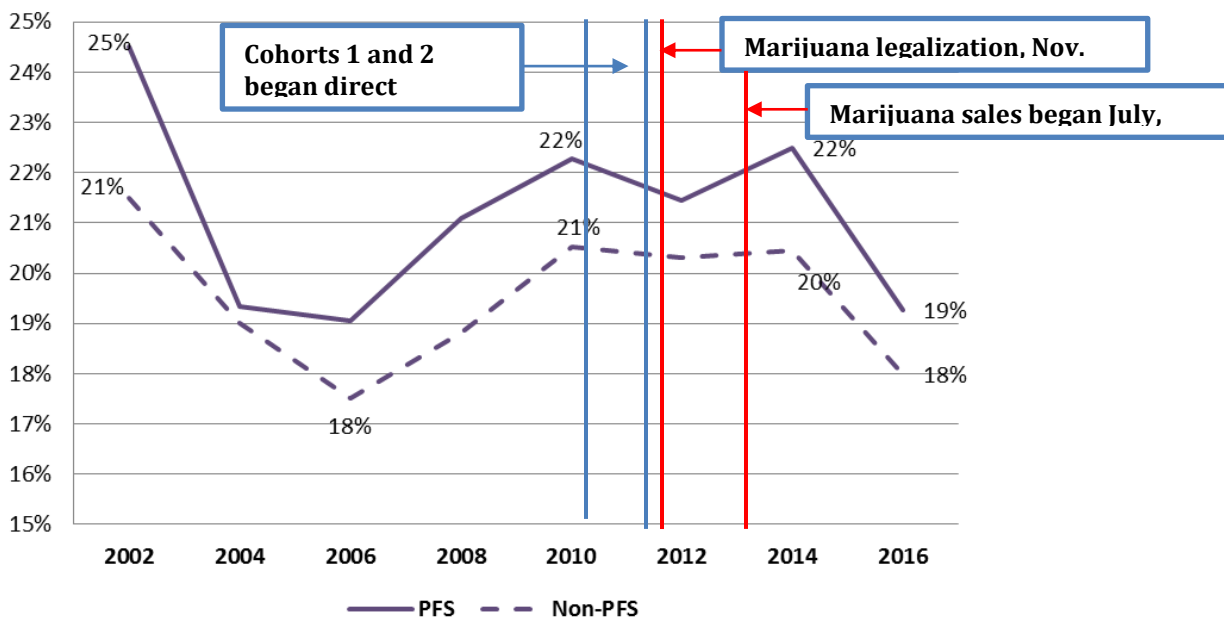
As with alcohol use, marijuana use among 10<sup>th</sup> graders in PFS communities decreased between 2010 and 2012, corresponding to the onset of prevention services. Again, while marijuana use in non-PFS communities also decreased over time, the rate of decline did not change appreciably between 2010 and 2012.

<sup>4</sup> Unless otherwise specified, significance refers to statistical significance, Chi-Square  $p < .001$ .

<sup>5</sup> Table 2 in Appendix C includes detailed information on the samples sizes and results for PFS and non-PFS communities in each of the four testing periods.

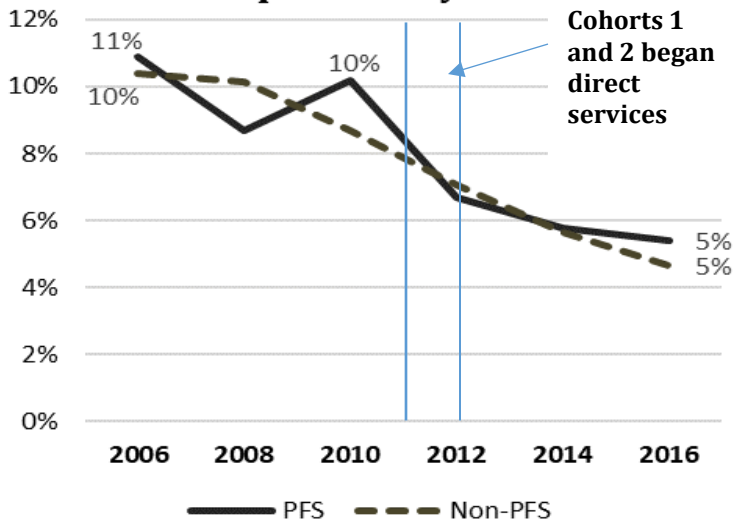
After an initial decrease, there was a notable increase in marijuana use in PFS communities between 2012 and 2014. While it is impossible to establish a causal relationship with the current data, this increase happened to correspond with the vote to legalize marijuana in Washington state in November of 2012, and continued until the start of legal marijuana sales in the summer of 2014. However, as shown in Figure 4, marijuana use again declined considerably in 2016. While these trends are promising, future years will show if the overall decline in marijuana use among teens will continue.

**Figure 4. Marijuana use in past 30 days**



A question about recent pain killer misuse was added to the HYS in 2006. As Figure 5 shows, 30-day painkiller misuse rates among 10<sup>th</sup> graders in PFS communities hovered between 9 and 11 percent between 2006 and 2010, then decreased to 5 percent by 2016. Similar to other substance use rates, painkiller misuse in non-PFS communities declined gradually over time; no particular time period was associated with greater or lesser decreases in usage rates. On the other hand, PFS communities saw the steepest decrease between 2010 and 2012, corresponding to intense local and statewide efforts to enhance prevention services.

**Figure 5. Painkiller use in the past 30 days**



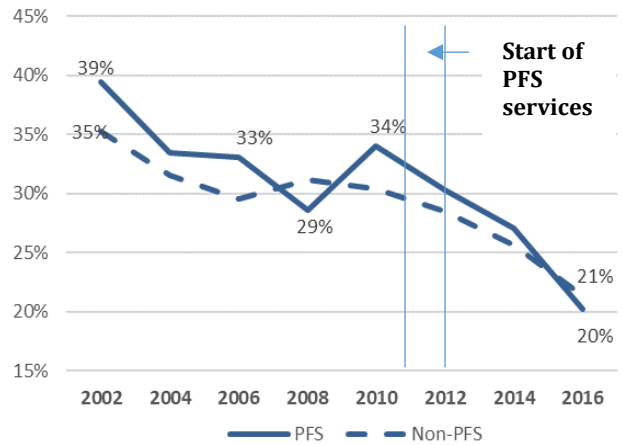
then decreased to 5 percent by 2016. Similar to other substance use rates, painkiller misuse in non-PFS communities declined gradually over time; no particular time period was associated with greater or lesser decreases in usage rates. On the other hand, PFS communities saw the steepest decrease between 2010 and 2012, corresponding to intense local and statewide efforts to enhance prevention services.

By 2016, rates of painkiller misuse had decreased significantly (by 50 percent) among 10<sup>th</sup> graders in both PFS and non-PFS communities, and the difference between the two types of communities was negligible.

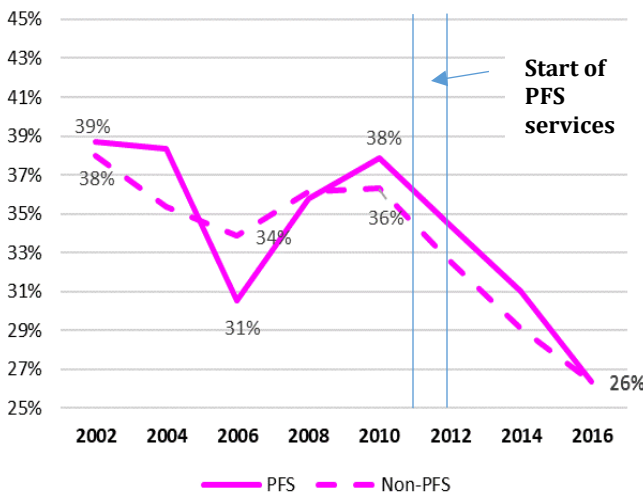
## Substance Use Risk Factors<sup>6</sup>

One of the most salient predictors of drug and alcohol use among youth is the drug-using behavior of their closest friends<sup>7</sup>. In 2002, 40 percent of students in the PFS communities reported having close friends who used drugs or alcohol compared to 35 percent of students in non-PFS communities. By 2016, this number had fallen by one-half to 20 percent in PFS compared to 21 percent in non-PFS communities (Figure 6). Once again, risk rates in PFS communities dropped fairly sharply between 2010 and 2012, while the decline was more gradual in non-PFS communities.

**Figure 6. Percent of 10th graders "at risk" due to drug-using friends**



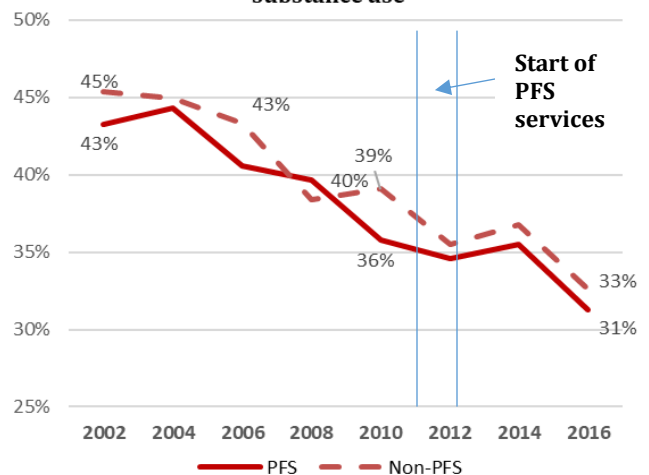
**Figure 7. Percent of 10th graders "at risk" due to perceived availability of drugs or alcohol**



A major component of Washington's CPWI/PFS funded prevention efforts centers on changing attitudes and practices in the larger community. This includes increasing awareness of the dangers of drug and alcohol use among youth and encouraging the adoption of laws and policies aimed at discouraging underage substance use. As Figure 7 shows, 10<sup>th</sup> graders in 2016 reported more difficulty in gaining access to drugs and alcohol than any 10<sup>th</sup> grade cohort in the previous 15 years. In this case, both groups showed a spike in 2010 followed by a sharp decline over the next three biennium with 26 percent of students at risk in 2016 regardless of group affiliation.

Finally, laws and norms refers to the perception by youth that they will be held legally or socially accountable for their drug or alcohol use. Stricter laws should result in increased anticipation of negative consequences for substance use, and therefore a lower score on this risk factor. The proportion of students at-risk due to community laws and norms favorable to drug use decreased steadily and significantly over time in both groups. This risk factor did not show the typical pattern of decline between 2010 and 2012 described elsewhere, likely because laws and policies may change more slowly than other factors.

**Figure 8. Percent of 10th graders "at risk" due to community laws/norms favorable to substance use**



<sup>6</sup> See Appendix B

<sup>7</sup> Branstetter, S.A., Low, S. & Furman, W. (2011). The influence of parents and friends on adolescent substance use: A multidimensional approach. *Journal of Substance Use*, 16(2): 150-160.

## Summary and Conclusions

This report compares rates of substance use and substance use risk factors over time between two groups of 10<sup>th</sup> graders in Washington state. The PFS group attended school in a community that became part of the CPWI in 2011 or 2012, and that subsequently received additional prevention funding through the PFS grant. The non-PFS group attended school in a demographically similar community that did not receive PFS or CPWI funds for substance abuse prevention.

**Between 2002 and 2016, rates of 30-day alcohol use among 10<sup>th</sup> graders in Washington State declined by 41 percent in PFS communities and 39 percent in non-PFS communities.** Over the same period of time, marijuana use dropped by 21 percent in PFS communities and 16 percent in non-PFS communities, while binge drinking dropped by 45 percent in both groups. The percentage of 10<sup>th</sup> graders who misused painkillers decreased by more than 50 percent in both groups between 2006 and 2016.

Rates of three major risk factors for youth substance use were tracked over time. **The proportion of students in PFS communities reporting that their closest friends used alcohol or drugs fell by 49 percent between 2002 and 2016, compared to a 39 percent decline in non-PFS communities.** Students' perception of the availability of drugs or alcohol in their community decreased significantly over time in both groups. Community laws and norms favorable to drug use significantly declined over time in both groups as well, but to a lesser degree than the other risk factors.

Compared to PFS communities, 10<sup>th</sup> grade substance use rates in non-PFS communities were slightly (non-significantly) lower to begin with, and declined at roughly the same rates. However, the patterns of decline differed between the two groups. For almost every reported substance use or risk rate, percentages in the non-PFS group declined over time in a gradual, linear fashion. The rates of decline in the PFS communities were less consistent. **PFS communities showed particularly rapid declines in 10<sup>th</sup> grade substance use and risk factors between 2010 and 2012, corresponding with the start of substance abuse prevention services in those communities.** While it is impossible to establish causality with the current data, these findings point to the importance of continually tracking these trends over time as more progress is made in the area of substance abuse prevention.

Several factors are important to keep in mind when interpreting the results. First, the PFS sample is comparable to the non-PFS comparison group in key demographic indicators including population density, racial/ethnic distribution, and the proportion of school-aged students eligible for free or reduced price lunch. However, they likely differ on other factors that could not be taken into consideration. PFS communities were selected in large part because they were considered to be particularly at risk on a common risk composite index<sup>8</sup>. These higher risk rates are consistent with the overall higher rates of substance use among the PFS compared to non-PFS communities. Furthermore, higher risk factors suggest that PFS communities may face greater challenges in implementing prevention programs compared to the comparison group. The fact that students in PFS communities saw reductions in substance use and risk factors that put them largely on par with comparable communities highlights the success of the PFS-funded community prevention coalitions.

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<sup>8</sup> For more information, see <https://www.dshs.wa.gov/sesa/research-and-data-analysis/community-risk-profiles>

**School District Like Us Summary**

CLUSTER	N	Variable	N	Mean	Std Dev	Minimum	Maximum
1: Low density, low to median level of poverty	39	K-12 enrollment	39	723	822.6825	68	3487
		Density	39	12	10.74681	1	50
		White (K-12)	39	84%	0.090424	58%	96%
		Hispanic (K-12)	39	8%	0.068162	1%	30%
		Native American (K-12)	39	2%	0.033896	0%	18%
		Eligible for lunch prog.	39	36%	0.110076	0%	47%
		LevyApproved	39	70%	0.254174	0%	104%
2: High % of minorities, high poverty	31	K-12 enrollment	31	2410	3707.23	181	15533.4
		Density	31	151	573.2882	3	3209
		White (K-12)	31	21%	0.153095	1%	54%
		Hispanic (K-12)	31	59%	0.321372	1%	97%
		Native American (K-12)	31	16%	0.247475	0%	76%
		Eligible for lunch prog.	31	79%	0.121736	47%	101%
		LevyApproved	31	40%	0.260955	0%	94%
<b>3: Average</b>	59	K-12 enrollment	59	2928	2561	221	16410
		Density	59	139	158	5	1124
		White (K-12)	59	73%	10%	51%	93%
		Hispanic (K-12)	59	18%	11%	2%	45%
		Native American (K-12)	59	3%	4%	0%	30%
		Eligible for lunch prog.	59	50%	9%	33%	70%
		LevyApproved	59	85%	14%	32%	114%
4: Urban/Suburban, median to median high level of poverty	23	K-12 enrollment	23	15085	8319	2935	28782
		Density	23	2576	1206	528	4300
		White (K-12)	23	50%	14%	18%	74%
		Hispanic (K-12)	23	19%	10%	1%	53%
		Native American (K-12)	23	2%	4%	1%	18%
		Eligible for lunch prog.	23	51%	13%	32%	79%
		LevyApproved	23	92%	15%	30%	110%
5: Urban/Suburban, median to low level of poverty	44	K-12 enrollment	44	7354	5903	714	24727
		Density	44	692	921	54	4361
		White (K-12)	44	78%	9%	48%	92%
		Hispanic (K-12)	44	8%	3%	1%	15%
		Native American (K-12)	44	1%	2%	0%	9%
		Eligible for lunch prog.	44	26%	8%	7%	38%
		LevyApproved	44	97%	11%	73%	122%
6: Low density, median to high level of poverty	48	K-12 enrollment	48	455	446	47	2505
		Density	48	13	16	2	81
		White (K-12)	48	80%	12%	46%	96%
		Hispanic (K-12)	48	12%	11%	2%	51%
		Native American (K-12)	48	3%	5%	0%	32%
		Eligible for lunch prog.	48	62%	8%	49%	93%
		LevyApproved	48	57%	22%	0%	101%

## Appendix B

### Risk Scales

#### 1. "Perceived Availability of Drugs" risk scale:

1. If you wanted to get some beer, wine or hard liquor (for example, vodka, whiskey, or gin) how easy would it be for you to get some?
2. If you wanted to get some cigarettes, how easy would it be for you to get some?
3. If you wanted to get some marijuana, how easy would it be for you to go get some?
4. If you wanted to get a drug like cocaine, LSD, or amphetamines, how easy would it be for you to get some?

#### Laws and norms favorable to drug use:

1. How wrong would most adults in your community think it was for kids your age:
  - a. To use marijuana?
  - b. To drink alcohol?
  - c. To smoke cigarettes?
2. If a kid drank some beer, wine, or hard liquor (for example, vodka, whiskey or gin) in your neighborhood would he or she be caught by the police?
3. If a kid carried a handgun in your neighborhood would he or she be caught by the police?
4. If a kid smoked marijuana in your neighborhood would he or she be caught by the police?

#### Friends' use of drugs

Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your friends have:

1. Smoked cigarettes?
2. Tried beer, wine, or hard liquor (for example, vodka, whiskey or gin) when their parents didn't know about it?
3. Used marijuana?
4. Used LSD, cocaine, amphetamines, or other illegal drugs?



## Appendix C

**Table 2. Rates of substance use and risk factors for substance use in PFS and non-PFS communities over time – 10<sup>th</sup> grade students only. PFS cohorts 1 and 2 ONLY, clusters 3 only; Non CPWI communities and cluster 3 only - 10th graders only**

\*\*Chi-square sig p<.001 over time; \* Chi-square sig. p<.01 over time

		2002	2004	2006	2008	2010	2012	2014	2016
<b>Sample sizes</b>	<b>TOTAL</b>	<b>5,791</b>	<b>7,652</b>	<b>7,435</b>	<b>8,337</b>	<b>8,606</b>	<b>7,584</b>	<b>8,334</b>	<b>8,741</b>
	PFS	1,164	1,558	1,403	1,559	1,648	1,629	1,612	1,673
	Non-PFS	4,627	6,094	6,032	6,778	6,958	5,955	6,722	7,068
<b>Any alcohol use in past 30 days</b>	PFS**	1,129	1,544	1,388	1,545	1,631	1,607	1,571	1,637
	% "yes"	<b>37.6%</b>	<b>38.6%</b>	<b>36.2%</b>	<b>34.0%</b>	<b>31.9%</b>	<b>27.0%</b>	<b>25.8%</b>	<b>22.9%</b>
	Non-PFS**	4,530	5,977	5,889	6,669	6,846	5,846	6,629	6,884
	% "yes"	<b>34.8%</b>	<b>34.9%</b>	<b>33.5%</b>	<b>31.8%</b>	<b>29.1%</b>	<b>26.5%</b>	<b>23.4%</b>	<b>21.3%</b>
<b>Any binge drinking in past 2 weeks</b>	PFS**	1,118	1,537	709	1,539	1,612	1,593	1,563	1,614
	% "yes"	<b>24.5%</b>	<b>24.0%</b>	<b>21.7%</b>	<b>21.7%</b>	<b>20.5%</b>	<b>16.3%</b>	<b>15.0%</b>	<b>13.6%</b>
	Non-PFS**	4,514	5,951	2,862	6,624	6,800	5,797	6,600	6,823
	% "yes"	<b>22.4%</b>	<b>21.4%</b>	<b>19.5%</b>	<b>19.3%</b>	<b>17.9%</b>	<b>16.7%</b>	<b>14.2%</b>	<b>12.4%</b>
<b>Any marijuana use in past 30 days</b>	PFS*	1,126	1,541	1,390	1,546	1,630	1,600	1,565	1,629
	% "yes"	<b>24.5%</b>	<b>19.3%</b>	<b>19.1%</b>	<b>21.1%</b>	<b>22.3%</b>	<b>21.4%</b>	<b>22.5%</b>	<b>19.3%</b>
	Non-PFS**	4,527	5,973	5,886	6,667	6,842	5,839	6,614	6,863
	% "yes"	<b>21.5%</b>	<b>19.0%</b>	<b>17.5%</b>	<b>18.8%</b>	<b>20.5%</b>	<b>20.3%</b>	<b>20.4%</b>	<b>18.0%</b>
<b>30 misuse of painkillers</b>	PFS**	NA	NA	1,389	771	1,623	1,595	1,563	1,627
	% "yes"			<b>10.9%</b>	<b>8.7%</b>	<b>10.2%</b>	<b>6.7%</b>	<b>5.8%</b>	<b>5.4%</b>
	Non-PFS**	NA	NA	5,866	3,274	6,832	5,816	6,604	6,848
	% "yes"			<b>10.4%</b>	<b>10.1%</b>	<b>8.7%</b>	<b>7.1%</b>	<b>5.6%</b>	<b>4.7%</b>
<b>RISK: Perceived availability of drugs</b>	PFS**	568	780	721	780	811	805	793	824
	% "yes"	<b>38.7%</b>	<b>38.3%</b>	<b>30.5%</b>	<b>35.8%</b>	<b>37.9%</b>	<b>34.4%</b>	<b>31.0%</b>	<b>26.3%</b>
	Non-PFS**	2,284	3,060	2,978	3,351	3,457	2,941	3,312	3,456
	% "yes"	<b>38.0%</b>	<b>35.4%</b>	<b>33.8%</b>	<b>36.1%</b>	<b>36.3%</b>	<b>32.6%</b>	<b>29.1%</b>	<b>26.4%</b>
<b>RISK: Laws and norms favorable to drug use</b>	PFS**	569	781	720	784	818	809	797	834
	% "yes"	<b>43.2%</b>	<b>44.3%</b>	<b>40.6%</b>	<b>39.7%</b>	<b>35.8%</b>	<b>34.6%</b>	<b>35.5%</b>	<b>31.3%</b>
	Non-PFS**	2,288	3,072	2,990	3,354	3,470	2,966	3,341	3,491
	% "yes"	<b>45.4%</b>	<b>45.0%</b>	<b>43.3%</b>	<b>38.4%</b>	<b>39.1%</b>	<b>35.5%</b>	<b>36.8%</b>	<b>32.6%</b>
<b>RISK: Friends use of drugs</b>	PFS**	509	745	701	749	753	749	706	729
	% "yes"	<b>39.5%</b>	<b>33.4%</b>	<b>33.1%</b>	<b>28.6%</b>	<b>34.0%</b>	<b>30.3%</b>	<b>27.1%</b>	<b>20.2%</b>
	Non-PFS**	2,174	2,813	2,683	3,065	3,099	2,703	2,981	2,943