The Meth Project and Teen Meth Use
New Estimates from the National and State Youth Risk Behavior Surveys

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Abstract

Anderson (2010) used data from the Youth Risk Behavior Surveys to estimate the effect of the Montana Meth Project, an anti-methamphetamine advertising campaign, on meth use among high school students. He found little evidence that the campaign actually curbed meth use. In this note, we use data from the national and state Youth Risk Behavior Surveys for the period 1999 through 2011 to build upon the work of Anderson (2010). During this period, a total of eight states adopted anti-meth advertising campaigns. While our results are typically consistent with those of Anderson (2010), we do find some evidence that the Meth Project may have reduced meth use among white high school students.

JEL Codes: H75, I18, K42, M37
Key Words: Meth Project, Methamphetamine Use, Youth Risky Behavior, Anti-Drug Campaign

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"We brought the Meth Project to Georgia to stem the growing methamphetamine epidemic in our state, and we are seeing impressive results."

--Johnny Isakson, Republican Senator of Georgia

1. INTRODUCTION

In 2005, Montana adopted an anti-methamphetamine advertising campaign known as the Meth Project. The goal of this campaign is to reduce methamphetamine (meth) use by increasing the perceived risk and decreasing the perceived benefit of trying meth, promoting dialogue about meth between parents and teens, and stigmatizing use (Siebel and Mange 2009). The campaign relies primarily on graphic print impressions, radio and television ads, and highway billboards. The ads consist of disturbing images such as addicts tearing off their own skin, young girls selling their bodies to older men for meth, and meth-crazed teens beating their parents for money.[1]

Due to the apparent success of Montana's campaign, seven additional states have adopted their own Meth Projects (see Table 1).[2] In 2010, *Barron's* magazine listed the Meth Project as the third most effective philanthropy in the world (Siebel Scholars 2010). However, after accounting for preexisting downward trends in meth use, Anderson (2010) found little evidence of a relationship between the Montana Meth Project and meth use among high school students.[3]

Because of the focus on Montana, it is unclear whether the results from Anderson (2010) generalize. In an effort to examine whether the Meth Project was more successful elsewhere, we extend the Anderson (2010) analysis through 2011. Similar to Anderson (2010), after

[1] To view the Meth Project ads, visit http://montana.methproject.org/Our-Work/view-ads.php.

[2] The editorial board of the Star-Tribune, a major newspaper in Wyoming, was quoted as saying, "...the fact that Wyoming and six other states have launched programs similar to the Montana Meth Project shows plenty of people see it as something worth emulating (Star-Tribune Editorial Board 2010)."

[3] See Anderson (2010) for a detailed description of the Montana Meth Project. See Dobkin and Nicosia (2009) and Cunningham and Finlay (2013) for research on supply-side meth shocks.

accounting for preexisting downward trends in meth use, we find little evidence of a relationship between the Meth Project and meth use within our full sample. However, we do find some evidence that the Meth Project may have decreased meth use among white high school students.

2. DATA AND EMPIRICAL MODEL

The data for this study come from the national and state YRBS and cover the period 1999 through 2011.[4] The national YRBS is conducted biennially by the Centers for Disease Control and Prevention (CDC) and is representative of the population of U.S. high school students.[5] The state surveys are also school-based and mirror the national surveys in terms of content. Although the state surveys are coordinated by the CDC, they are typically administered by state education and health agencies.

Our analysis uses both of these data sources so that identification comes from as many Meth Project adoptions as possible. While intended to be nationally representative, not all 50 states contribute data to the national YRBS in any given year.[6] Between 1999 and 2011, 11 states contributed data to the national YRBS every year and six states contributed data before and after the adoption of their Meth Project (Arizona, Colorado, Georgia, Hawaii, Idaho, and Illinois). Appendix Table 1 illustrates the number of observations by year and state in the national YRBS analysis.

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[4] Anderson (2010) used national YRBS data through 2007 and Montana YRBS data through 2009. It is not possible to observe meth use prior to 1999 because this was the first year the YRBS asked respondents about meth use.

[5] Federal agencies use the national YRBS data to follow trends in adolescent behaviors such as eating and exercise habits, violence, sexuality, and substance use. These data have also been used by researchers to evaluate the impacts of state-level policies. For examples, see Tremblay and Ling (2005), Carpenter and Cook (2008), Carpenter and Stehr (2008), Cawley et al. (2007), and Anderson (2014).

[6] In order to link respondents to their state of residence, we obtained the restricted-use versions of the national YRBS.

Most states conducted their own version of the YRBS at some point between 1999 and 2011. We have obtained data from 45 states, seven of which conducted surveys before and after the adoption of their Meth Project (Arizona, Colorado, Georgia, Idaho, Illinois, Montana, and Wyoming).[7] Appendix Table 2 illustrates the number of observations each state contributed to the state YRBS analysis. In combination, the national and state YRBS data cover all states and the District of Columbia. All eight states with Meth Projects contributed data before and after the adoption of their anti-meth campaign.[8] Table 2 provides descriptive statistics for the national and state YRBS samples. Means are reported by whether a Meth Project was present in the respondent's state of residence during the year of the interview. On average, Meth Project states have lower rates of meth use, a lower percentage of black students enrolled in their high schools, and higher unemployment rates.

Figure 1 presents trends in meth use based on the combined national and state YRBS data. It is apparent that meth use has been trending smoothly downward in all states during the period under study. If the Meth Project had an effect, then we would expect to see an acceleration of this trend as states began adopting the campaign. Figure 1 provides no evidence to support this hypothesis. If anything, the decrease in meth use appears to have slowed among adopting states after 2005, the inaugural year of the Meth Project in Montana.

To examine the relationship between the Meth Project and meth use among youths in a more rigorous fashion, we exploit the temporal and spatial variation in the adoption of these

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[7] Roughly half of these states have given the CDC permission to release their data. To obtain the remaining data, direct requests were made to each state.

[8] In the combined national and state YRBS sample, we have full coverage for 5 of the 8 Meth Project states. Idaho did not participate in the national or state YRBS in 1999 and Colorado did not participate in the national or state YRBS in 1999, 2003, and 2007. In addition, we only have data on Hawaii for 1999 and 2009 from the national YRBS. Hawaii conducted a state YRBS in 1999, 2005, 2007, 2009, and 2011. Unfortunately, our attempts at obtaining these data were rebuffed.

campaigns and estimate a standard difference-in-differences model. Specifically, our estimating equation is:

$$(1) \qquad \textit{Meth use}_{ist} = \beta_0 + \beta_1 \textit{Meth Project}_{st} + \boldsymbol{X_{ist}\beta_2} + v_s + w_t + \Theta_s \cdot t + \varepsilon_{ist},$$

where *i* indexes individuals, *s* indexes states, and *t* indexes years. The dependent variable, $\textit{Meth use}_{ist}$, is equal to 1 if respondent *i* reported having ever used meth, and is equal to 0 otherwise. The vector $\boldsymbol{X_{ist}}$ includes individual-level controls for age, sex, race and grade, and the unemployment rate in respondent *i*'s state.[9] The vectors v_s and w_t represent state and year fixed effects, respectively, and state-specific linear time trends are represented by $\Theta_s \cdot t$. The variable of interest, $\textit{Meth Project}_{st}$, is an indicator for whether a Meth Project had been implemented by state *s* by year *t*.[10] All regressions are estimated as linear probability models and standard errors are corrected for clustering at the state level (Bertrand et al. 2004).[11]

3. RESULTS

Table 3 presents estimates of equation (1) for the national, state, and combined YRBS samples. For each sample, results from specifications with and without state-specific linear time trends are presented. Figure 1 clearly illustrates the importance of controlling for preexisting trends in meth use.

[9] The regressions based on the combined YRBS sample also include a dummy variable that indicates whether the respondent was sampled in the national YRBS or the state YRBS.

[10] This variable takes on fractional values during the year in which a Meth Project was adopted.

[11] Logit and probit models yielded similar results.

Using the state YRBS data and a specification without state-specific linear time trends, the adoption of a Meth Project is associated with a 1.53 percentage point decrease in the probability of meth use. The same specification yields a similar estimate using the combined YRBS data.[12] However, when state-specific linear time trends are included, these estimates become much smaller in magnitude and lose statistical significance.[13]

The state-specific linear time trends are included to avoid confounding the treatment effect with pre-treatment trends. However, when there are insufficient observations in the pre-treatment period, empirically disentangling the trends and the treatment effect becomes difficult (Wolfers 2006). To address this issue, we consider a series of sensitivity analyses in Table 4. Here, we restrict focus to treatment states with relatively more pre-treatment years of data. For example, in panel A of Table 4, we drop treated states with only one year of pre-Meth Project data; in panel C, we drop treated states with three or fewer years of pre-Meth Project data. In general, these results support the findings from Table 3.[14]

In Table 5, we consider whether the relationship between the Meth Project depends on age, gender, or race.[15] All estimates presented are based on specifications that include state-

[12] We also experimented with using the wild cluster bootstrap method suggested by Cameron et al. (2008) to produce t-statistics. Wild cluster bootstrap critical values provide an asymptotic refinement and may work better than other inference methods for OLS when the number of clusters is small. Both of the statistically significant effects shown in Table 3 became statistically insignificant at conventional levels when using the wild cluster bootstrap procedure.

[13] For the national YRBS analysis, we considered weighted regressions using the sample weights provided by the CDC. These results were similar to those reported in Table 3. Because the national and state YRBS data were not specifically designed to be pooled, we also experimented with including the interaction term, *Meth Project*National YRBS*, on the right-hand-side of the estimating equation, where *National YRBS* is equal to one if the respondent was part of the national YRBS sample and equal to zero if the respondent was part of the state YRBS sample. This interaction term was never statistically distinguishable from zero, quelling some concerns about the viability of combining the two data sets.

[14] It is also important to note that the national YRBS data set represents a highly unbalanced panel. We experimented with running our national YRBS analyses on a sample where only states with one or fewer missing years of data were included. These results were very similar to those shown in Table 3.

[15] Appendix Table 3 shows mean rates of meth use by age, gender, and race.

specific linear time trends. The results in panel A compare estimates for YRBS respondents who were under the age of 17 at the time of the interview with estimates for respondents who were 17 years of age or older. For both groups, the relationship between the Meth Project and meth use is consistently statistically insignificant.

Panel B of Table 5 provides estimates by gender. The relationship between the Meth Project and meth use among males is negative and statistically significant when based on the national YRBS data. In the state and combined samples, however, this relationship becomes statistically indistinguishable from zero.[16] There is no evidence that the Meth Project had an effect on female meth use.

Finally, the results in panel C of Table 5 provide estimates by race (i.e., white vs. non-white). The relationship between the Meth Project and meth use among white high school students is negative and statistically significant in the state YRBS sample.[17] While this relationship becomes statistically insignificant in the combined sample, this may simply be due to the relatively small number of observations contributed by the treated states in the national YRBS data. Consequently, we leave open the possibility that the Meth Project had an effect on white students. There is no evidence that the Meth Project had an effect on meth use among non-white students.[18]

[16] The statistically significant effect for males in the national YRBS sample became statistically insignificant when using the wild cluster bootstrap procedure described by Cameron et al. (2008). It is important to note that the coefficient estimates for males across the national and state YRBS samples are statistically indistinguishable from one another.

[17] The statistically significant effect for whites in the state YRBS sample became statistically insignificant when using the wild cluster bootstrap procedure described by Cameron et al. (2008). It is important to note that the coefficient estimates for whites across the national and state YRBS samples are statistically indistinguishable from one another.

[18] To further address issues with combining the national and state YRBS data sets, we collected population data from the National Cancer Institute's Surveillance Epidemiology and End Results Program (http://seer.cancer.gov/popdata/). We used these data to assign population weights to each respondent based on state of residence, age, gender, and race. The idea of weighting using these data is to better ensure representation at the

4. CONCLUSION

The Meth Project, an anti-methamphetamine advertising campaign, is intended to discourage meth use among young people. Since Montana established the first campaign in 2005, seven other states have adopted their own Meth Projects. Using data from the YRBS, Anderson (2010) found no evidence of a relationship between the Montana Meth Project and meth use among high school students.

We build upon the work of Anderson (2010) by using data from the national and state YRBS for the period 1999 through 2011 to examine the relationship between the Meth Project and meth use. During this period, eight states adopted anti-meth campaigns. While our results are typically consistent with those of Anderson (2010), we do find some evidence that the Meth Project may have reduced meth use among white high school students.

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national level when estimating regressions based on the pooled national and state YRBS samples. The results based on this exercise support the finding that the Meth Project has not decreased meth use among teens (see Appendix Table 4).

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Figure 1
Fraction Reporting Meth Use

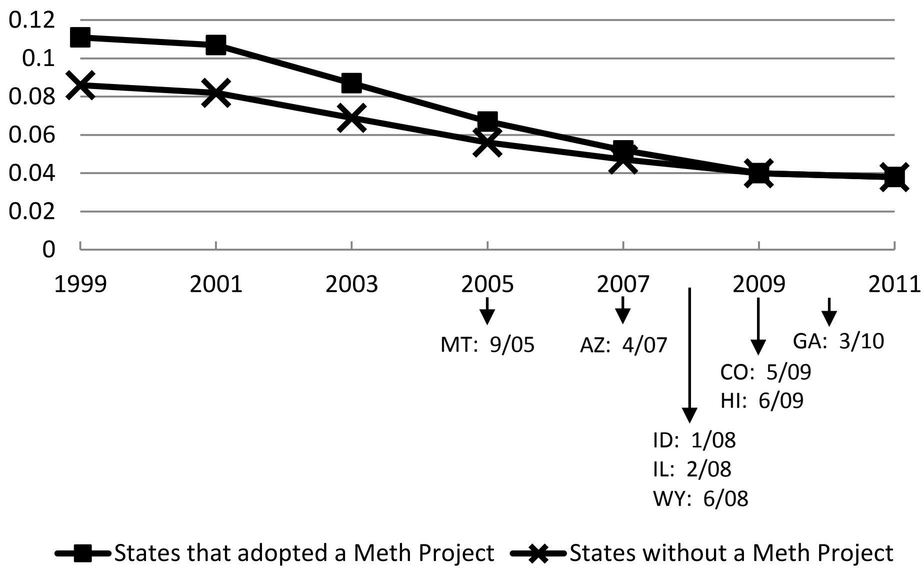

Table 1. Meth Projects, 1999-2011

	Effective Date
Arizona	April 2007
Colorado	May 2009
Georgia	March 2010
Hawaii	June 2009
Idaho	January 2008
Illinois	February 2008
Montana	September 2005
Wyoming	June 2008

Table 2. Descriptive Statistics: YRBS 1999-2011

	National YRBS		State YRBS		
	Meth Project = 1	*Meth Project* = 0	*Meth Project* = 1	*Meth Project* = 0	Description
Dependent Variable					
Meth use[a, b]	.0430	.0595	.0444	.0572	= 1 if respondent has ever used meth, = 0 otherwise
Independent Variable					
Age under 15[a, b]	.1030	.0944	.1104	.1328	= 1 if respondent is under 15, = 0 otherwise
Age 15	.2344	.2245	.2605	.2586	= 1 if respondent is 15, = 0 otherwise
Age 16	.2681	.2581	.2664	.2647	= 1 if respondent is 16, = 0 otherwise
Age 17[a, b]	.2433	.2620	.2333	.2233	= 1 if respondent is 17, = 0 otherwise
Age 18 or older[b]	.1512	.1610	.1294	.1205	= 1 if respondent is 18 or older, = 0 otherwise
Male[a, b]	.5030	.4892	.4927	.4865	= 1 if respondent is male, = 0 if respondent is female
Grade 9	.2483	.2449	.2804	.2819	= 1 if respondent is in grade 9, = 0 otherwise
Grade 10	.2515	.2463	.2674	.2684	= 1 if respondent is in grade 10, = 0 otherwise
Grade 11[b]	.2572	.2562	.2472	.2395	= 1 if respondent is in grade 11, = 0 otherwise
Grade 12[b]	.2410	.2514	.2023	.1931	= 1 if respondent is in grade 12, = 0 otherwise
Ungraded[b]	.0020	.0011	.0026	.0171	= 1 if grade is "ungraded", = 0 otherwise
Black[a, b]	.1291	.2215	.0732	.1359	= 1 if respondent is black, = 0 otherwise
White[a, b]	.3594	.4293	.6345	.6273	= 1 if respondent is white, = 0 otherwise
Other race[a, b]	.5116	.3492	.2923	.2368	= 1 if respondent is of another race, = 0 otherwise
Unemployment rate[a, b]	8.831	6.176	7.120	5.811	State unemployment rate
N	5,610	95,136	37,426	497,233	

[a] Statistically different at 5% level for national YRBS; [b] Statistically different at 5% level for state YRBS.

Notes: Means are based on unweighted data from the national and state YRBS

Table 3. Meth Projects and Youth Meth Use

	National YRBS		State YRBS		Combined National and State	
Meth Project	-.0105 (.0194)	-.0045 (.0081)	-.0153** (.0074)	-.0050 (.0064)	-.0162* (.0083)	-.0016 (.0059)
N	100,746	100,746	534,659	534,659	635,405	635,405
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
State-specific trends	No	Yes	No	Yes	No	Yes

* Statistically significant at 10% level; ** at 5% level; *** at 1% level.

Notes: Each cell represents a separate OLS estimate based on data from the YRBS (1999-2011); the covariates are listed in Table 2. The combined national and state YRBS regressions include a dummy variable indicating whether the respondent was sampled in the national YRBS or the state YRBS. Standard errors, corrected for clustering at the state level, are in parentheses.

Table 4. Sensitivity of Results to Sample Selection

	National YRBS		State YRBS		Combined National and State	
Panel A: Drop treated states with only one year of pre-Meth Project data						
Meth Project	-.0123	-.0086	-.0192**	-.0072	-.0161*	-.0016
	(.0212)	(.0081)	(.0082)	(.0065)	(.0083)	(.0059)
N	98,927	98,927	514,752	514,752	634,863	634,863
Treated states in sample	AZ, GA, ID, IL		GA, ID, MT, WY		AZ, CO, GA, ID, IL, MT, WY	
Panel B: Drop treated states with two or fewer years of pre-Meth Project data						
Meth Project	-.0112	-.0066	-.0192**	-.0072	-.0172**	-.0032
	(.0225)	(.0074)	(.0082)	(.0065)	(.0085)	(.0059)
N	98,271	98,271	514,752	514,752	629,457	629,457
Treated states in sample	AZ, GA, IL		GA, ID, MT, WY		AZ, GA, ID, IL, MT, WY	
Panel C: Drop treated states with three or fewer years of pre-Meth Project data						
Meth Project	-.0112	-.0066	-.0089	-.0047	-.0087	-.0006
	(.0225)	(.0074)	(.0060)	(.0080)	(.0073)	(.0064)
N	98,271	98,271	494,124	494,124	608,645	608,645
Treated states in sample	AZ, GA, IL		GA, ID, WY		AZ, GA, ID, IL, WY	
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
State-specific trends	No	Yes	No	Yes	No	Yes

* Statistically significant at 10% level; ** at 5% level; *** at 1% level.

Notes: Each cell represents a separate OLS estimate based on data from the YRBS (1999-2011); the covariates are listed in Table 2. The combined national and state YRBS regressions include a dummy variable indicating whether the respondent was sampled in the national YRBS or the state YRBS. Standard errors, corrected for clustering at the state level, are in parentheses.

Table 5. Meth Projects and Youth Meth Use by Age, Gender, and Race

	National YRBS		State YRBS		Combined National and State	
Panel A: Meth Use by Age						
	Age < 17	Age ≥ 17	Age < 17	Age ≥ 17	Age < 17	Age ≥ 17
Meth Project	-.0008	-.0058	-.0056	-.0045	-.0032	-.0015
	(.0069)	(.0155)	(.0048)	(.0093)	(.0042)	(.0085)
N	58,291	42,455	350,122	184,537	408,413	226,992
Panel B: Meth Use by Gender						
	Male	Female	Male	Female	Male	Female
Meth Project	-.0129**	.0066	-.0039	-.0065	-.0003	-.0032
	(.0063)	(.0143)	(.0063)	(.0072)	(.0060)	(.0068)
N	49,366	51,380	260,351	274,308	309,717	325,688
Panel C: Meth Use by Race						
	White	Non-white	White	Non-white	White	Non-white
Meth Project	-.0023	-.0012	-.0089**	.0040	-.0065	.0071
	(.0122)	(.0145)	(.0041)	(.0099)	(.0047)	(.0078)
N	42,855	57,891	335,649	199,010	378,504	256,901
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
State-specific trends	Yes	Yes	Yes	Yes	Yes	Yes

* Statistically significant at 10% level; ** at 5% level; *** at 1% level.

Notes: Each cell represents a separate OLS estimate based on data from the YRBS (1999-2011); the covariates are listed in Table 2. The combined national and state YRBS regressions include a dummy variable indicating whether the respondent was sampled in the national YRBS or the state YRBS. Standard errors, corrected for clustering at the state level, are in parentheses.

Appendix Table 1. Number of Observations by State-Year: National YRBS

	1999	2001	2003	2005	2007	2009	2011	Total
Alabama	59	310	647	…	481	1,055	314	2,866
Arizona*	131	408	344	281	*599*	*358*	*1,117*	3,238
Arkansas	…	…	266	…	416	298	…	980
California	2,479	2,184	1,723	1,545	2,099	2,789	1,858	14,677
Colorado*	…	655	…	…	…	*193*	*245*	1,093
Connecticut	…	…	…	233	…	…	…	233
Delaware	…	…	364	…	…	…	225	589
D.C.	…	…	…	…	…	…	306	306
Florida	860	1,060	1,498	535	740	225	1,145	6,063
Georgia*	810	486	420	1,833	347	1,315	*125*	5,336
Hawaii*	308	…	…	…	…	*234*	…	542
Idaho*	…	156	…	240	…	…	*260*	656
Illinois*	228	438	316	490	585	*1,489*	*990*	4,536
Indiana	…	177	417	170	400	…	270	1,434
Iowa	…	…	…	238	246	…	…	484
Kansas	…	…	328	277	…	199	301	1,105
Kentucky	…	…	…	531	359	…	214	1,104
Louisiana	621	…	688	157	…	427	…	1,893
Maine	197	203	196	…	…	…	…	596
Maryland	…	…	259	…	…	…	…	259
Massachusetts	…	253	212	256	711	…	289	1,721
Michigan	522	338	398	295	297	320	625	2,795
Minnesota	…	…	…	95	…	188	…	283
Mississippi	637	339	…	…	359	…	94	1,429
Missouri	554	463	264	102	345	84	343	2,155
Montana*	…	184	…	…	…	…	…	184
Nevada	…	236	…	…	…	386	207	829
New Jersey	235	219	305	313	686	479	113	2,350
New Mexico	…	155	104	…	220	601	…	1,080
New York	726	308	910	461	909	1,191	643	5,148
North Carolina	509	666	…	644	580	…	1,103	3,502
Ohio	561	224	297	277	…	…	…	1,359
Oklahoma	…	395	…	235	280	…	…	910
Oregon	…	184	…	268	…	246	…	698
Pennsylvania	485	…	316	418	210	1,050	434	2,913
Rhode Island	75	…	…	…	…	…	…	75
South Carolina	798	…	884	285	…	…	…	1,967
South Dakota	…	…	297	…	…	…	…	297
Tennessee	265	607	…	394	163	…	290	1,719
Texas	2,707	2,042	2,617	1,717	1,463	1,321	1,775	13,642
Utah	…	…	178	273	197	…	…	648
Vermont	…	…	256	…	…	…	…	256

Appendix Table 1. Number of Observations by State-Year: National YRBS

	1999	2001	2003	2005	2007	2009	2011	Total
Virginia	742	…	243	348	436	98	202	2,069
Washington	…	52	…	101	…	245	167	565
West Virginia	…	262	…	230	244	465	257	1,458
Wisconsin	536	235	178	241	178	682	654	2,704

Notes: States that adopted a Meth Project are denoted with a star superscript and post-adoption observations are italicized.

Appendix Table 2. Number of Observations by State-Year: State YRBS

	1999	2001	2003	2005	2007	2009	2011	Total
Alabama	2,038	1,537	1,063	1,075	…	1,442	1,322	8,477
Alaska	…	…	1,445	…	1,265	1,213	1,259	5,182
Arizona*	…	…	…	1,904	*1,655*	*1,483*	*1,899*	6,941
Arkansas	1,457	1,670	…	1,505	1,540	1,596	1,310	9,078
Colorado*	…	…	…	1,464	…	*1,445*	*1,404*	4,313
Connecticut	…	…	…	2,167	1,980	2,304	1,977	8,428
Delaware	2,317	2,844	2,950	2,607	2,344	2,220	2,152	17,434
Florida	…	4,109	3,952	4,412	…	…	…	12,473
Georgia*	…	…	2,045	1,698	2,371	1,812	*1,777*	9,703
Idaho*	…	1,684	1,698	1,429	1,378	*2,094*	*1,648*	9,931
Illinois*	…	…	…	…	2,311	*2,926*	*3,416*	8,653
Indiana	…	…	1,631	1,508	2,248	1,467	2,726	9,580
Iowa	…	…	…	1,351	1,418	…	1,511	4,280
Kansas	…	…	…	1,636	1,685	1,982	1,811	7,114
Kentucky	…	…	1,574	…	3,428	1,723	1,650	8,375
Louisiana	…	…	…	…	…	984	1,107	2,091
Maine	…	1,308	1,626	1,326	1,259	…	…	5,519
Maryland	…	…	…	1,382	1,479	1,579	2,718	7,158
Massachusetts	…	…	3,528	3,301	3,020	2,608	2,623	15,080
Michigan	2,602	3,501	3,376	3,195	3,414	3,281	4,083	23,452
Mississippi	1,594	1,783	1,465	…	1,553	1,751	1,792	9,938
Missouri	1,613	1,631	1,530	1,857	1,515	1,592	…	9,738
Montana*	2,881	2,582	2,669	*2,906*	*3,831*	*1,773*	*3,986*	20,628
Nebraska	…	…	2,869	3,681	…	…	…	6,550
Nevada	1,669	1,428	1,942	1,518	1,714	2,019	…	10,290
New Hampshire	…	…	1,312	1,249	1,577	1,453	1,358	6,949
New Jersey	…	2,028	…	1,480	…	1,694	1,617	6,819
New Mexico	…	…	…	…	2,523	4,849	5,638	13,010
New York	3,314	…	9,004	9,225	12,564	13,625	12,300	60,032
North Carolina	…	2,517	2,518	3,804	3,389	5,530	2,205	19,963
North Dakota	1,790	1,573	1,642	1,711	1,689	1,783	…	10,188
Ohio	2,021	…	1,183	1,372	2,419	…	…	6,995
Oklahoma	…	…	1,366	1,686	2,561	1,386	1,133	8,132
Pennsylvania	…	…	…	…	…	2,025	…	2,025
Rhode Island	…	1,361	1,776	2,303	…	…	…	5,440
South Carolina	4,552	…	…	1,265	1,204	1,054	1,404	9,479
South Dakota	1,645	1,591	1,795	1,557	1,572	2,115	1,499	11,774
Tennessee	…	…	1,919	1,525	2,017	2,166	2,574	10,201
Texas	…	6,933	…	4,088	3,106	3,427	4,009	21,563
Utah	1,477	1,043	1,418	1,518	1,910	1,541	1,652	10,559
Vermont	…	9,012	7,903	9,072	7,309	9,928	8,240	51,464

Appendix Table 2. Number of Observations by State-Year: State YRBS

	1999	2001	2003	2005	2007	2009	2011	Total
Virginia	…	…	…	…	…	…	1,360	1,360
West Virginia	1,467	…	1,724	1,348	1,351	1,553	2,112	9,555
Wisconsin	1,314	2,088	…	2,345	2,046	2,386	2,949	13,128
Wyoming*	1,624	2,712	1,516	2,440	2,142	*2,794*	*2,389*	15,617

Notes: States that adopted a Meth Project are denoted with a star superscript and post-adoption observations are italicized.

Appendix Table 3. Descriptive Statistics for *Meth Use* by Age, Gender, and Race

	National YRBS		State YRBS	
Panel A: Meth Use by Age				
	Age < 17	Age ≥ 17	Age < 17	Age ≥ 17
Meth use[a, b]	.0536	.0655	.0502	.0679
Panel B: Meth Use by Gender				
	Male	Female	Male	Female
Meth use[a, b]	.0658	.0517	.0640	.0490
Panel C: Meth Use by Race				
	White	Non-white	White	Non-white
Meth use[a]	.0687	.0511	.0562	.0565

[a] Statistically different at 5% level for national YRBS; [b] Statistically different at 5% level for state YRBS.

Notes: Means are based on unweighted data from the national and state YRBS.

Appendix Table 4. Population Weighted Analysis for the Combined National and State YRBS

Panel A: Full Sample

	Full Sample	
Meth Project	-.0030	-.0007
	(.0061)	(.0053)
N	635,405	635,405
State-specific trends	No	Yes

Panel B: Meth Use by Age

	Age < 17	Age ≥ 17
Meth Project	-.0066	.0063
	(.0064)	(.0055)
N	408,413	226,992
State-specific trends	Yes	Yes

Panel C: Meth Use by Gender

	Male	Female
Meth Project	-.0070	.0056
	(.0103)	(.0061)
N	309,717	325,688
State-specific trends	Yes	Yes

Panel D: Meth Use by Race

	White	Non-white
Meth Project	-.0028	.0107***
	(.0057)	(.0037)
	378,504	256,901
State-specific trends	Yes	Yes

* Statistically significant at 10% level; ** at 5% level; *** at 1% level.

Notes: Each cell represents a separate OLS estimate based on data from the YRBS (1999-2011). All models control for the covariates listed in Table 2, a dummy variable indicating whether the respondent was sampled in the national YRBS or the state YRBS, year fixed effects, and state fixed effects. Standard errors, corrected for clustering at the state level, are in parentheses.