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Tobacco and E-Cigarette Prevention and Cessation

Benefit-Cost & Meta-Analysis Results

December 2014

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The benefit-cost results in this document are current as of December 2014.
For the most up-to-date benefit-cost results, please visit our website.
http://www.wsipp.wa.gov/BenefitCost

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Table of contents:

Anti-smoking media campaign, youth effect

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Hopkins, et al. (2001) provides a useful definition of mass media campaigns that we use in determining whether a study fits within our meta-analysis. They define a mass media intervention as interventions "of an extended duration that use brief, recurring massages to inform and motivate individual to remain tobacco free." We append that definition only slightly to include interventions that motivate individuals to be become tobacco free—in addition to remain tobacco free—to include mass media interventions aimed at cessation as well as prevention.

Benefit-Cost Summary

Program benefits	
Participants	$1,535
Taxpayers	$813
Other (1)	$980
Other (2)	$70
Total	$3,398
Costs	($27)
Benefits minus cost	$3,371

Summary statistics	
Benefit to cost ratio	$125.82
Benefits minus costs	$3,371
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$39	$119	$20	$178
Labor market earnings (hs grad)	$1,514	$646	$749	$0	$2,909
Health care (smoking)	$20	$128	$112	$64	$324
Adjustment for deadweight cost of program	$0	$0	$0	($14)	($14)
Totals	$1,535	$813	$980	$70	$3,398

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

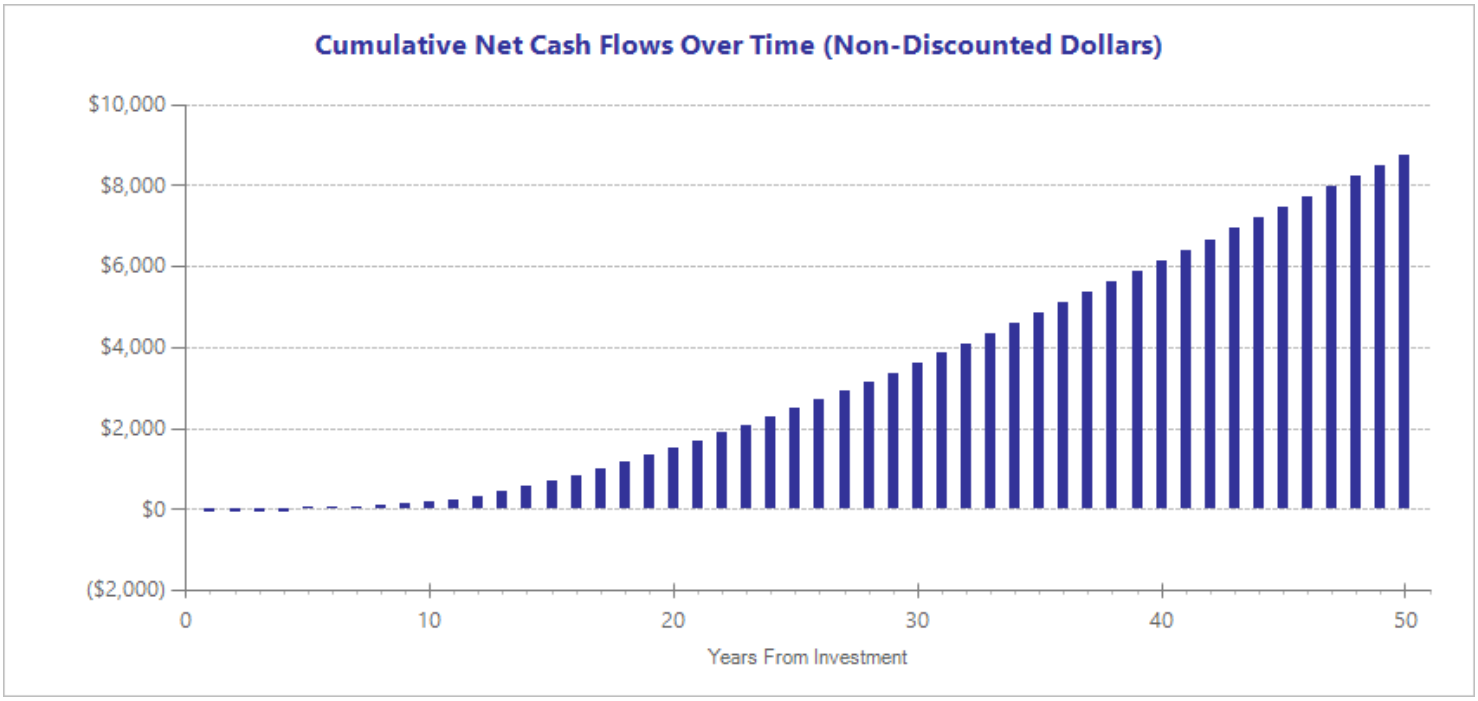
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$27	1	2012
Comparison costs	$0	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	($27)
Uncertainty (+ or - %)	20 %

Estimated weighted average costs based on (1) cost reported directly in the studies used in the meta analysis and (2) cost-effectiveness studies of media campaigns. We used an average cost based on the cost effectiveness studies and estimated this as the cost of study in the meta analysis if no cost was reported. Costs were weighted by the size of the study and then averaged.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	6	9045	-0.047	0.006	-0.047	0.017	13	-0.047	0.017	18
Smoking before end of middle school	Primary	2	2108	-0.294	0.001	-0.294	0.052	12	-0.294	0.052	15
Alcohol use before end of middle school	Primary	2	2108	-0.194	0.001	-0.194	0.048	12	-0.194	0.048	15
Cannabis use before end of middle school	Primary	2	2108	-0.254	0.001	-0.254	0.052	12	-0.254	0.052	15

Citations Used in the Meta-Analysis

Bauman, K.E., LaPrelle, J., Brown, J.D., Koch, G.G., & Padgett, C.A. (1991). The influence of three mass media campaigns on variables related to adolescent cigarette smoking: results of a field experiment. *American Journal of Public Health*, *81* (5), 597-604.

Flay, B.R., Miller, T.Q., Hedeker, D., Siddiqui, O., Britton, C.F., Brannon, B.R., . . . Dent, C. (1995). The television, school, and family smoking prevention and cessation project. VIII: Student outcomes and mediating variables. *Preventive Medicine*, *24* (1), 29-40.

Flynn, B.S., J.K. Worden, R.H. Secker-Walker, G.J. Badger, B.M. Geller, and M.C. Costanza. (1992). Prevention of cigarette smoking through mass media intervention and school programs. *American Journal of Public Health*, *82* (6), 827-834.

Hafstad, A., Aarø, L.E., Engeland, A., Andersen, A., Langmark, F., & Stray-Pedersen, B. (1997). Provocative appeals in anti-smoking mass media campaigns targeting adolescents--the accumulated effect of multiple exposures. *Health Education Research*, *12* (2), 227-236.

Linkenbach, J.W., & Perkins, H.W. (2003). *Most of us are tobacco free: An eight-month social norms campaign reducing youth initiation of smoking in Montana.* In Perkins, H., (Ed.), The social norms approach to preventing school and college age substance abuse: A handbook for educators, counselors, and clinicians (pp. 224-234). San Francisco, CA: Jossey-Bass.

Slater, M.D., Kelly, K.J., Edwards, R.W., Thurman, P.J., Plested, B.A., Keefe, T.J., Lawrence, F.R., ... Henry, K.L. (2006). Combining in-school and community-based media efforts: reducing marijuana and alcohol uptake among younger adolescents. *Health Education Research*, *21*(1), 157-67.

Solomon, L.J., Bunn, J.Y., Flynn, B.S., Pirie, P.L., Worden, J.K., & Ashikaga, T. (2009). Mass media for smoking cessation in adolescents. *Health Education & Behavior*, *36*(4), 642-659.

Enforcement of tobacco age-of-sale laws

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Age-of-sale laws are policies that aim to reduce supply of tobacco to youth, setting a minimum age of 18 for tobacco possession. Stricter enforcement of these laws includes increased compliance checks and fines to retailers who are caught selling tobacco to minors. These policies may also include minimal education to merchants about the laws and/or publicity about of the enforcement campaign.

Benefit-Cost Summary

Program benefits	
Participants	$1,325
Taxpayers	$697
Other (1)	$125
Other (2)	$147
Total	$2,293
Costs	($6)
Benefits minus cost	$2,288

Summary statistics	
Benefit to cost ratio	$399.16
Benefits minus costs	$2,288
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$1,302	$555	$0	$78	$1,936
Health care (smoking)	$22	$142	$125	$71	$360
Adjustment for deadweight cost of program	$0	$0	$0	($3)	($3)
Totals	$1,325	$697	$125	$147	$2,293

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

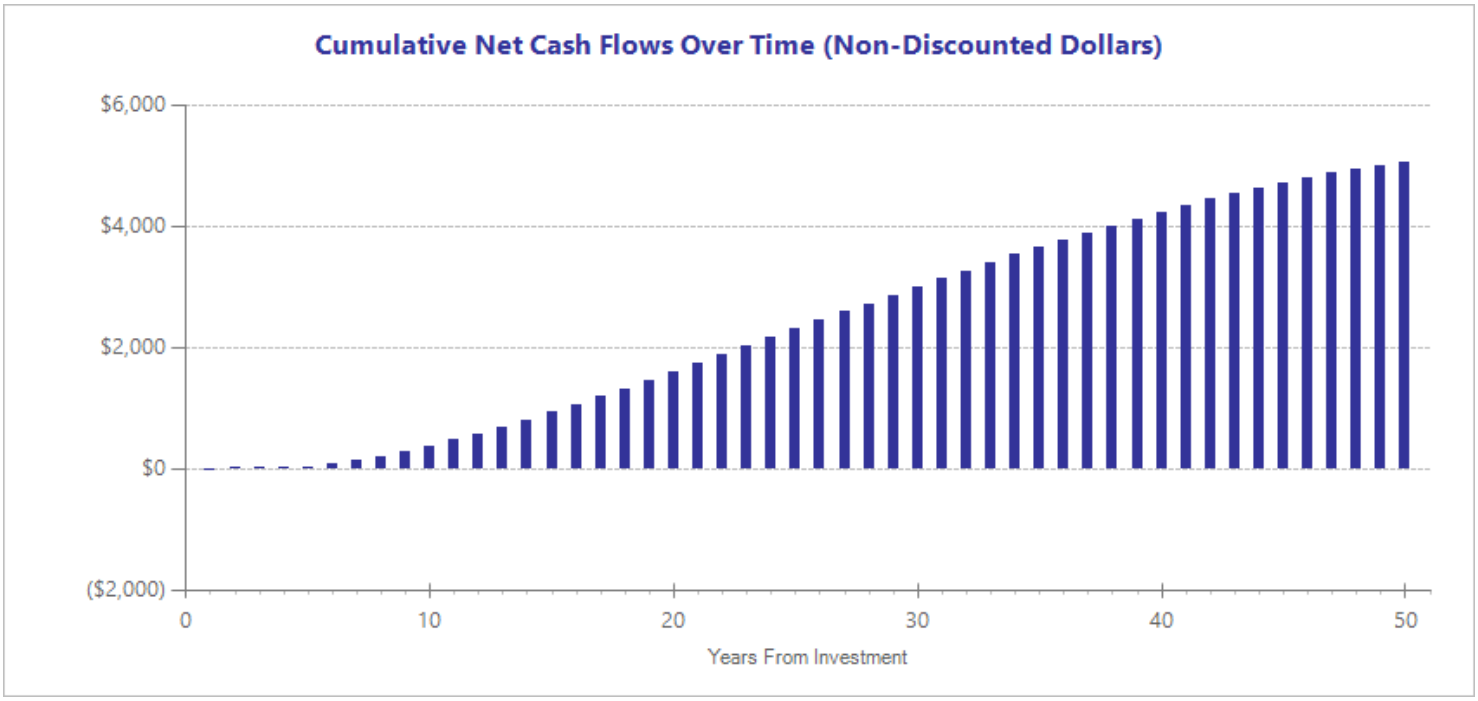
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$5	1	2001
Comparison costs	$0	1	2001

Summary statistics	
Present value of net program costs (in 2013 dollars)	($6)
Uncertainty (+ or - %)	10 %

Estimated as cost per youth smoker. Estimates of costs for compliance checks and outlet density per youth smoker from DiFranza, J.R., Peck, R.M., Radecki, T.E., & Savageau, J.A. (2001). What is the potential cost-effectiveness of enforcing a prohibition on the sale of tobacco to minors? Preventive medicine, 32(2), 168-174.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	2	6283	-0.114	0.002	-0.114	0.036	15	-0.114	0.036	18

Citations Used in the Meta-Analysis

Forster, J.L. (1998). The effects of community policies to reduce youth access to tobacco. *American Journal of Public Health*, *88*(8), 1193-1198.

Tutt, D., Bauer, L., & Difranza, J. (2009). Restricting the retail supply of tobacco to minors. *Journal of Public Health Policy*, *30*(1), 68-82.

Anti-smoking media campaigns, adult effect

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Hopkins, et al. (2001) provides a useful definition of mass media campaigns that we use in determining whether a study fits within our meta-analysis. They define a mass media intervention as interventions "of an extended duration that use brief, recurring massages to inform and motivate individual to remain tobacco free." We append that definition only slightly to include interventions that motivate individuals to be become tobacco free—in addition to remain tobacco free—to include mass media interventions aimed at cessation as well as prevention.

Benefit-Cost Summary

Program benefits	
Participants	$1,083
Taxpayers	$530
Other (1)	$64
Other (2)	$223
Total	$1,899
Costs	($35)
Benefits minus cost	$1,865

Summary statistics	
Benefit to cost ratio	$55.38
Benefits minus costs	$1,865
Probability of a positive net present value	89 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$1,071	$457	$0	$204	$1,732
Health care (smoking)	$12	$73	$64	$36	$185
Adjustment for deadweight cost of program	$0	$0	$0	($17)	($17)
Totals	$1,083	$530	$64	$223	$1,899

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$34	1	2012
Comparison costs	$0	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	($35)
Uncertainty (+ or - %)	20 %

Estimated weighted average costs based on (1) cost reported directly in the studies used in the meta analysis and (2) cost-effectiveness studies of media campaigns. We used an average cost based on the cost effectiveness studies and estimated this as the cost of study in the meta analysis if no cost was reported. Costs were weighted by the size of the study and then averaged.

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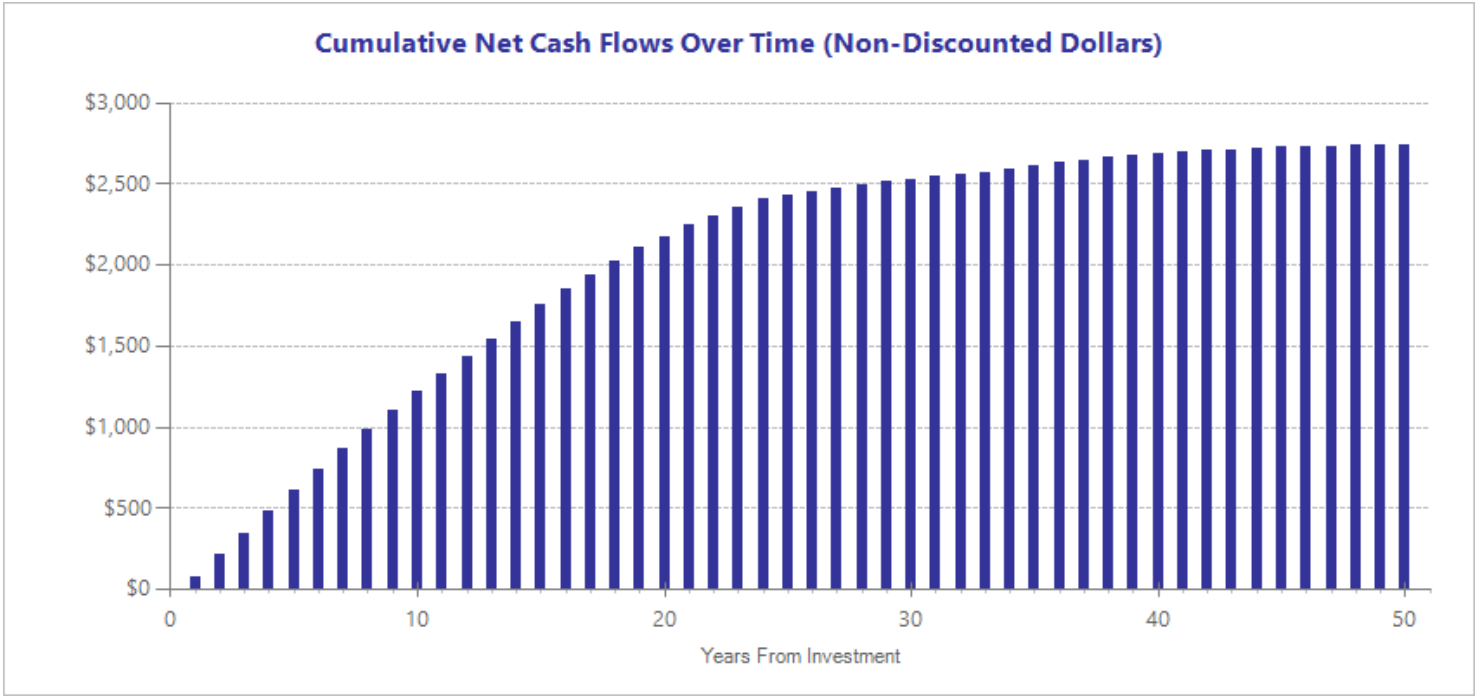


Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	7	3577	-0.060	0.262	-0.060	0.054	42	-0.060	0.054	43

Citations Used in the Meta-Analysis

Dwyer, T., Pierce, J.P., Hannam, C.D., & Burke, N. (1986). Evaluation of the Sydney "Quit. For Life" anti-smoking campaign. Part 2. Changes in smoking prevalence. *The Medical Journal of Australia*, *144* (7), 344-347.

Etter, J.F. (2007). Informing smokers on additives in cigarettes: A randomized trial. *Patient Education and Counseling*, *66* (2), 188-191.

Ledwith, F. (1984). Immediate and delayed effects of postal advice on stopping smoking. *Health Bulletin*, *42* (6), 332-44.

Meyer, A.J., Nash, J.D., McAlister, A.L., Maccoby, N., & Farquhar, J.W. (1980). Skills training in a cardiovascular health education campaign. *Journal of Consulting and Clinical Psychology*, *48* (2), 129-142.

Osler, M., & Jespersen, N.B. (1993). The effect of a community-based cardiovascular disease prevention project in a Danish municipality. *Danish Medical Bulletin*, *40* (4), 485-489.

Steenkamp, H.J., Jooste, P.L., Jordaan, P.C., Swanepoel, A.S., & Rossouw, J.E. (1991). Changes in smoking during a community-based cardiovascular disease intervention programme. The Coronary Risk Factor Study. *South African Medical Journal*, *79* (5), 250-253.

Sutton, S.R., & Hallett, R. (1987). Experimental evaluation of the BBC TV series "So You Want To Stop Smoking?". *Addictive Behaviors*, *12*(4), 363-366.

Access to tobacco quitlines

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Quitlines offer telephone counseling, frequently with nicotine replacement, to assist clients to quit smoking. Number of calls offered varies from one to five, depending on insurance plans.

Benefit-Cost Summary

Program benefits	
Participants	$3,942
Taxpayers	$2,017
Other (1)	$316
Other (2)	$27,161
Total	$33,436
Costs	($211)
Benefits minus cost	$33,225

Summary statistics	
Benefit to cost ratio	$158.44
Benefits minus costs	$33,225
Probability of a positive net present value	98 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$3,885	$1,657	$0	$27,086	$32,629
Health care (smoking)	$57	$360	$316	$181	$914
Adjustment for deadweight cost of program	$0	$0	$0	($106)	($106)
Totals	$3,942	$2,017	$316	$27,161	$33,436

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

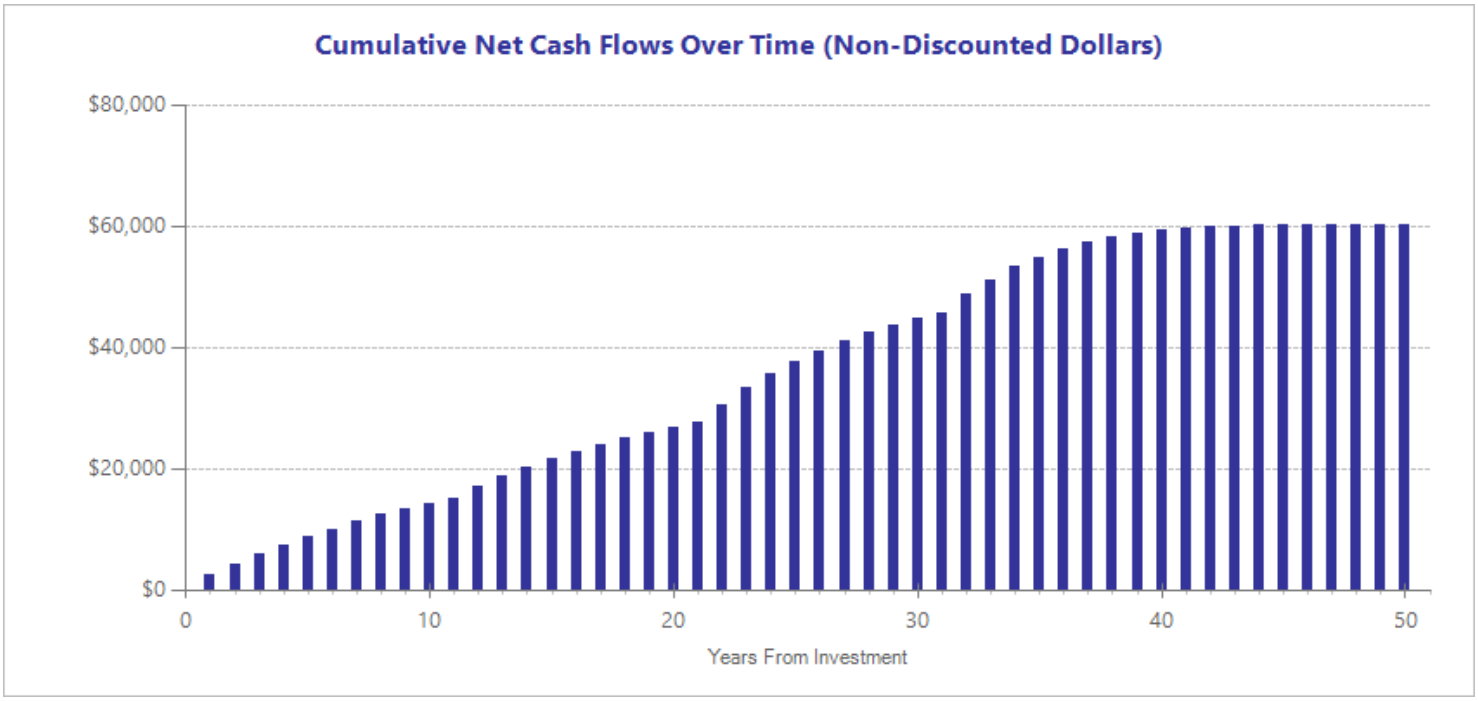
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$214	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($211)
Uncertainty (+ or - %)	10 %

Medicaid (and many private health insurance programs) fund quitlines at up to five calls and nicotine replacement therapy to about 1/4 of callers. Reimbursement at $205 per person. (Email from Tonya Nichols at HCA and fee schedule for physician related services, code S9453).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	5	4612	-0.253	0.097	-0.253	0.153	54	-0.300	0.150	55

Citations Used in the Meta-Analysis

An, L.C., Zhu, S.H., Nelson, D.B., Arikian, N.J., Nugent, S., Partin, M.R., & Joseph, A.M. (2006). Benefits of telephone care over primary care for smoking cessation: a randomized trial. *Archives of Internal Medicine*, *166*(5), 536-42.

Joyce, G.F., Niaura, R., Maglione, M., Mongoven, J., Larson-Rotter, C., Coan, J., Lapin, P., ... Morton, S. (2008). *The effectiveness of covering smoking cessation services for Medicare beneficiaries.* Blackwell Science Inc.

McFall, S.L., Michener, A., Rubin, D., Flay, B.R., Mermelstein, R.J., Burton, D., Jelen, P., ... Warnecke, R.B. (1993). The effects and use of maintenance newsletters in a smoking cessation intervention. *Addictive Behaviors*, *18* (2), 151-158.

Orleans, C.T., Schoenbach, V.J., Wagner, E.H., Quade, D., Salmon, M.A., Pearson, D.C., . . . Kaplan, B.H. (1991). Self-help quit smoking interventions: Effects of self-help materials, social support instructions, and telephone counseling. *Journal of Consulting and Clinical Psychology*, *59* (3), 439-448.

Ossip-Klein, D.J., Giovion, G.A., Megahed, N. Black, P.M., Emont, S.L., Stiggins, J., Shulman, E. Moore, L. (1991) Effects of a smokers' hotline: Results of a 10-county self-help trial. *Journal of Consulting and Clinical Psychology*, *59*(2), 325-332.

Computer-based programs for smoking cessation

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Computer-based smoking cessation programs use either internet or software to assist smokers in their quit attempt. Programs have been targeted at both adolescents and adults. Generally, the programs involve selecting a quit date and provide tailored information to participants to help with quitting and maintenance of smoking abstinence.

Benefit-Cost Summary

Program benefits	
Participants	$11,544
Taxpayers	$5,650
Other (1)	$684
Other (2)	$12,922
Total	$30,799
Costs	($39)
Benefits minus cost	$30,760

Summary statistics	
Benefit to cost ratio	$782.07
Benefits minus costs	$30,760
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$11,421	$4,871	$0	$12,553	$28,845
Health care (smoking)	$123	$779	$684	$389	$1,974
Adjustment for deadweight cost of program	$0	$0	$0	($20)	($20)
Totals	$11,544	$5,650	$684	$12,922	$30,799

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

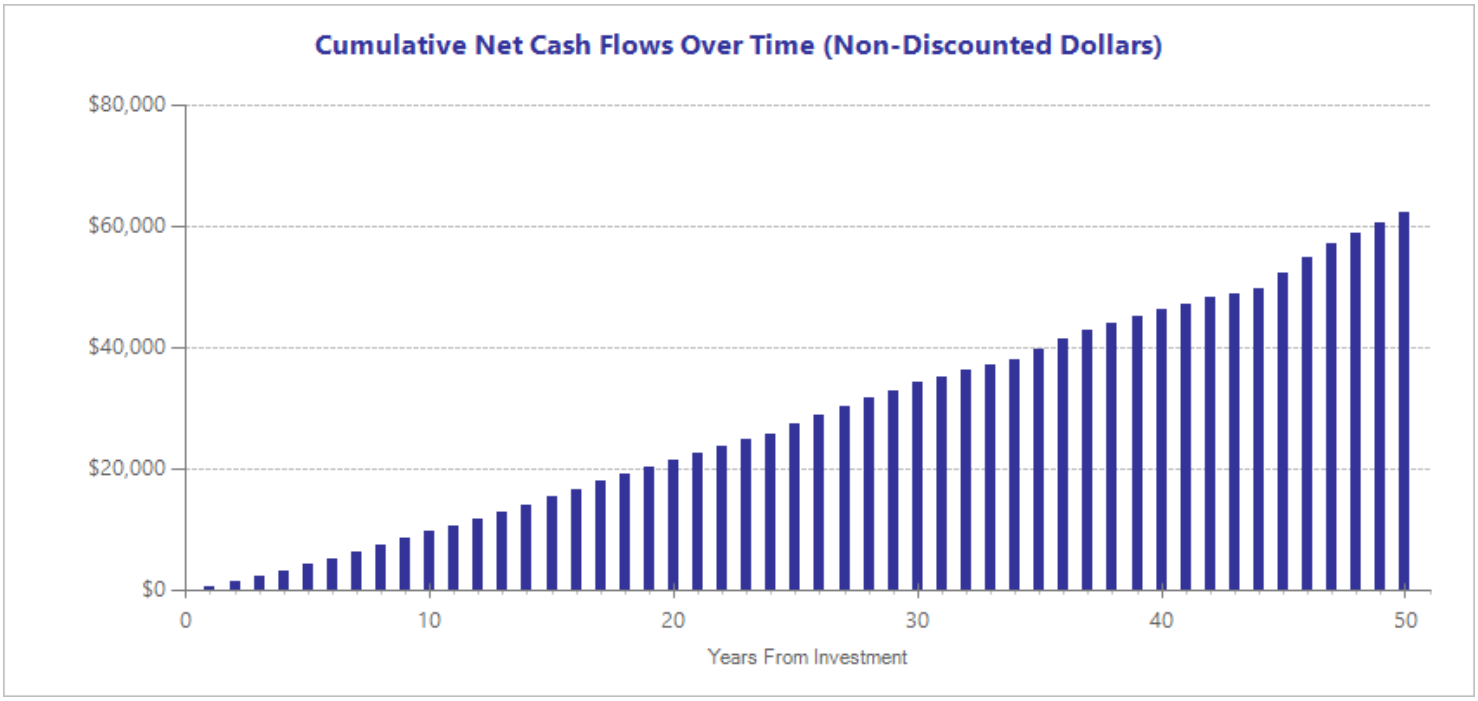
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$40	1	2012
Comparison costs	$1	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	($39)
Uncertainty (+ or - %)	10 %

From Graham, A.L., Chang, Y., Fang, Y., Cobb, N.K., Tinkelman, D.S., Niaura, R.S., Abrams, D. & Mandelblatt, J.S. (2012). Cost-effectiveness of internet and telephone treatment for smoking cessation: an economic evaluation of The iQUITT Study. Tobacco control. I used their estimate for the cost of an enhanced website, as most interventions were interactive websites. I used the static website for control costs, as control group either received static website, no intervention, or a self-help brochure.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	7	1434	-0.342	0.001	-0.335	0.082	31	-0.335	0.082	41

Citations Used in the Meta-Analysis

An, L.C., Klatt, C., Perry, C.L., Lein, E.B., Hennrikus, D.J., Pallonen, U.E., . . . Ahluwalia, J.S. (2008). The RealU online cessation intervention for college smokers: A randomized controlled trial. *Preventive Medicine*, *47*(2), 194-199.

Brendryen, H., Drozd, F., & Kraft, P. (2008). A digital smoking cessation program delivered through internet and cell phone without nicotine replacement (happy ending): Randomized controlled trial. *Journal of Medical Internet Research*, *10*(5)

Fritz, D.J., Hardin, S.B., Gore, P.A.J., & Bram, D. (2008). A computerized smoking cessation intervention for high school smokers. *Pediatric Nursing*, *34*(1), 13-17.

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Hollis, J.F., Polen, M.R., Whitlock, E.P., et al. (2005). Teen reach: outcomes from a randomized, controlled trial of a tobacco reduction program for teens seen in primary medical care. *Pediatrics*, *115*(4): 981-989.

Oenema, A., Brug, J., Dijkstra, A., Weerdt, I., & Vries, H. (2008). Efficacy and use of an internet-delivered computer-tailored lifestyle intervention, targeting saturated at intake, physical activity and smoking cessation: a randomized controlled trial. *Annals of Behavioral Medicine*, *35*(2), 125-135.

Woodruff, S.I., Conway, T.L., Edwards, C.C., Elliott, S.P., & Crittenden, J. (2007). Evaluation of an Internet virtual world chat room for adolescent smoking cessation. *Addictive Behaviors*, *32*(9), 1769-1786

Text messaging programs for smoking cessation

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Text message-based smoking cessation interventions use short message service (SMS) to support smokers in quit attempts. Generally, the programs help participants set a quit date, begin with a pre-quit date motivational stage, and support the smoker after the quit date. Many of the interventions feature interactive components such as a craving helpline to receive instant support, or check-ins to assess the participant's stage of change.

Benefit-Cost Summary

Program benefits	
Participants	$6,565
Taxpayers	$3,208
Other (1)	$384
Other (2)	$7,912
Total	$18,069
Costs	($51)
Benefits minus cost	$18,018

Summary statistics	
Benefit to cost ratio	$351.58
Benefits minus costs	$18,018
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$6,496	$2,771	$0	$7,719	$16,985
Health care (smoking)	$69	$438	$384	$219	$1,110
Adjustment for deadweight cost of program	$0	$0	$0	($26)	($26)
Totals	$6,565	$3,208	$384	$7,912	$18,069

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

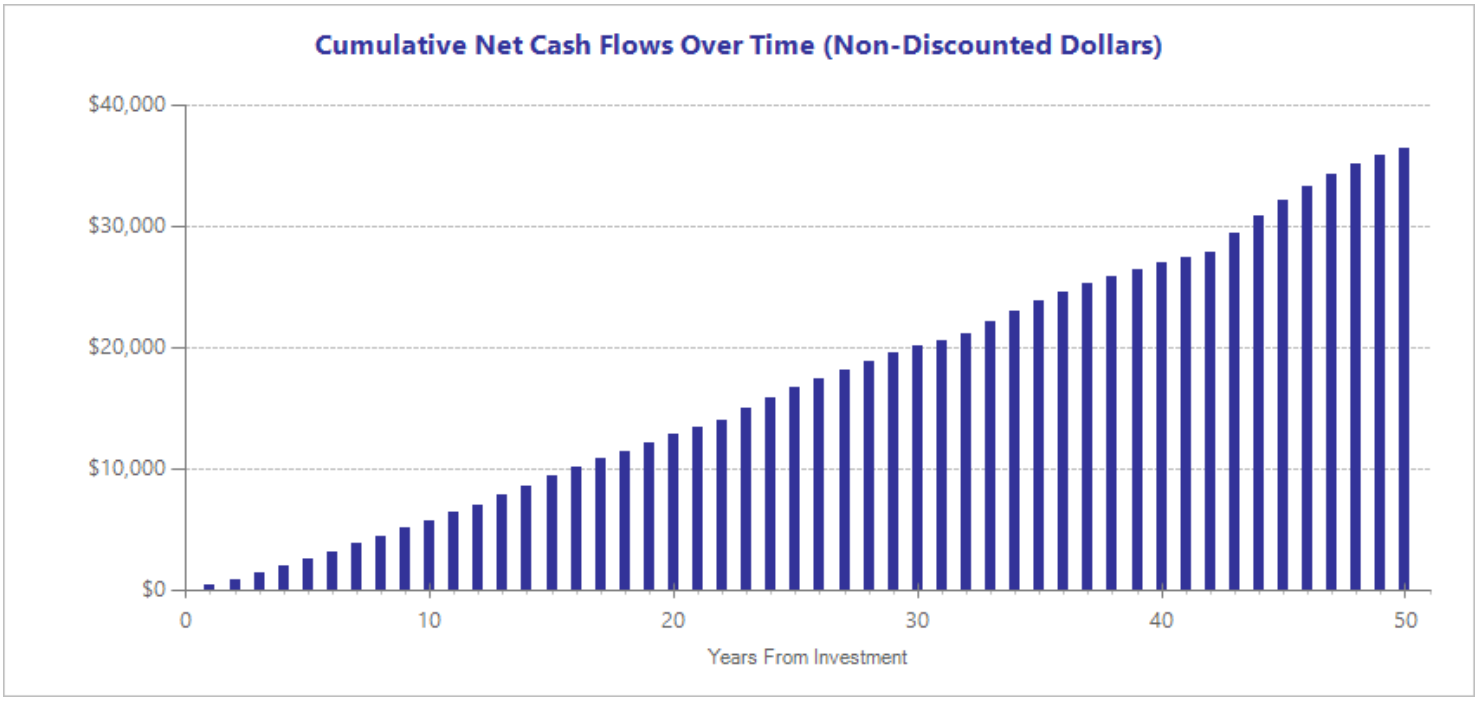
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$52	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($51)
Uncertainty (+ or - %)	10 %

Mid-point estimate from two articles: Guerriero. (2013). The cost-effectiveness of smoking cessation support delivered by mobile phone text messaging: Txt2stop.The European Journal of Health Economics, 14(5), 789-797 and Wells et al. (2012). Cost-effectiveness analysis of a mobile phone SMS text-based smoking cessation intervention. University of Toronto Medical Journal, 89(3), 160-165.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	9	4931	-0.209	0.001	-0.189	0.061	33	-0.189	0.061	43

Citations Used in the Meta-Analysis

Abroms, L.C., Boal, A.L., Simmens, S.J., Mendel, J.A., & Windsor, R.A. (2014). A randomized trial of Text2Quit: A text messaging program for smoking cessation. *American Journal of Preventive Medicine*, *47*(3), 242-50.

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Haug, S., Meyer, C., Schorr, G., Bauer, S., & John, U. (2009). Continuous individual support of smoking cessation using text messaging: a pilot experimental study. *Nicotine & Tobacco Research*, *11* (8), 915-23.

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More intensive tobacco quitlines (compared to less intensive quitlines)

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Quitlines offer telephone counseling, frequently with nicotine replacement, to assist clients to quit smoking. In these studies, the offer of multiple calls was compared with a single call to the quitline.

Benefit-Cost Summary

Program benefits	
Participants	$2,855
Taxpayers	$1,390
Other (1)	$162
Other (2)	$5,295
Total	$9,702
Costs	($128)
Benefits minus cost	$9,574

Summary statistics	
Benefit to cost ratio	$75.68
Benefits minus costs	$9,574
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$2,825	$1,205	$0	$5,267	$9,297
Health care (smoking)	$29	$185	$162	$93	$470
Adjustment for deadweight cost of program	$0	$0	$0	($64)	($64)
Totals	$2,855	$1,390	$162	$5,295	$9,702

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

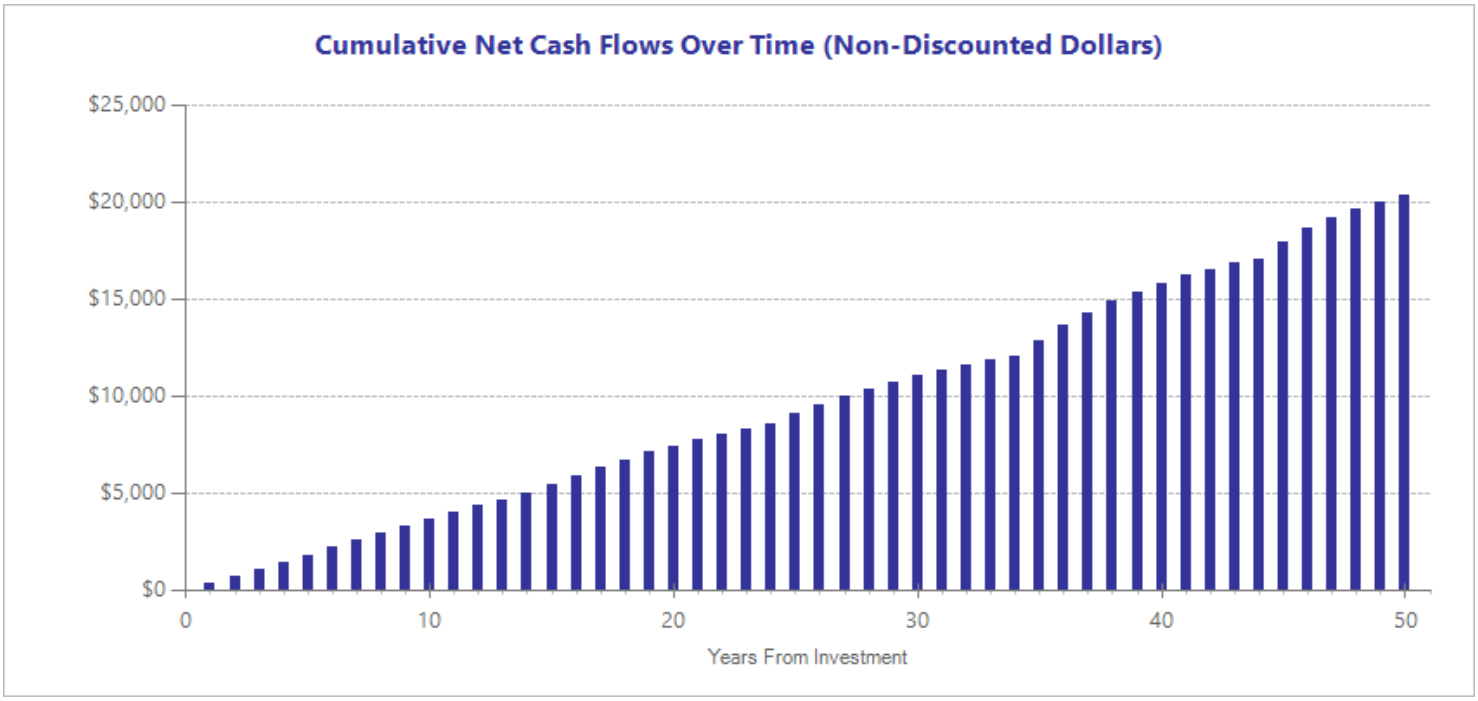
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$214	1	2014
Comparison costs	$84	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($128)
Uncertainty (+ or - %)	10 %

Medicaid (and many private health insurance programs) fund quitlines at up to five calls and nicotine replacement therapy (NRT) to about 1/4 of callers. Reimbursement at $205 per person. (Email from Tonya Nichols at HCA and fee schedule for physician related services, code S9453). Comparison is the cost DOH pays for a single call for uninsured residents of Washington, including NRT to about 1/4 of all callers (Email from Joella Pyatt, Oct 18, 2014)

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	13	15098	-0.146	0.001	-0.146	0.022	41	-0.100	0.020	42

Citations Used in the Meta-Analysis

Borland, R., Segan, C.J., Livingston, P.M., & Owen, N. (2001). The effectiveness of callback counselling for smoking cessation: a randomized trial. *Addiction*, *96*(6), 881-9.

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Project EX

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Project EX is a school-based cessation program for youth. The program consists of eight sessions for smokers trying to quit. One version of the program implements the program as a clinic within the school. Project EX-4 is implemented as a classroom-based intervention and all students (smokers and non-smokers) receive the intervention. In all available evaluations, the program was implemented in continuation high schools. The program includes a "train-the-trainer" component and generally is implemented by health educators.

Benefit-Cost Summary

Program benefits	
Participants	$1,546
Taxpayers	$819
Other (1)	$150
Other (2)	$996
Total	$3,511
Costs	($58)
Benefits minus cost	$3,452

Summary statistics	
Benefit to cost ratio	$60.13
Benefits minus costs	$3,452
Probability of a positive net present value	86 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	$1,519	$648	$0	$941	$3,107
Health care (smoking)	$27	$171	$150	$85	$433
Adjustment for deadweight cost of program	$0	$0	$0	($29)	($29)
Totals	$1,546	$819	$150	$996	$3,511

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

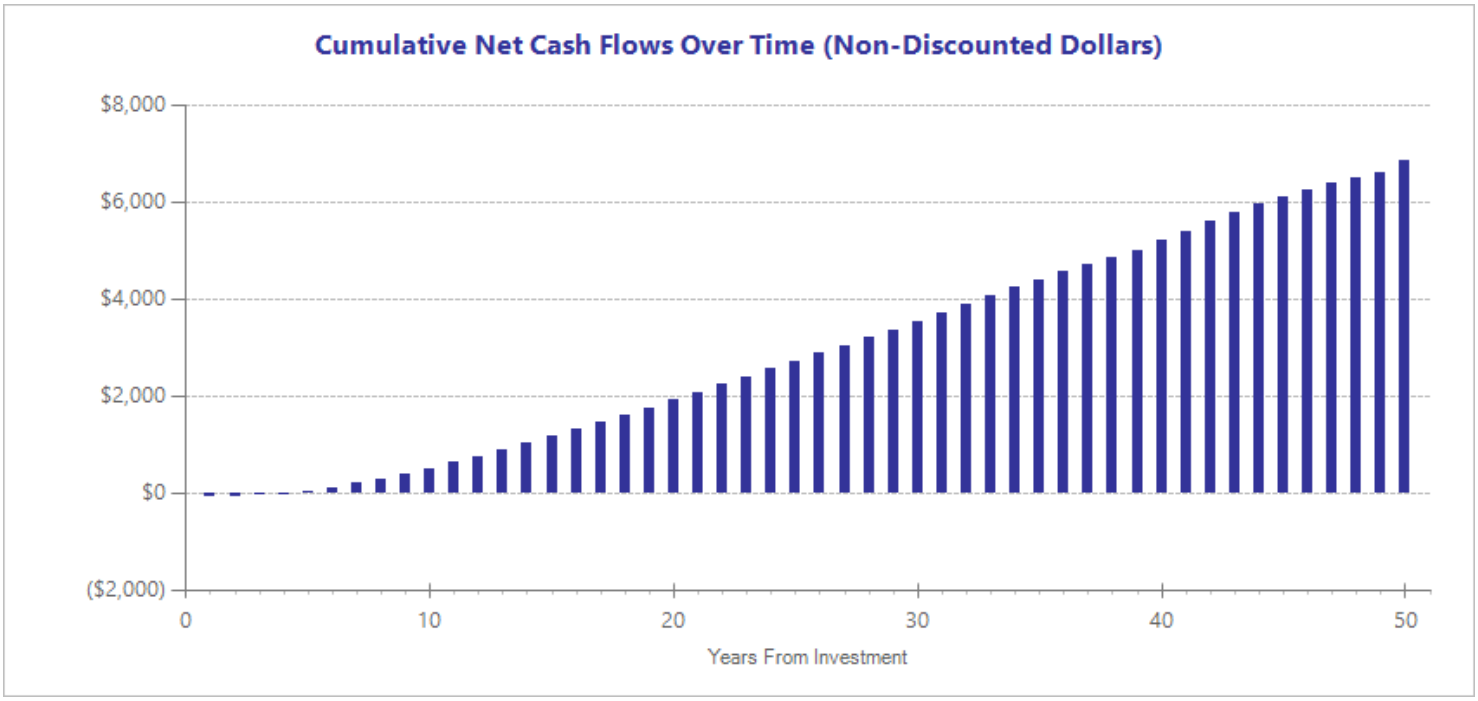
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$59	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($58)
Uncertainty (+ or - %)	10 %

Estimated from The National Registry of Evidence-based Programs and Practices.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	2	698	-0.338	0.010	-0.128	0.131	17	-0.128	0.131	18

Citations Used in the Meta-Analysis

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10% increase in cigarette tax (effect on youth)

Literature review updated December 2014.

Program Description: We reviewed all available research studies on the degree to which changing cigarette taxes, and thereby cigarette retail prices, affects the prevalence of cigarette smoking among youth.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	9	409686	-0.009	0.001	-0.009	0.000	16	-0.009	0.000	18

Citations Used in the Meta-Analysis

Carpenter, C., & Cook, P.J. (2008). Cigarette taxes and youth smoking: New evidence from national, state, and local Youth Risk Behavior Surveys. *Journal of Health Economics*, *27*(2), 287-299.

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DeCicca, P., Kenkel, D., & Mathios, A. (2002). Putting out the fires: Will higher taxes reduce the onset of youth smoking? *Journal of Political Economy Chicago*, *110*, 144-169.

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Gruber, J. & Zinman, J. (2000). *Youth smoking in the U.S.: Evidence and implications. NBER Working Paper No. w7780.* Cambridge, MA: National Bureau of Economic Research, Inc.

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10% increase in cigarette tax (effect on adults)

Literature review updated December 2014.

Program Description: We reviewed all available research studies on the degree to which changing cigarette taxes, and thereby cigarette retail prices, affects the prevalence of cigarette smoking among adults.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	21	6507706	-0.004	0.001	-0.004	0.002	45	-0.004	0.002	55

Citations Used in the Meta-Analysis

Wasserman, J., W.G. Manning, J.P. Newhouse, and J.D. Winkler. (1991). The effects of excise taxes and regulations on cigarette smoking. *Journal of Health Economics*, *10*(1), 43-64.

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Tauras, J.A. (2004). Public policy and some-day smoking among adults. *Journal of Applied Econoimcs*, *7*(1), 137-162.

Tauras, J.A., Chaloupka, F.J., & National Bureau of Economic Research. (1999). *Price, clean indoor air laws, and cigarette smoking: Evidence from longitudinal data for young adults.* Cambridge, MA: National Bureau of Economic Research.

Tauras, J.A. (2006). Smoke-free air laws, cigarette prices, and adult cigarette demand. *Economic Inquiry*, *44*,(2), 333-342.

Enforcement of youth tobacco possession laws

Literature review updated December 2014.

Program Description: Possession-Use-Purchase laws attempt to decrease cigarette and tobacco demand among youth by penalizing youth smokers. These policies include implementation and enactment of fines for youth who are caught using or in possession of tobacco.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	1	502	-0.337	0.001	-0.337	0.086	14	-0.337	0.086	15
Smoking in high school	Primary	1	7507	-0.121	0.001	-0.121	0.031	14	-0.121	0.031	18

Citations Used in the Meta-Analysis

Jason, L.A., Pokorny, S.B., & Schoeny, M.E. (2003). Evaluating the effects of enforcements and fines on youth smoking. *Critical Public Health*, *13*(1), 33-45.

Jason, L.A., Pokorny, S.B., & Adams, M. (2008). A randomized trial evaluating tobacco possession-use-purchase laws in the USA. *Social Science & Medicine*, *67*(11), 1700-1707.

Smoking cessation programs during pregnancy (all programs)

Literature review updated December 2014.

Program Description: Counseling cessation programs for pregnant smokers typically involving face-to-face counseling, although four studies were exclusively telephone counseling.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	18	3186	-0.276	0.001	-0.276	0.075	25	n/a	n/a	n/a

Citations Used in the Meta-Analysis

Cook, C., Ward, S., Myers, S., & Spinnato, J. (1995). A prospective, randomized evaluation of intensified therapy for smoking reduction in pregnancy. American Journal of Obstetrics and Gynecology: Part 2, 172(1), 290.

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Smoking cessation programs in pregnancy (face-to-face counseling programs)

Literature review updated December 2014.

Program Description: Smoking cessation counseling interventions tailored to pregnant smokers with intensive face-to-face counseling.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	9	1427	-0.301	0.008	-0.301	0.114	25	n/a	n/a	n/a

Citations Used in the Meta-Analysis

Cook, C., Ward, S., Myers, S., & Spinnato, J. (1995). A prospective, randomized evaluation of intensified therapy for smoking reduction in pregnancy. *American Journal of Obstetrics and Gynecology: Part 2*, *172*(1), 290.

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Smoking cessation programs in pregnancy (programs without significant face-to-face counseling)

Literature review updated December 2014.

Program Description: Smoking cessation counseling interventions tailored to pregnant smokers without the intensive face-to-face counseling.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	9	1759	-0.235	0.013	-0.235	0.094	26	n/a	n/a	n/a

Citations Used in the Meta-Analysis

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Elementary school-based social development programs

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Elementary school-based prevention interventions aim to reduce risk of future substance abuse by targeting risk and protective factors within schools, peers, individuals and families. They are known as social development programs and are often multimodal, engaging students in after-school and summer programs, or holding family workshops. Many of these programs also include comprehensive health curriculum. Five name-brand programs included are Linking the Interests of Families and Teachers (LIFT), Positive Action, Michigan Model for Health, Seattle Social Development Project, and Raising Healthy Children.

Benefit-Cost Summary

Program benefits	
Participants	$6,080
Taxpayers	$3,952
Other (1)	$3,377
Other (2)	$537
Total	$13,946
Costs	($236)
Benefits minus cost	$13,710

Summary statistics	
Benefit to cost ratio	$59.31
Benefits minus costs	$13,710
Probability of a positive net present value	77 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$330	$953	$164	$1,447
Labor market earnings (hs grad)	$6,095	$2,600	$3,011	$0	$11,705
K-12 grade repetition	$0	$77	$0	$38	$116
Property loss (alcohol abuse/dependence)	$3	$0	$5	$0	$8
Health care (educational attainment)	($111)	$885	($639)	$442	$576
Subtotals	$5,986	$3,892	$3,330	$644	$13,852
From secondary participant					
Crime	$0	$4	$11	$2	$17
Labor market earnings (hs grad)	$96	$41	$47	$0	$184
Child abuse and neglect	$0	$0	$0	$0	$0
Out-of-home placement	$0	$0	$0	$0	$0
Health care (educational attainment)	($2)	$15	($11)	$8	$10
Subtotals	$94	$60	$47	$10	$211
Adjustment for deadweight cost of program	$0	$0	$0	($117)	($117)
Totals	$6,080	$3,952	$3,377	$537	$13,946

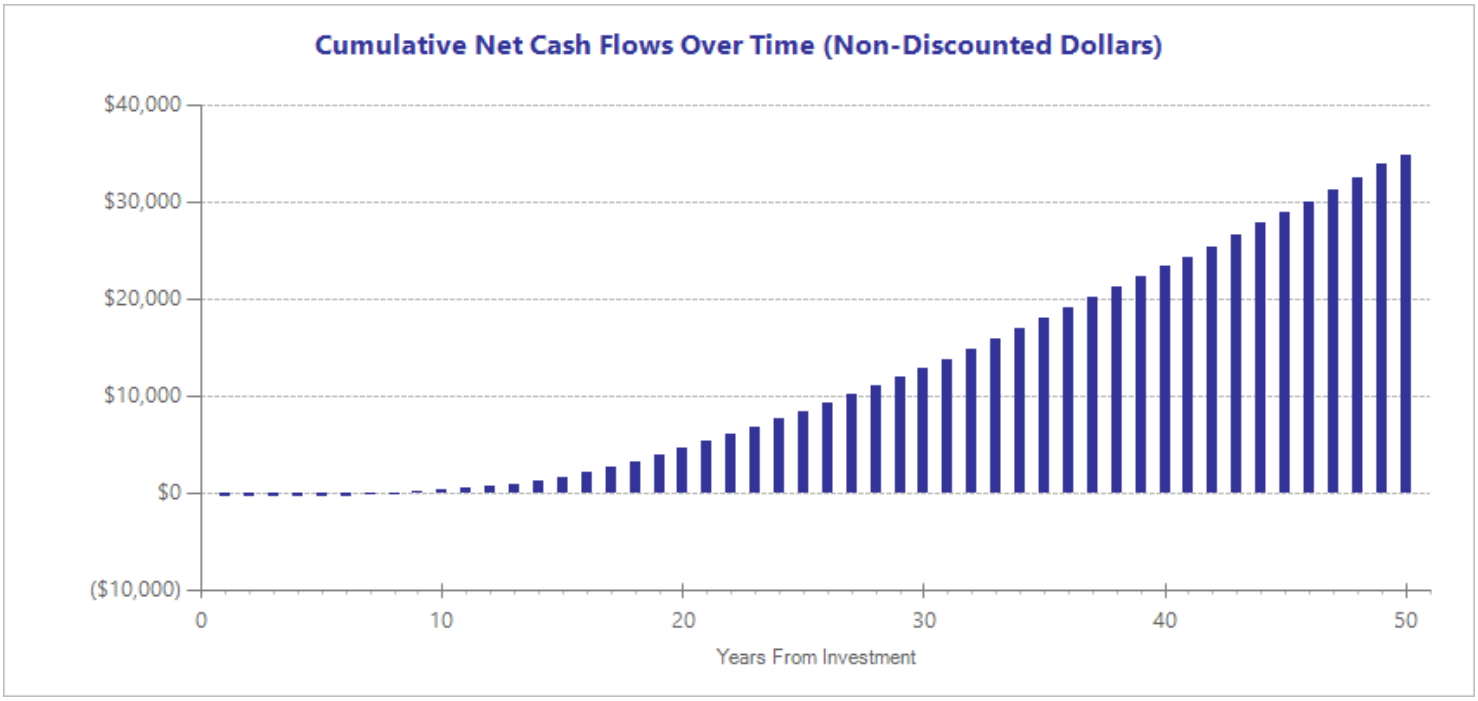
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$238	1	2014	Present value of net program costs (in 2013 dollars)	($236)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	10 %

Estimated as an average cost of Raising Healthy Children, Positive Action, MMH, and SSDP. RHC was estimated from Blueprints Programs, Positive Action and MMH estimated from The National Registry of Evidence-based Programs and Practices, and SSDP from Hawkins et al. (1999) pg. 234. Hawkins, J.D., Catalano, R.F., Kosterman, R., Abbott, R., & Hill, K.G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. Archives of Pediatrics & Adolescent Medicine, 153(3), 226-234.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	3	843	-0.039	0.596	-0.028	0.073	17	-0.028	0.073	18
Alcohol use in high school	Primary	2	629	-0.044	0.519	-0.040	0.069	16	-0.040	0.069	18
Cannabis use in high school	Primary	1	480	-0.093	0.293	-0.093	0.089	16	-0.093	0.089	18
Alcohol use before end of middle school	Primary	2	1936	-0.265	0.001	-0.265	0.056	11	-0.265	0.056	15
Smoking before end of middle school	Primary	2	1936	-0.179	0.002	-0.179	0.059	11	-0.179	0.059	15
Initiation of sexual activity	Primary	1	149	-0.385	0.015	-0.146	0.158	18	-0.146	0.158	18
Teen pregnancy (under age 18)	Primary	1	149	-0.335	0.040	-0.127	0.163	18	-0.127	0.163	18
Teen births under age 18	Primary	1	149	-0.300	0.148	-0.114	0.207	18	-0.114	0.207	18
Teen births (second generation)	Secondary	1	149	-0.300	0.148	-0.114	0.207	18	-0.114	0.207	18
K-12 grade repetition	Primary	1	149	-0.355	0.042	-0.135	0.175	12	-0.135	0.175	18
High school graduation	Primary	1	149	0.255	0.109	0.097	0.159	18	0.097	0.159	18
Crime	Primary	1	149	-0.214	0.182	-0.081	0.160	12	-0.081	0.160	22
Illicit drug use before end of middle school	Primary	1	976	-0.241	0.001	-0.241	0.065	11	-0.241	0.065	15

Citations Used in the Meta-Analysis

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Good Behavior Game

Benefit-cost estimates updated December 2014. Literature review updated April 2012.

Program Description: The Good Behavior Game is a two-year classroom management strategy designed to improve aggressive/disruptive classroom behavior and prevent later criminality. The program is universal and can be applied to general populations of early elementary school children (grades 1 and 2).

Benefit-Cost Summary

Program benefits	
Participants	$5,308
Taxpayers	$2,788
Other (1)	$783
Other (2)	$203
Total	$9,081
Costs	($158)
Benefits minus cost	$8,924

Summary statistics	
Benefit to cost ratio	$57.53
Benefits minus costs	$8,924
Probability of a positive net present value	93 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$146	$410	$74	$630
Health care (smoking)	$65	$408	$359	$203	$1,035
Labor market earnings (alcohol abuse/dependence)	$5,236	$2,233	$0	$4	$7,473
Property loss (alcohol abuse/dependence)	$8	$0	$14	$0	$22
Adjustment for deadweight cost of program	$0	$0	$0	($79)	($79)
Totals	$5,308	$2,788	$783	$203	$9,081

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

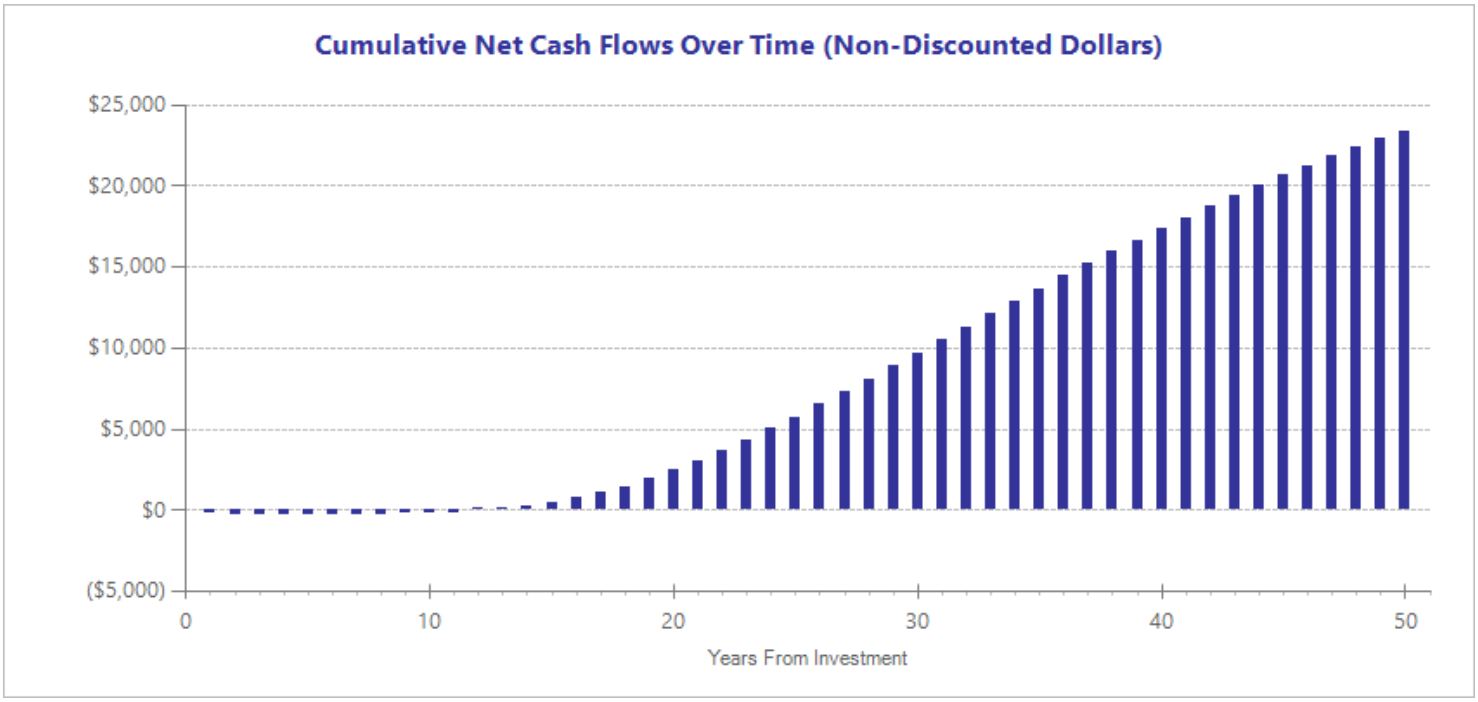
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$78	2	2011
Comparison costs	$0	1	2011

Summary statistics	
Present value of net program costs (in 2013 dollars)	($158)
Uncertainty (+ or - %)	10 %

Costs include teacher training, classroom supplies, district GBG coach training, subcontractor support, and travel costs. The estimate is based on training for 30 teachers and one coach over two years and a cumulative 3,375 students served in GBG classrooms over five years. Information for this costs estimate was provided by Jeanne Poduska, Sc D, American Institutes for Research.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	1	175	-0.304	0.001	-0.115	0.090	20	-0.115	0.090	30
Alcohol abuse or dependence	Primary	1	176	-0.609	0.001	-0.231	0.150	20	-0.231	0.150	30
Externalizing behavior symptoms	Primary	1	425	-0.437	0.001	-0.437	0.084	12	-0.208	0.098	15
Major depressive disorder	Primary	2	399	-0.178	0.160	-0.138	0.127	20	-0.072	0.156	22
Anxiety disorder	Primary	2	399	-0.192	0.242	-0.192	0.165	20	-0.100	0.202	22
Suicide attempts	Primary	1	178	-0.195	0.279	-0.074	0.180	20	-0.074	0.180	25
Antisocial personality disorder	Primary	1	179	-0.295	0.032	-0.112	0.137	20	-0.112	0.137	25
Smoking before end of middle school	Primary	2	540	-0.231	0.002	-0.088	0.073	12	-0.088	0.073	22
Regular smoking	Primary	1	175	-0.593	0.001	-0.225	0.091	20	-0.225	0.091	30
High school graduation	Primary	1	175	0.162	0.174	0.062	0.119	20	0.062	0.119	20
Crime	Primary	1	239	-0.108	0.582	-0.041	0.197	20	-0.041	0.197	30

Citations Used in the Meta-Analysis

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Caring School Community (formerly Child Development Project)

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Caring School Community, formerly called the Child Development Project, is a whole-school program aimed at promoting positive youth development. Designed for elementary schools, the program attempts to promote prosocial values, improve academic achievement, and prevent drug use, violence, and delinquency by encouraging collaboration among students, staff, and parents. Caring School Community includes four components designed to be implemented throughout the year: 1) Class Meetings, which promote communication and decision-making between teachers and students to improve the classroom climate; 2) Cross-Age Buddies, which pairs classes of younger and older students for academic and recreational activities to facilitate supportive relationships across ages; 3) Homeside Activities, which include parent-child activities completed at home that complement and reinforce the program's school components; and 4) School wide Community-Building Activities, which include a variety of activities designed to engage parents in the school environment and to link parents and their children to the greater community.

Benefit-Cost Summary

Program benefits	
Participants	$4,696
Taxpayers	$2,171
Other (1)	$2,271
Other (2)	($527)
Total	$8,611
Costs	($1,218)
Benefits minus cost	$7,393

Summary statistics	
Benefit to cost ratio	$7.06
Benefits minus costs	$7,393
Probability of a positive net present value	62 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$16	$51	$8	$75
Labor market earnings (test scores)	$4,714	$2,011	$2,325	$0	$9,050
Property loss (alcohol abuse/dependence)	$1	$0	$2	$0	$3
Health care (educational attainment)	($19)	$144	($107)	$71	$90
Adjustment for deadweight cost of program	$0	$0	$0	($607)	($607)
Totals	$4,696	$2,171	$2,271	($527)	$8,611

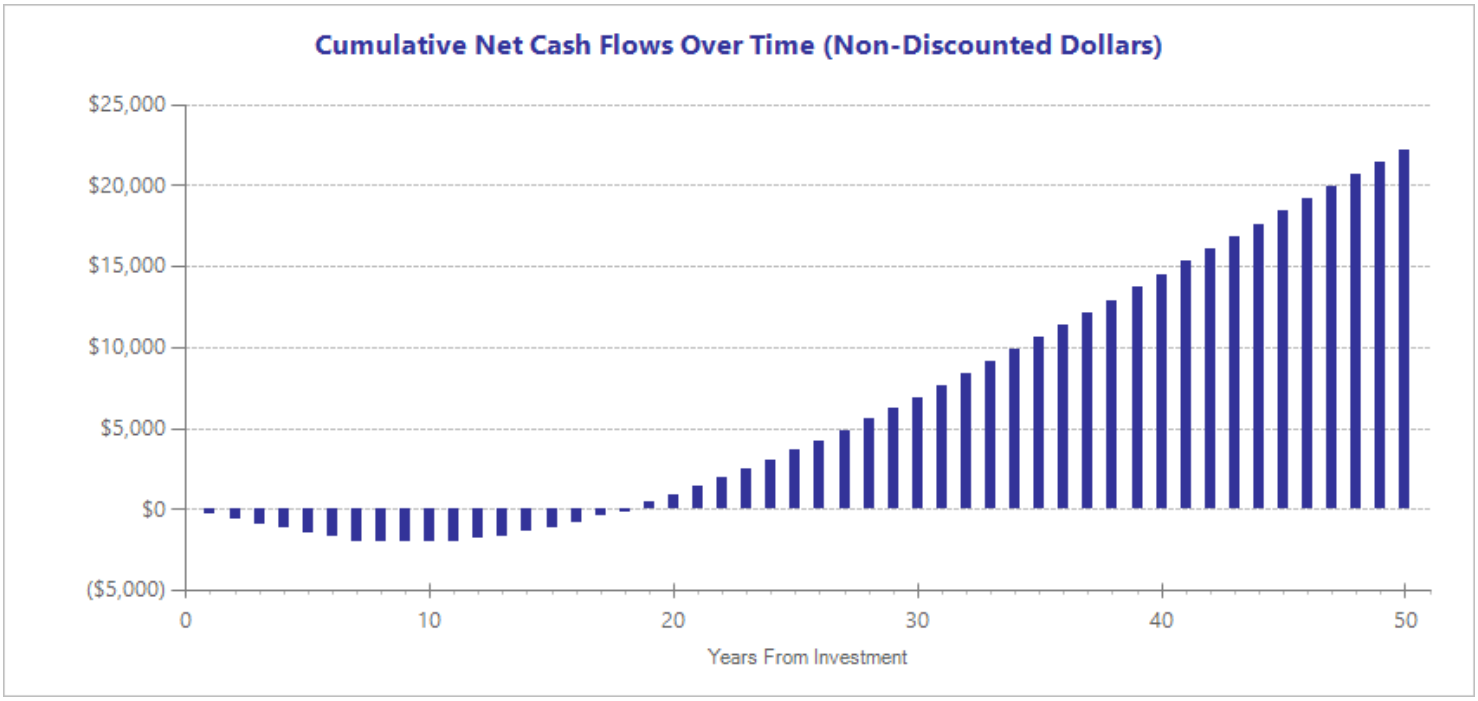
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$192	7	2013	Present value of net program costs (in 2013 dollars)	($1,218)
Comparison costs	$0	7	2013	Uncertainty (+ or - %)	10 %

Cost data come from CSC developer (http://www.devstu.org/caring-school-community) and WA Office of Superintendent of Public Instruction.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	1	800	-0.018	0.902	-0.006	0.146	13	-0.006	0.146	18
Alcohol use before end of middle school	Primary	1	800	-0.178	0.221	-0.059	0.146	13	-0.059	0.146	18
Cannabis use before end of middle school	Primary	1	800	-0.149	0.306	-0.049	0.146	13	-0.049	0.146	18
Test scores	Primary	1	472	0.109	0.544	0.109	0.179	13	0.065	0.197	18
High school grad via test scores	Primary	n/a	0	n/a	n/a	0.018	0.052	18	0.018	0.052	18

Citations Used in the Meta-Analysis

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School-based tobacco prevention programs

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: School-based tobacco prevention programs are curriculum programs that are specifically designed around tobacco prevention and cessation. These programs aim to increase students peer pressure resistance skills, instruct about health and social consequences of tobacco use, and often teach students to decifer pro-tobacco media messaging. Two name-brand programs analysed were Project Towards No Tobacco Use and Project SHOUT (Students Helping Others Understand Tobacco).

Benefit-Cost Summary

Program benefits	
Participants	$1,869
Taxpayers	$986
Other (1)	$1,086
Other (2)	$71
Total	$4,012
Costs	($62)
Benefits minus cost	$3,950

Summary statistics	
Benefit to cost ratio	$64.64
Benefits minus costs	$3,950
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (hs grad)	$1,837	$784	$908	$0	$3,529
Health care (smoking)	$32	$203	$178	$102	$514
Adjustment for deadweight cost of program	$0	$0	$0	($31)	($31)
Totals	$1,869	$986	$1,086	$71	$4,012

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

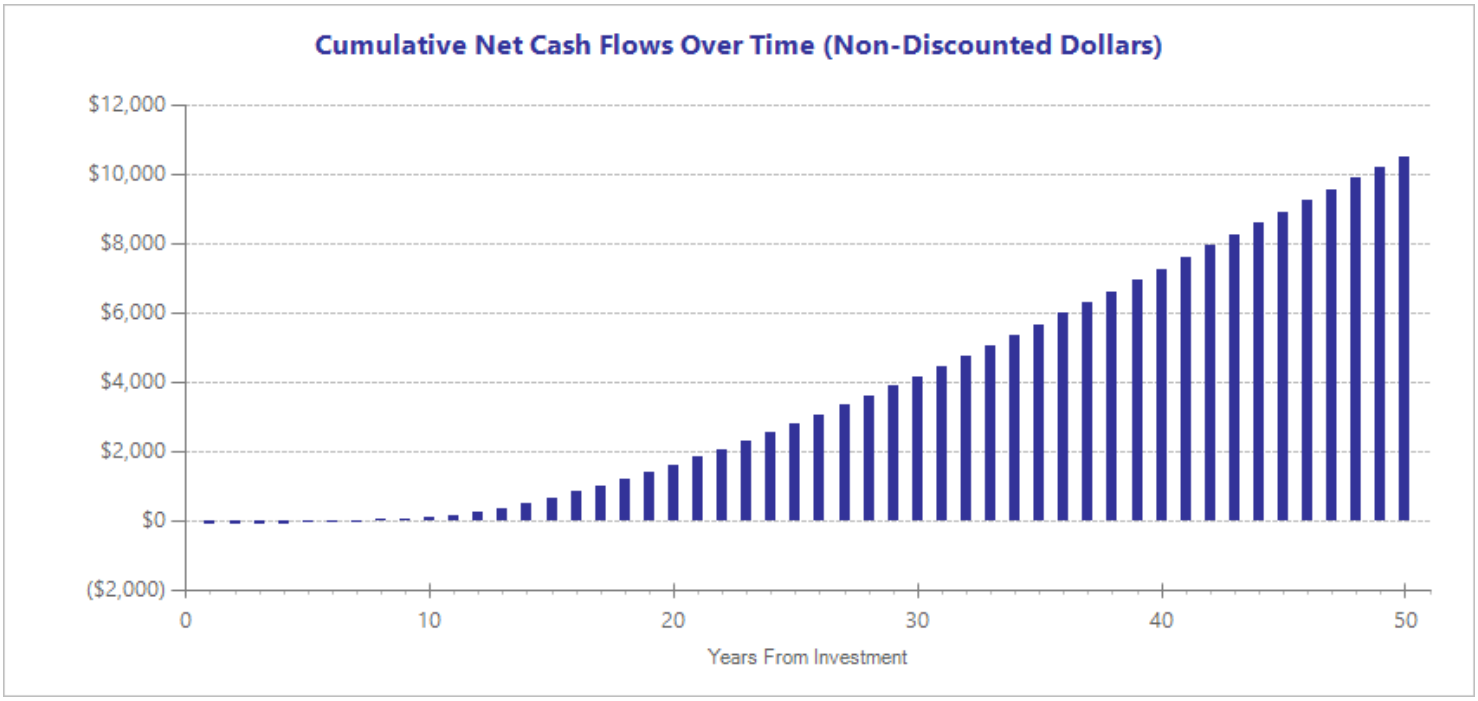
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$63	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($62)
Uncertainty (+ or - %)	10 %

Costs estimated from The National Registry of Evidence-based Programs and Practices.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	2	2536	-0.171	0.025	-0.171	0.076	14	-0.171	0.076	18

Citations Used in the Meta-Analysis

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Minnesota Smoking Prevention Program

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: The Minnesota Smoking Prevention Program (MSPP) is a school-based tobacco prevention program for adolescents. MSPP addresses tobacco use by influencing the social and psychological factors that encourage the onset of smoking.

Benefit-Cost Summary

Program benefits	
Participants	$1,298
Taxpayers	$652
Other (1)	$726
Other (2)	$37
Total	$2,712
Costs	($32)
Benefits minus cost	$2,681

Summary statistics	
Benefit to cost ratio	$86.00
Benefits minus costs	$2,681
Probability of a positive net present value	94 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (hs grad)	$1,281	$547	$633	$0	$2,461
Health care (smoking)	$17	$105	$92	$53	$267
Adjustment for deadweight cost of program	$0	$0	$0	($16)	($16)
Totals	$1,298	$652	$726	$37	$2,712

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

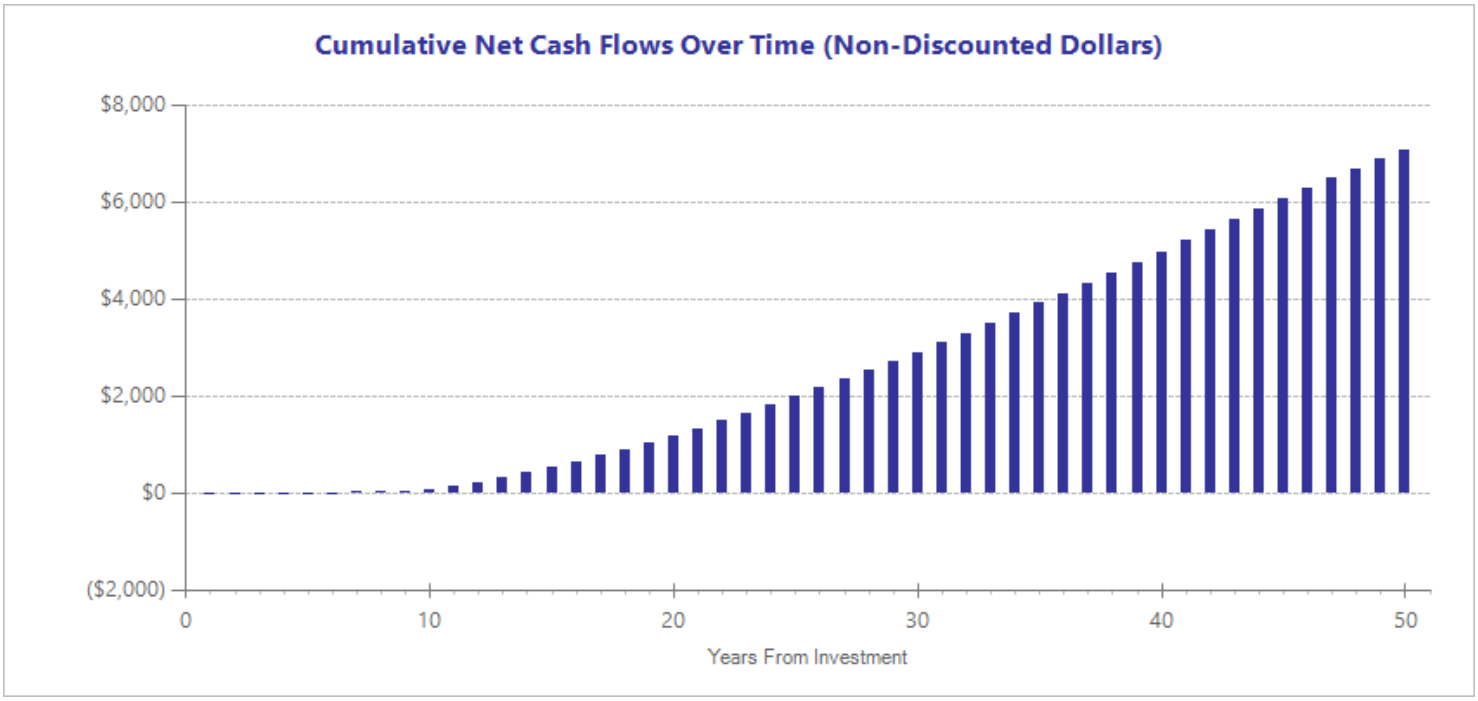
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$32	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($32)
Uncertainty (+ or - %)	10 %

The curriculum materials cost $249 for each class, serving 30 individuals. http://www.militaryfamilies.psu.edu/themes/clearinghouse/pdfs/minnesota%20smoking%20prevention%20program%20fact%20sheet.pdf

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	3	6188	-0.308	0.038	-0.230	0.156	13	-0.230	0.156	15

Citations Used in the Meta-Analysis

Arkin, R., Roemhild, H., Johnson, C.A., Luepker, R., & Murray, D. (1981). The Minnesota Smoking Prevention Program: A seventh grade health curriculum supplement. *Journal of School Health*, *51*(19), 611-616.

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All Stars

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: All Stars is a school-based program for adolescents age 11-14. The program is designed to prevent substance abuse and other high risk behaviors as well as promote healthy and positive behaviors. All Stars "Core" includes thirteen 45-minute class sessions delivered on a weekly basis by teachers. All Stars "Plus" includes twelve 45-minute lessons designed to expand instruction on "Core" on decisionmaking, goal setting, and peer pressure resistance skills training.

Benefit-Cost Summary

Program benefits	
Participants	$1,473
Taxpayers	$735
Other (1)	$174
Other (2)	$7
Total	$2,389
Costs	($101)
Benefits minus cost	$2,288

Summary statistics	
Benefit to cost ratio	$23.59
Benefits minus costs	$2,288
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$33	$99	$16	$149
Health care (smoking)	$13	$80	$70	$40	$203
Labor market earnings (alcohol abuse/dependence)	$1,458	$622	$0	$1	$2,082
Property loss (alcohol abuse/dependence)	$2	$0	$4	$0	$6
Adjustment for deadweight cost of program	$0	$0	$0	($51)	($51)
Totals	$1,473	$735	$174	$7	$2,389

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

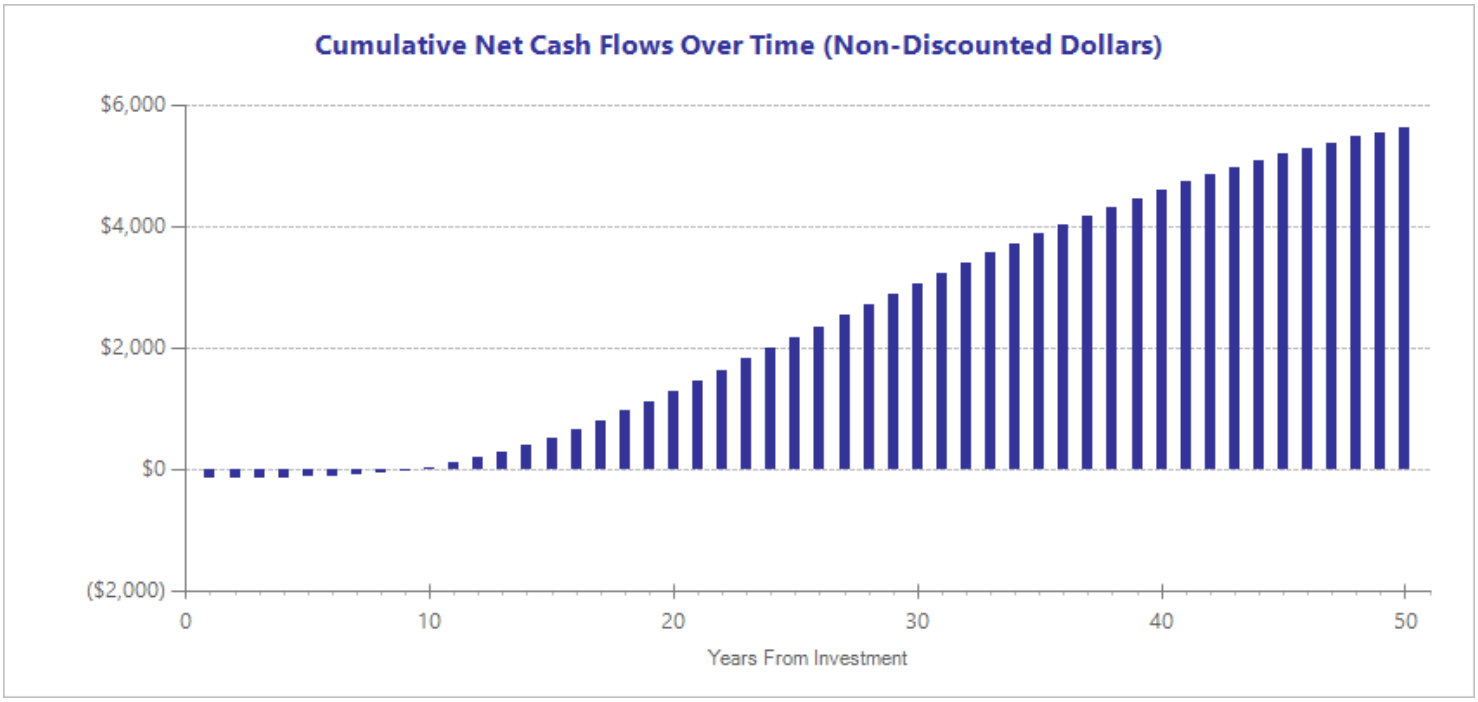
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$101	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($101)
Uncertainty (+ or - %)	10 %

Estimated from The National Registry of Evidence-based Programs and Practices.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol use before end of middle school	Primary	4	4978	-0.190	0.040	-0.190	0.092	13	-0.190	0.092	15
Smoking before end of middle school	Primary	3	3907	-0.173	0.037	-0.173	0.083	13	-0.173	0.083	15
Initiation of sexual activity	Primary	1	911	0.032	0.500	0.032	0.047	13	0.032	0.047	17
Cannabis use before end of middle school	Primary	3	3917	-0.206	0.237	-0.206	0.174	13	-0.206	0.174	15

Citations Used in the Meta-Analysis

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Slater, M.D., Kelly, K.J., Edwards, R.W., Thurman, P.J., Plested, B.A., Keefe, T.J., Lawrence, F.R., ... Henry, K.L. (2006). Combining in-school and community-based media efforts: reducing marijuana and alcohol uptake among younger adolescents. *Health Education Research*, *21*(1), 157-67.

Drug Abuse Resistance Education (D.A.R.E.)

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: D.A.R.E. is a school-based substance use, gang membership, and violent behavior prevention program. The 17-week program is taught by local police officers in 5th and 6th grade. The program aims to teach peer resistance skills so that students can say "no" to drugs.

Benefit-Cost Summary

Program benefits	
Participants	$843
Taxpayers	$334
Other (1)	$807
Other (2)	($42)
Total	$1,941
Costs	($53)
Benefits minus cost	$1,888

Summary statistics	
Benefit to cost ratio	$36.44
Benefits minus costs	$1,888
Probability of a positive net present value	84 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$59	$177	$30	$266
Labor market earnings (hs grad)	$1,427	$609	$705	$0	$2,740
Labor market earnings (alcohol abuse/dependence)	($571)	($243)	$0	$0	($814)
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Health care (illicit drug abuse/dependence)	($19)	($110)	($98)	($55)	($281)
Health care (cannabis abuse/dependence)	$5	$19	$23	$10	$57
Adjustment for deadweight cost of program	$0	$0	$0	($27)	($27)
Totals	$843	$334	$807	($42)	$1,941

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

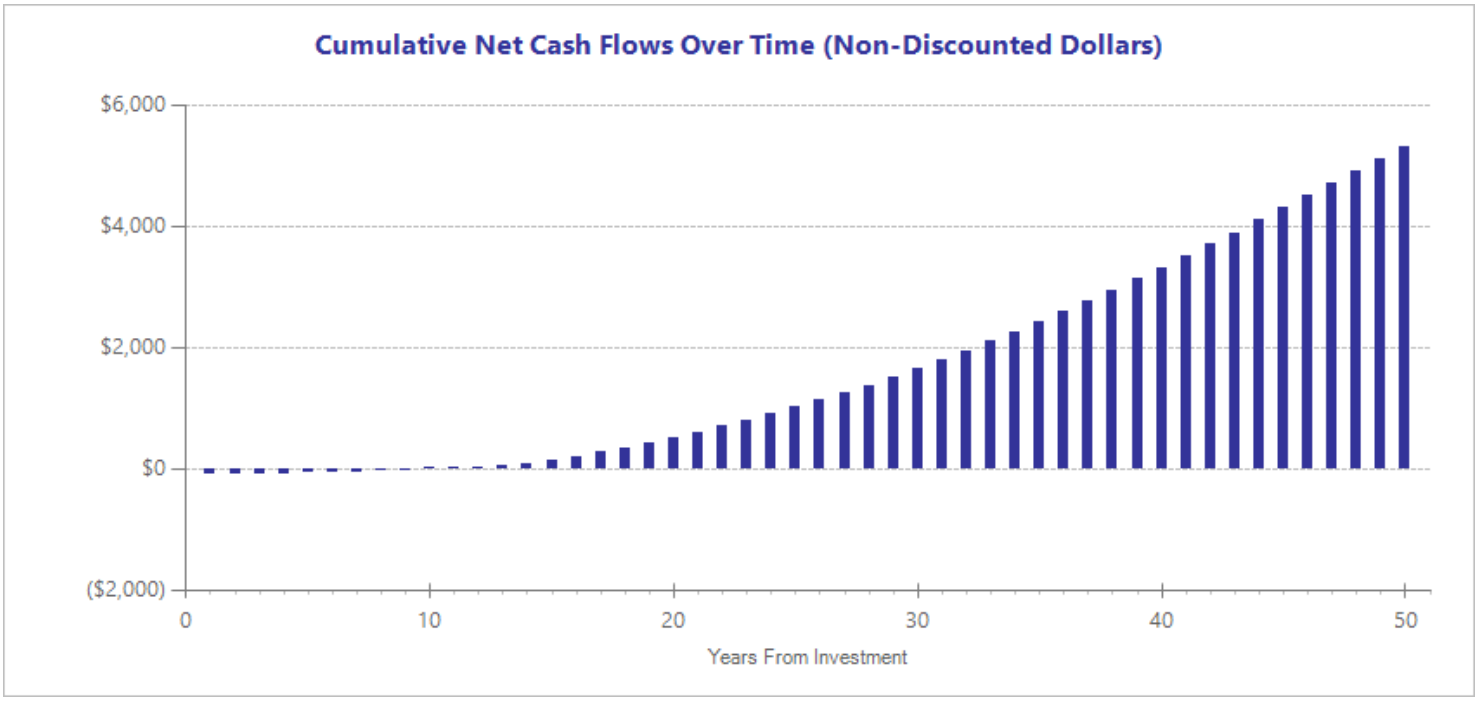
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$54	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($53)
Uncertainty (+ or - %)	10 %

Material costs estimated from D.A.R.E. website, http://www.dare.org/starting-a-dare-program/, and Shepard III, E. M. (2001). The economic costs of DARE. Institute of Industrial Relations, Research paper, 22.Shepard, E. (2001) The Economic Costs of D.A.R.E. Police officer costs estimated from WSIPP calculations of police officers' salaries (http://www.wsipp.wa.gov/ReportFile/1396/Wsipp_Prison-Police-and-Programs-Evidence-Based-Options-that-Reduce-Crime-and-Save-Money_Full-Report.pdf).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	6	6304	-0.044	0.237	-0.044	0.037	12	-0.044	0.037	15
Alcohol use in high school	Primary	1	248	0.052	0.664	0.052	0.120	15	0.052	0.120	18
Smoking in high school	Primary	1	248	0.014	0.910	0.014	0.120	15	0.014	0.120	18
Cannabis use before end of middle school	Primary	1	341	-0.048	0.672	-0.048	0.114	11	-0.048	0.114	15
Cannabis use in high school	Primary	1	680	-0.199	0.060	-0.199	0.108	18	-0.199	0.108	18
Illicit drug use in high school	Primary	1	248	0.038	0.749	0.038	0.120	15	0.038	0.120	18
Alcohol use before end of middle school	Primary	6	6304	-0.065	0.267	-0.065	0.058	12	-0.065	0.058	15

Citations Used in the Meta-Analysis

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Ringwalt, C., Ennett, S.,& Holt, K. (1991). An outcome evaluation of Project DARE (Drug Abuse Resistance Education). *Health Education Research*, *6*(3), 327-337.

Rosenbaum, D.P. & Hanson, G.S. (1998). Assessing the effects of school-based drug education: A six-year multilevel analysis of project D.A.R.E. *Journal of Research in Crime and Delinquency*, *35*(4), 381-412.

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SPORT

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: SPORT is a school-based brief intervention implemented in high schools designed to promote a healthy lifestyle via improved physical activity, diet, and sleep. Students participate in a 12-minute one-on-one counseling session with a fitness specialist during which they recieve a booklet and tailored consultation. Students then complete a fitness plan designed to create behavior change and an improved self-image. Flyers that complement the intervention's core content are sent to parents for four weeks post-intervention.

Benefit-Cost Summary

Program benefits	
Participants	$589
Taxpayers	$325
Other (1)	$398
Other (2)	$20
Total	$1,333
Costs	($38)
Benefits minus cost	$1,294

Summary statistics	
Benefit to cost ratio	$34.70
Benefits minus costs	$1,294
Probability of a positive net present value	74 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$17	$56	$9	$82
Labor market earnings (hs grad)	$579	$247	$287	$0	$1,113
Health care (smoking)	$10	$61	$53	$31	$155
Property loss (alcohol abuse/dependence)	$1	$0	$2	$0	$2
Adjustment for deadweight cost of program	$0	$0	$0	($19)	($19)
Totals	$589	$325	$398	$20	$1,333

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

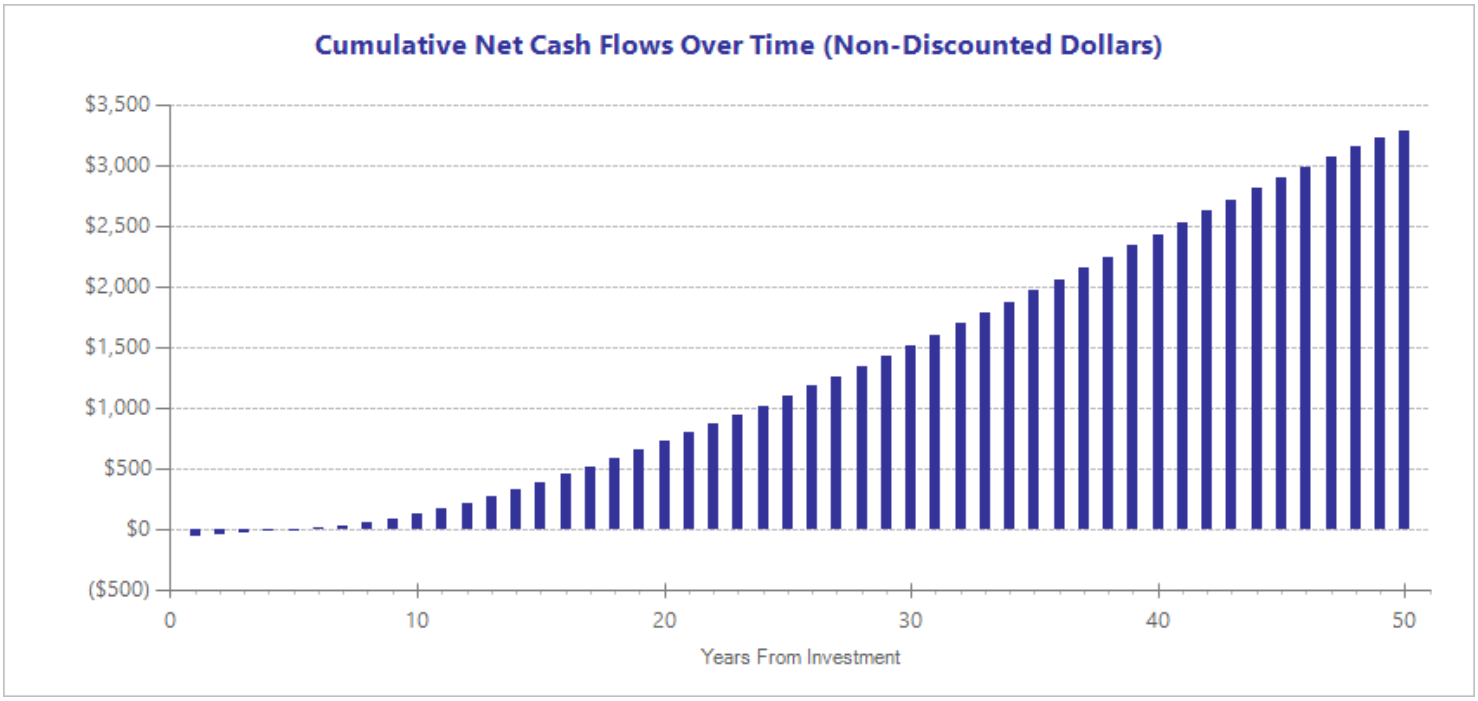
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$38	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($38)
Uncertainty (+ or - %)	10 %

Cost data come from developer website (http://preventionpluswellness.com/programs/inshape/).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	1	260	-0.144	0.103	-0.047	0.088	18	-0.047	0.088	18
Alcohol use in high school	Primary	1	260	-0.027	0.762	-0.009	0.088	18	-0.009	0.088	18
Youth binge drinking	Primary	1	260	-0.144	0.104	-0.047	0.088	18	-0.047	0.088	18
Cannabis use in high school	Primary	1	260	-0.083	0.346	-0.027	0.088	18	-0.027	0.088	18

Citations Used in the Meta-Analysis

Werch, C.C., Moore, M., DiClemente, C., Bledsoe, R., & Jobli, E. (2005). A Multihealth Behavior Intervention Integrating Physical Activity and Substance Use Prevention for Adolescents. *Prevention Science*, *6*(3), 213-226.

Life Skills Training

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Life Skills Training (LST) is a school-based classroom intervention to reduce the risks of alcohol, tobacco, drug abuse, and violence by targeting social and psychological factors associated with initiation of risky behaviors. Teachers deliver the program to middle/junior high school students in 24 to 30 sessions over three years. Students in the program are taught general self-management and social skills and skills related to avoiding substance use.

Benefit-Cost Summary

Program benefits	
Participants	$401
Taxpayers	$246
Other (1)	$487
Other (2)	($9)
Total	$1,125
Costs	($97)
Benefits minus cost	$1,028

Summary statistics	
Benefit to cost ratio	$11.58
Benefits minus costs	$1,028
Probability of a positive net present value	84 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$11	$33	$5	$48
Labor market earnings (hs grad)	$798	$340	$394	$0	$1,531
Health care (smoking)	$14	$87	$76	$43	$221
Labor market earnings (alcohol abuse/dependence)	($408)	($174)	$0	$0	($582)
Health care (alcohol abuse/dependence)	($3)	($17)	($16)	($9)	($45)
Property loss (alcohol abuse/dependence)	$0	$0	$1	$0	$1
Adjustment for deadweight cost of program	$0	$0	$0	($48)	($48)
Totals	$401	$246	$487	($9)	$1,125

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

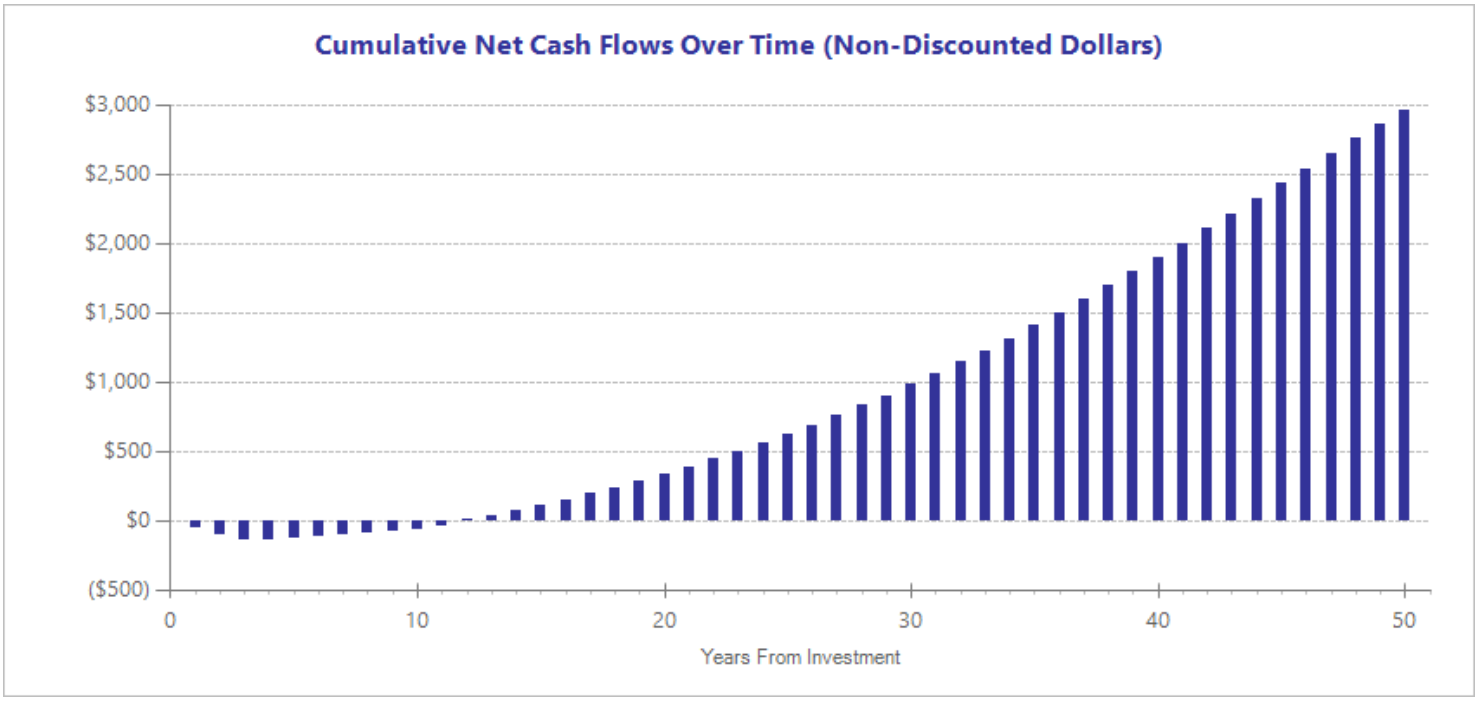
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$34	3	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($97)
Uncertainty (+ or - %)	10 %

Cost data come from Blueprints for Healthy Youth Development and developer website (http://www.blueprintsprograms.com/programCosts.php?pid=ac3478d69a3c81fa62e60f5c3696165a4e5e6ac4).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Internalizing symptoms	Primary	4	3092	-0.054	0.549	-0.018	0.091	14	-0.013	0.071	16
Alcohol use in high school	Primary	3	280	0.029	0.695	0.035	0.074	18	0.035	0.074	28
Smoking in high school	Primary	4	359	-0.122	0.138	-0.070	0.072	18	-0.070	0.072	28
Cannabis use in high school	Primary	3	280	-0.004	0.962	0.003	0.078	18	0.003	0.078	28
Alcohol use before end of middle school	Primary	5	3150	-0.080	0.017	-0.026	0.033	14	-0.026	0.033	24
Cannabis use before end of middle school	Primary	4	3056	-0.041	0.217	-0.014	0.033	14	-0.014	0.033	24
Smoking before end of middle school	Primary	8	3617	-0.083	0.012	-0.027	0.033	14	-0.027	0.033	24
Youth binge drinking	Primary	2	1947	-0.154	0.593	-0.017	0.244	15	-0.017	0.244	25

Citations Used in the Meta-Analysis

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Vicary, J., Smith, E., Swisher, J., Hopkins, A., Elek, E., Bechtel, L., & Henry, K. (2006). Results of a 3-year study of two methods of delivery of life skills training. *Health Education & Behavior*, *33*(3), 325-339.

American Indian adolescent substance abuse prevention programs

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Several school-based substance abuse prevention programs have been developed and evaluated that specifically target American Indian youth. These programs contain culturally relevent content, including information about ceremonial tobacco use, traditions, community leaders, and storytelling. The two programs in this meta-analysis include Pathways to Health and Bi-cultural Competence Skills Approach. The programs often encourage coping and problem-solving skills, and disseminate information about health risks.

Benefit-Cost Summary

Program benefits	
Participants	$553
Taxpayers	$265
Other (1)	($20)
Other (2)	($12)
Total	$787
Costs	($55)
Benefits minus cost	$733

Summary statistics	
Benefit to cost ratio	$14.45
Benefits minus costs	$733
Probability of a positive net present value	78 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$12	$34	$6	$52
Labor market earnings (hs grad)	($150)	($64)	($75)	$0	($289)
Health care (smoking)	($2)	($12)	($11)	($6)	($31)
Labor market earnings (alcohol abuse/dependence)	$699	$298	$0	$1	$998
Health care (alcohol abuse/dependence)	$5	$32	$30	$16	$82
Property loss (alcohol abuse/dependence)	$1	$0	$2	$0	$3
Adjustment for deadweight cost of program	$0	$0	$0	($27)	($27)
Totals	$553	$265	($20)	($12)	$787

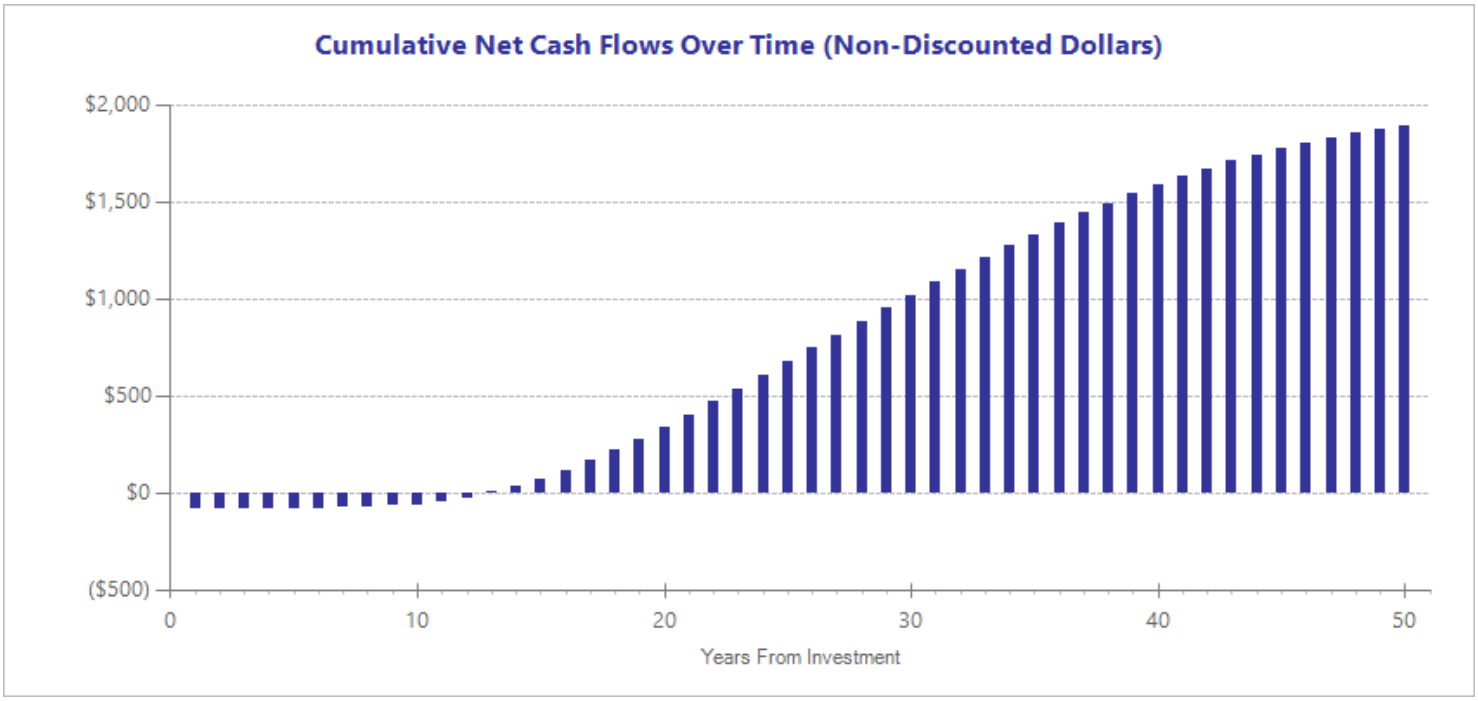
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$55	1	2014	Present value of net program costs (in 2013 dollars)	($55)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	10 %

Costs are estimated based on email correspondence with the program developer (9/13/2014).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	2	1112	0.045	0.681	0.026	0.110	11	0.026	0.110	15
Cannabis use before end of middle school	Primary	1	916	-0.010	0.955	-0.010	0.181	11	-0.010	0.181	15
Alcohol use before end of middle school	Primary	1	916	-0.092	0.610	-0.092	0.181	11	-0.092	0.181	15

Citations Used in the Meta-Analysis

Davis, S.M., Cunningham-Sabo, L., & Lambert, L. (1999). *Chapter 7: Pathways to Health: a cancer prevention project for native American schoolchildren and their families In Native Outreach: A report to American Indian, Alaska Native, and Native Hawaiian communities* (NIH Publication #98-4341).

Schinke, S.P., Tepavac, L., & Cole, K.C. (2000). Preventing substance use among native american youth: Three-year results. *Addictive Behaviors, 25*(3), 387-397.

keepin' it REAL

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Keepin' it REAL is a universal school-based substance use prevention program designed in multicultural settings for middle school students. The curriculum is taught by classroom teachers in 45-minute sessions once a week for ten weeks. Classroom sessions include group discussions, role plays, games, and five videos produced by youth designed to teach students drug resistance skills. Our review of the program is limited to the curriculum as implemented by the original developers and does not reflect the alternative implementation model used by D.A.R.E. America.

Benefit-Cost Summary

Program benefits	
Participants	$411
Taxpayers	$201
Other (1)	$44
Other (2)	($10)
Total	$646
Costs	($48)
Benefits minus cost	$598

Summary statistics	
Benefit to cost ratio	$13.51
Benefits minus costs	$598
Probability of a positive net present value	72 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$8	$26	$4	$39
Health care (smoking)	$3	$19	$17	$9	$48
Labor market earnings (alcohol abuse/dependence)	$407	$174	$0	$0	$581
Property loss (alcohol abuse/dependence)	$1	$0	$1	$0	$2
Adjustment for deadweight cost of program	$0	$0	$0	($24)	($24)
Totals	$411	$201	$44	($10)	$646

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

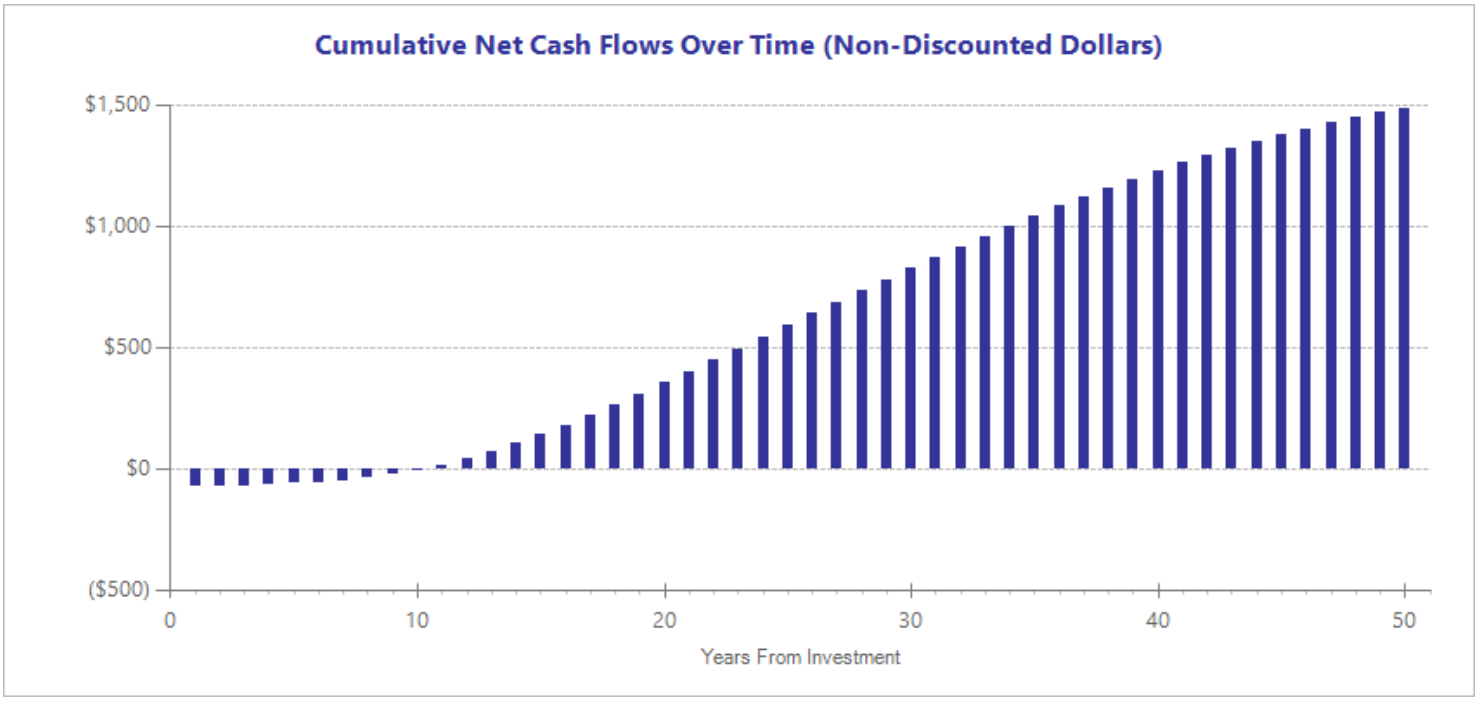
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$48	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($48)
Uncertainty (+ or - %)	10 %

Cost data come from developer website (http://www.kir.psu.edu/curriculum/order.shtml) and personal communication with developer.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	2	2214	-0.113	0.171	-0.037	0.083	15	-0.037	0.083	18
Alcohol use before end of middle school	Primary	2	2209	-0.150	0.072	-0.050	0.083	15	-0.050	0.083	18
Cannabis use before end of middle school	Primary	1	2051	-0.141	0.269	-0.046	0.127	15	-0.046	0.127	18

Citations Used in the Meta-Analysis

Hecht, M.L., Marsiglia, F.F., Elek, E., Wagstaff, D.A., Kulis, S., Dustman, P., & Miller-Day, M. (2003). Culturally grounded substance use prevention: an evaluation of the keepin' it R.E.A.L. curriculum. *Prevention Science*, *4*(4), 233-48.

Marsiglia, F.F., Booth, J. M., Ayers, S.L., Nuntilde;o-Gutierrez, B.L., Kulis, S., & Hoffman, S. (2013). Short-term effects on substance use of the keepin' it REAL pilot prevention program: Linguistically adapted for youth in Jalisco, Mexico. *Prevention Science*.

ATHENA (Athletes Targeting Healthy Exercise and Nutrition Alternatives)

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Athletes Targeting Healthy Exercise and Nutrition Alternatives (ATHENA) is a school-based disordered eating and substance abuse prevention program for young women. The program is conducted through sports teams rather than classrooms. Eight 45-minute lessons are integrated into the teams' normal activities. The program is gender-specific, uses peer leaders, and emphasize benefits of appropriate nutrition and health for sports. ATHENA also incorporates depression prevention content in the program. A male-specific parallel program exists named ATLAS, although there exist no rigorous evaluations.

Benefit-Cost Summary

Program benefits	
Participants	$241
Taxpayers	$127
Other (1)	$140
Other (2)	($6)
Total	$503
Costs	($37)
Benefits minus cost	$466

Summary statistics	
Benefit to cost ratio	$13.53
Benefits minus costs	$466
Probability of a positive net present value	57 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (hs grad)	$237	$101	$117	$0	$456
Health care (smoking)	$4	$26	$23	$13	$66
Adjustment for deadweight cost of program	$0	$0	$0	($19)	($19)
Totals	$241	$127	$140	($6)	$503

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

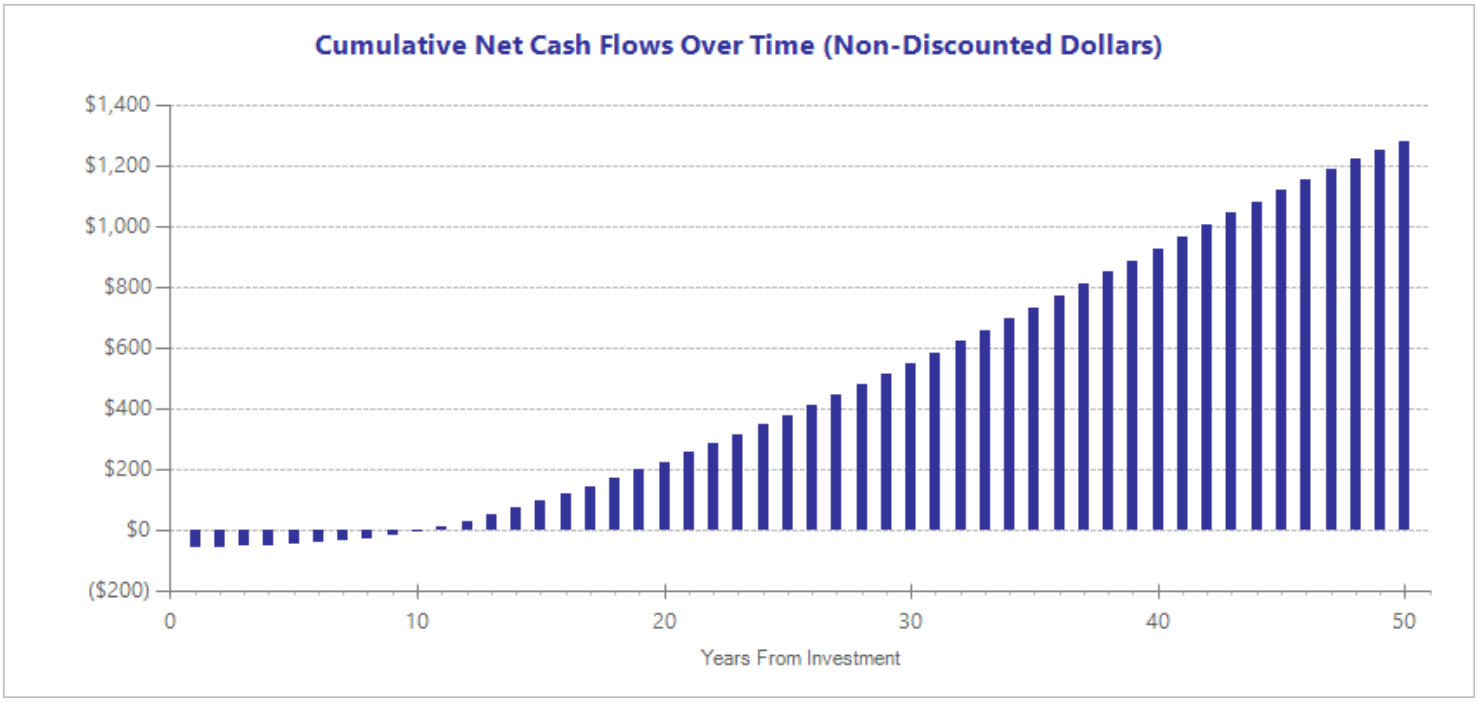
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$38	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($37)
Uncertainty (+ or - %)	10 %

Estimated from ATHENA Program website, http://www.ohsu.edu/xd/education/schools/school-of-medicine/departments/clinical-departments/medicine/divisions/hpsm/research/athena.cfm. Costs include coach and student manuals and training.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	1	337	-0.056	0.620	-0.021	0.112	16	-0.021	0.112	18

Citations Used in the Meta-Analysis

Elliot, D.L., Goldberg, L., Moe, E.L., Defrancesco, C.A., Durham, M.B., & Hix-Small, H. (2004). Preventing substance use and disordered eating: initial outcomes of the ATHENA (athletes targeting healthy exercise and nutrition alternatives) program. *Archives of Pediatrics & Adolescent Medicine*, *158*(11), 1043-9.

Too Good for Drugs

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Too Good for Drugs is a school-based prevention program for K–12 students. It is designed to increase social competencies and diminish risk factors associated with alcohol, tobacco, and other drug use. The program consists of ten classroom interactive lessons tailored for different grade levels.

Benefit-Cost Summary

Program benefits	
Participants	$319
Taxpayers	$158
Other (1)	$36
Other (2)	($14)
Total	$498
Costs	($52)
Benefits minus cost	$446

Summary statistics	
Benefit to cost ratio	$9.56
Benefits minus costs	$446
Probability of a positive net present value	97 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$7	$21	$4	$32
Health care (smoking)	$2	$16	$14	$8	$40
Labor market earnings (alcohol abuse/dependence)	$316	$135	$0	$0	$452
Property loss (alcohol abuse/dependence)	$0	$0	$1	$0	$1
Adjustment for deadweight cost of program	$0	$0	$0	($26)	($26)
Totals	$319	$158	$36	($14)	$498

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

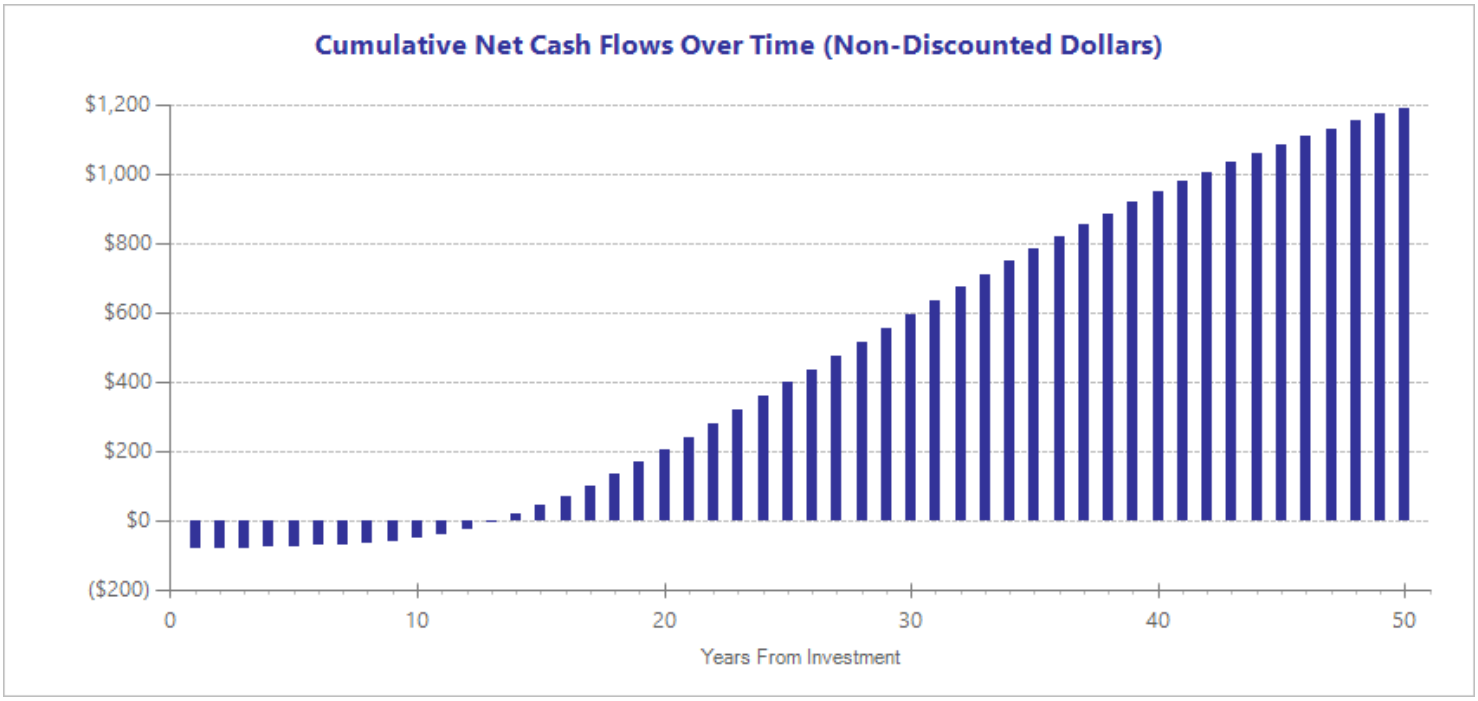
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$53	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($52)
Uncertainty (+ or - %)	10 %

Estimated from The National Registry of Evidence-based Programs and Practices.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Cannabis use before end of middle school	Primary	1	5066	-0.041	0.037	-0.041	0.020	12	-0.041	0.020	15
Alcohol use before end of middle school	Primary	1	5066	-0.040	0.042	-0.040	0.020	12	-0.040	0.020	15
Smoking before end of middle school	Primary	1	5066	-0.031	0.123	-0.031	0.020	12	-0.031	0.020	15

Citations Used in the Meta-Analysis

Bacon, T.P., Hall, B.W., & Ferron, J.M. (2013). *Technical report: One year study of the effects of the Too Good for Drugs prevention program on middle school students.* CE Mendez Foundation, INC.

Lions Quest Skills for Adolescence

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Lions Quest Skills for Adolescence is a school-based life skills education program designed for students in middle school grades. The curriculum's 45-minute sessions are designed to prevent substance use and bullying behaviors while also teaching anger and stress management skills. Although Lions Quest Skills for Adolescence typically comprises 80 or more sessions and may include whole-school components, our review is based on the 40-lesson version evaluated by Eisen et al. (2002).

Benefit-Cost Summary

Program benefits	
Participants	$216
Taxpayers	$96
Other (1)	$210
Other (2)	($45)
Total	$477
Costs	($94)
Benefits minus cost	$383

Summary statistics	
Benefit to cost ratio	$5.06
Benefits minus costs	$383
Probability of a positive net present value	79 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$14	$42	$7	$63
Labor market earnings (hs grad)	$357	$152	$176	$0	$685
Labor market earnings (alcohol abuse/dependence)	($139)	($59)	$0	$0	($199)
Health care (alcohol abuse/dependence)	$2	$12	$11	$6	$30
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Health care (illicit drug abuse/dependence)	($4)	($22)	($19)	($11)	($56)
Adjustment for deadweight cost of program	$0	$0	$0	($47)	($47)
Totals	$216	$96	$210	($45)	$477

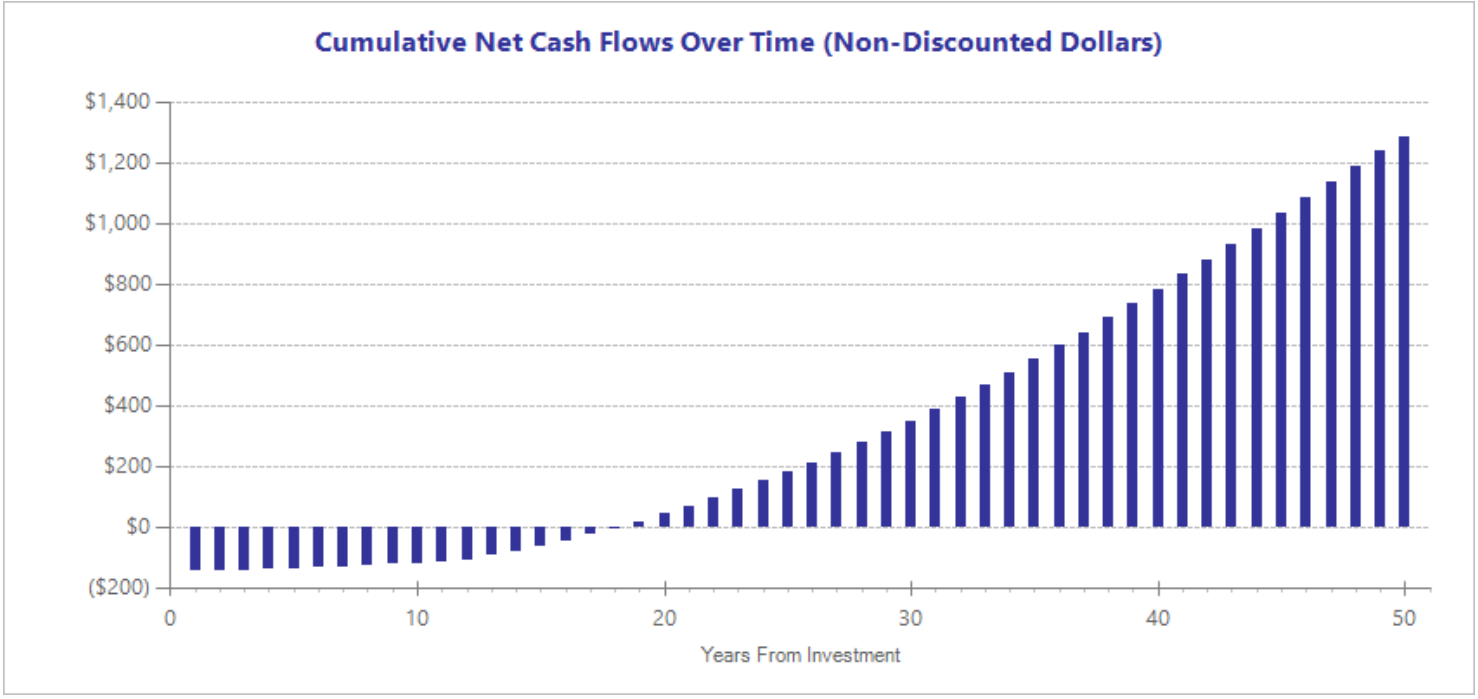
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$95	1	2013	Present value of net program costs (in 2013 dollars)	($94)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

Cost data come from NREPP and developer website (http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=24; http://www.lions-quest.org/ordermaterials.php).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol use before end of middle school	Primary	1	2600	0.017	0.625	0.017	0.036	13	0.017	0.036	18
Smoking before end of middle school	Primary	1	2600	0.015	0.687	0.015	0.038	13	0.015	0.038	18
Youth binge drinking	Primary	1	2600	-0.024	0.636	-0.024	0.050	13	-0.024	0.050	18
Cannabis use before end of middle school	Primary	1	2600	-0.096	0.009	-0.096	0.037	13	-0.096	0.037	18
Illicit drug use before end of middle school	Primary	1	2600	0.020	0.638	0.020	0.043	13	0.020	0.043	18

Citations Used in the Meta-Analysis

Eisen, M., Zellman, G.L., & Murray, D.M. (2003). Evaluating the Lions-Quest Skills for Adolescence drug education program: Second-year behavior outcomes. *Addictive Behaviors*, *28*(5), 883-897.

Project ALERT

Benefit-cost estimates updated December 2014. Literature review updated July 2014.

Program Description: Project ALERT is a middle/junior high school-based program to prevent tobacco, alcohol, and marijuana use. Over 11 sessions in the 7th grade and three boosters in the 8th grade, the program helps students understand that most people do not use drugs and teaches them to identify and resist the internal and social pressures that encourage substance use.

Benefit-Cost Summary

Program benefits	
Participants	$355
Taxpayers	$176
Other (1)	$34
Other (2)	($60)
Total	$504
Costs	($147)
Benefits minus cost	$357

Summary statistics	
Benefit to cost ratio	$3.43
Benefits minus costs	$357
Probability of a positive net present value	77 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$4	$14	$2	$21
Health care (smoking)	$3	$21	$19	$11	$54
Labor market earnings (alcohol abuse/dependence)	$352	$150	$0	$0	$502
Property loss (alcohol abuse/dependence)	$1	$0	$1	$0	$2
Adjustment for deadweight cost of program	$0	$0	$0	($73)	($73)
Totals	$355	$176	$34	($60)	$504

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

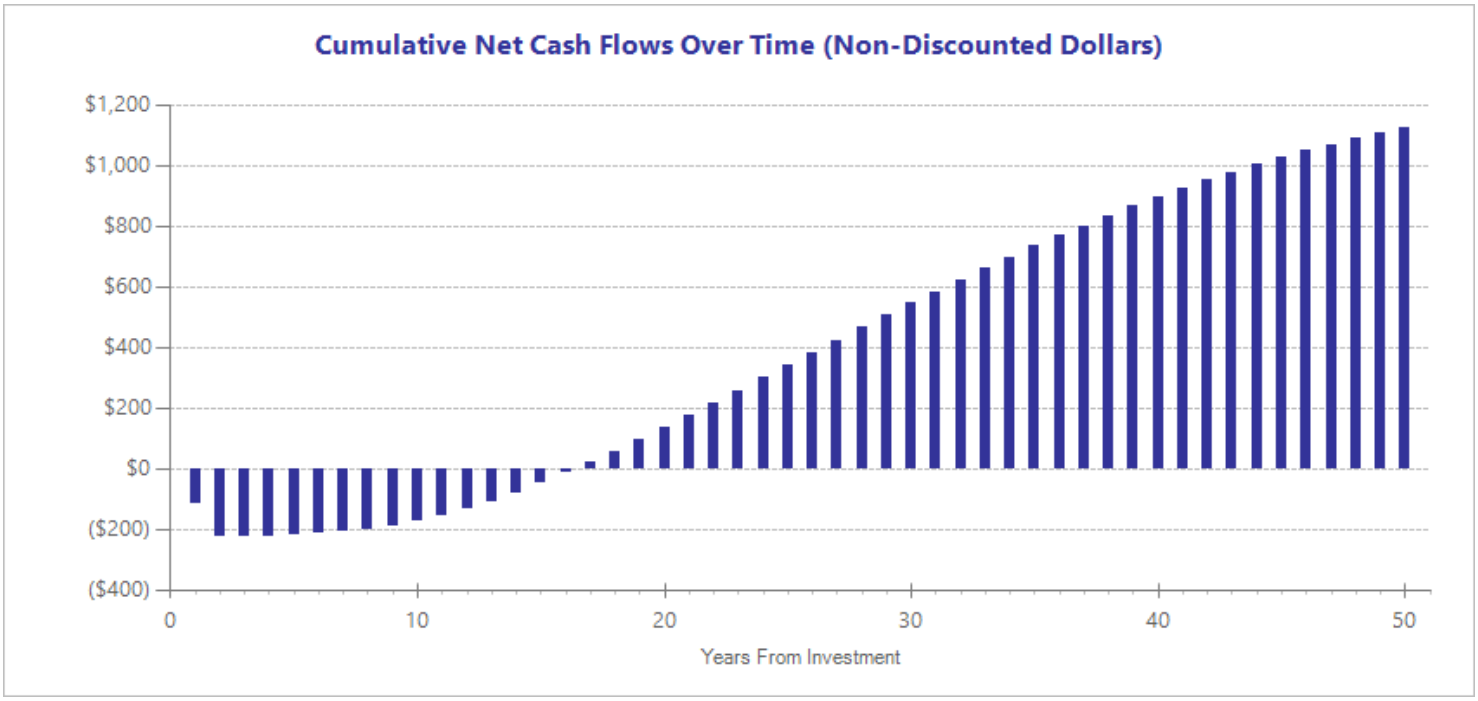
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$60	2	2002
Comparison costs	$0	2	2002

Summary statistics	
Present value of net program costs (in 2013 dollars)	($147)
Uncertainty (+ or - %)	10 %

$120 in 2002 dollars (Miller and Hendrie 2005)

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol use in high school	Primary	4	8497	-0.060	0.181	-0.029	0.024	15	-0.029	0.024	25
Smoking in high school	Primary	4	8501	-0.055	0.293	-0.017	0.025	15	-0.017	0.025	25
Cannabis use in high school	Primary	4	8517	-0.034	0.580	-0.012	0.050	15	-0.012	0.050	25

Citations Used in the Meta-Analysis

Bell, R.M., Ellickson, P.L., & Harrison, E.R. (1993). Do drug prevention effects persist into high school? How Project ALERT did with ninth graders. *Preventive Medicine*, *22*(4), 463-483.

Ellickson, P.L., McCaffrey, D.F., Ghosh-Dastidar, B., & Longshore, D.L. (2003). New inroads in preventing adolescent drug use: Results from a large-scale trial of Project ALERT in middle schools. *American Journal of Public Health*, *93*(11), 1830-1836.

Ringwalt, C.L., Clark, H.K., Hanley, S., Shamblen, S.R., Flewelling, R.L. (2009). Project ALERT: A cluster randomized trial. *Archives of Pediatrics and Adolescent Medicine*, *163*(7), 625-632.

St Pierre, T.L., Osgood, D.W., Mincemoyer, C.C., Kaltreider, D.L., & Kauh, T.J. (2005). Results of an independent evaluation of Project ALERT delivered in schools by cooperative extension. *Prevention Science*, *6*(4), 305-317.

Project Towards No Drug Abuse (TND)

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Project Towards No Drug Abuse is a substance use prevention program for youth in regular and alternative high schools. The curriculum comprises 12 45-minute lessons implemented in classroom settings by teachers or health educators. Using a variety of activities, the program aims to increase self-control, communication, decision-making, and motivation to not use substances.

Benefit-Cost Summary

Program benefits	
Participants	$102
Taxpayers	$46
Other (1)	$65
Other (2)	($31)
Total	$182
Costs	($64)
Benefits minus cost	$118

Summary statistics	
Benefit to cost ratio	$2.86
Benefits minus costs	$118
Probability of a positive net present value	53 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$5	$17	$3	$25
Labor market earnings (hs grad)	$103	$44	$51	$0	$197
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Health care (disruptive behavior disorder)	($1)	($3)	($3)	($1)	($9)
Adjustment for deadweight cost of program	$0	$0	$0	($32)	($32)
Totals	$102	$46	$65	($31)	$182

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

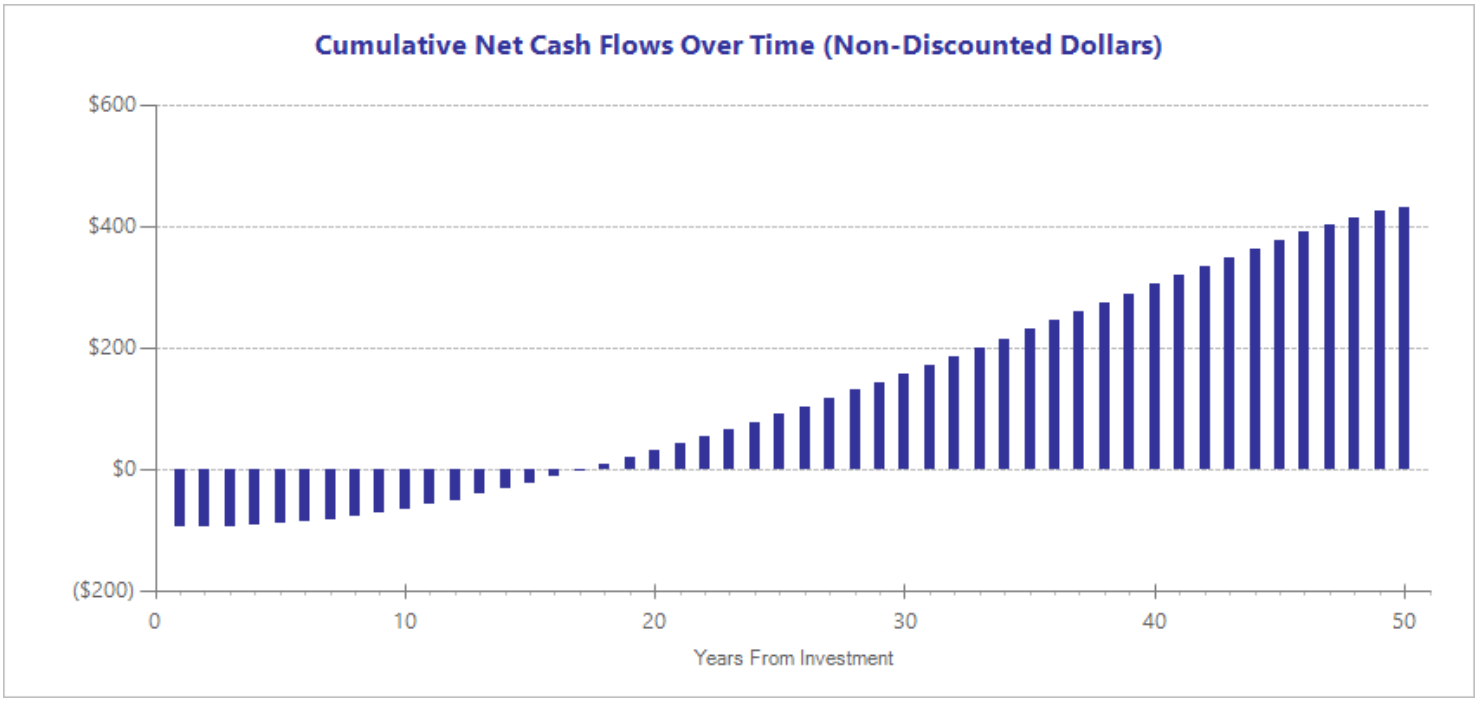
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$63	1	2012
Comparison costs	$0	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	($64)
Uncertainty (+ or - %)	10 %

Cost data come from program developer (http://tnd.usc.edu).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol use in high school	Primary	6	4467	-0.023	0.501	-0.007	0.034	18	-0.007	0.034	18
Illicit drug use in high school	Primary	6	4467	-0.080	0.021	-0.026	0.035	18	-0.026	0.035	18
Cannabis use in high school	Primary	6	4467	-0.042	0.215	-0.014	0.034	18	-0.014	0.034	18
Smoking in high school	Primary	6	4467	-0.029	0.384	-0.010	0.033	18	-0.010	0.033	18
Externalizing behavior symptoms	Primary	1	425	0.047	0.814	0.016	0.202	18	0.008	0.105	21

Citations Used in the Meta-Analysis

Rohrbach, L.A., Gunning, M., Sun, P., & Sussman, S. (2010). The Project Towards No Drug Abuse (TND) dissemination trial: Implementation fidelity and immediate outcomes. *Prevention Science*, *11*(1), 77-88.

Simon, T.R., Sussman, S., Dahlberg, L.L., & Dent, C.W. (2002). Influence of a substance-abuse-prevention curriculum on violence-related behavior. *American Journal of Health Behavior*, 26, 2.

Sun, W., Skara, S., Sun, P., Dent, C.W., & Sussman, S. (2006). Project Towards No Drug Abuse: Long-term substance use outcomes evaluation. *Preventive Medicine*, *42*(3), 188-192.

Sun, P., Sussman, S., Dent, C.W., & Rohrbach, L.A. (2008). One-year follow-up evaluation of Project Towards No Drug Abuse (TND-4). *Preventive Medicine*, *47*(4), 438-442.

Sussman, S., Sun, P., McCuller, W.J., & Dent, C.W. (2003). Project Towards No Drug Abuse: Two-year outcomes of a trial that compares health educator delivery to self-instruction. *Preventive Medicine*, *37*(2), 155-162.

Sussman, S., Sun, P., Rohrbach, L.A., & Spruijt-Metz, D. (2012). One-year outcomes of a drug abuse prevention program for older teens and emerging adults: evaluating a motivational interviewing booster component. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, *31*(4), 476-85.

Valente, T.W., Ritt-Olson, A., Stacy, A., Unger, J.B., Okamoto, J., & Sussman, S. (2007). Peer acceleration: Effects of a social network tailored substance abuse prevention program among high-risk adolescents. *Addiction*, *102*(11), 1804-1815.

Youth advocacy/empowerment programs for tobacco prevention

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Youth advocacy/empowerment programs encourage and empower youth to advocate for environmental changes regarding tobacco and other substance use in their communities. The program included in this analysis included weekly class sessions, a youth advocacy conference, and planning and implementation of community-advocacy projects. The program was designed to modify social influences on smoking, build awareness among youth of environmental influences on smoking, and engage youth in modification of the environmental influences.

Benefit-Cost Summary

Program benefits	
Participants	($67)
Taxpayers	($35)
Other (1)	($39)
Other (2)	($15)
Total	($155)
Costs	($22)
Benefits minus cost	($178)

Summary statistics	
Benefit to cost ratio	($6.92)
Benefits minus costs	($178)
Probability of a positive net present value	33 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (hs grad)	($66)	($28)	($33)	$0	($127)
Health care (smoking)	($1)	($7)	($6)	($3)	($17)
Adjustment for deadweight cost of program	$0	$0	$0	($11)	($11)
Totals	($67)	($35)	($39)	($15)	($155)

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

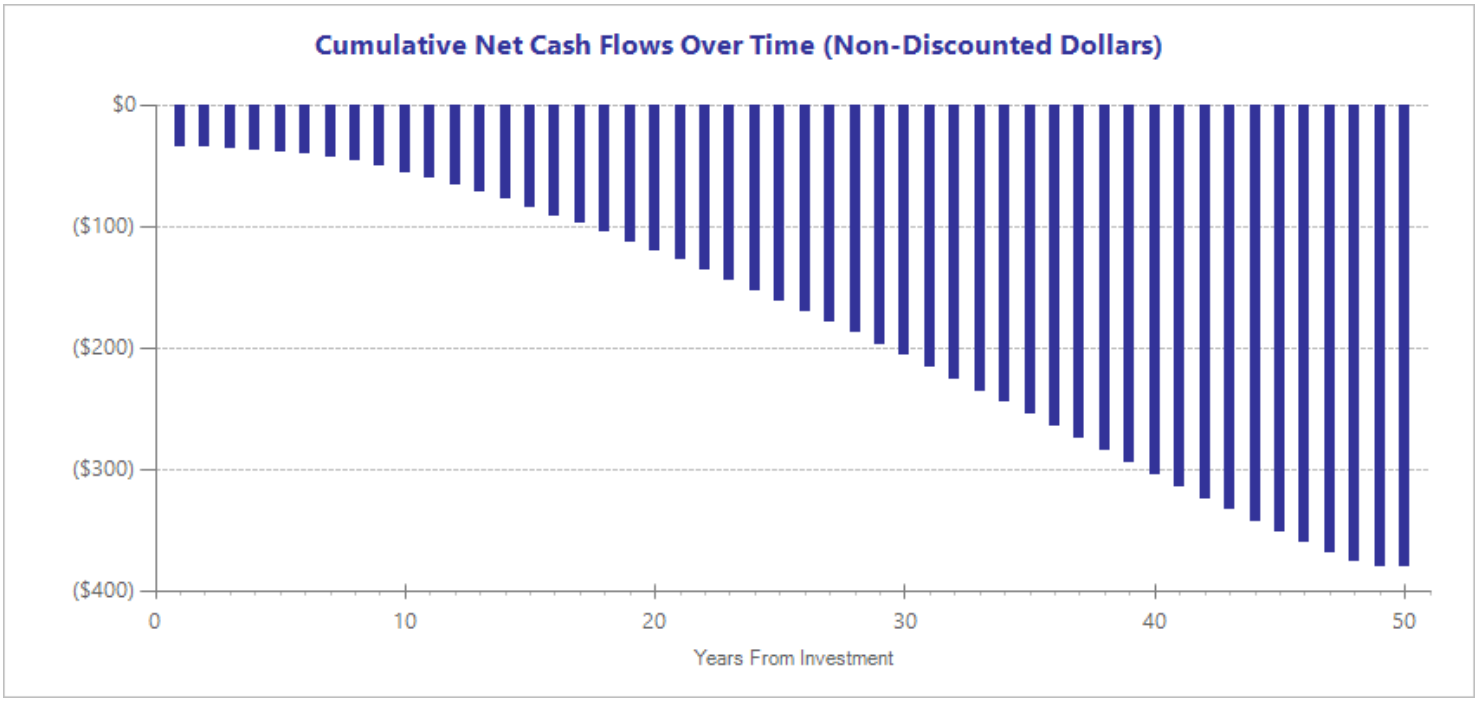
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$86	1	2014
Comparison costs	$63	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($22)
Uncertainty (+ or - %)	10 %

Based on the following calculations and costs for Washington State: Weekly 1.2-hour long session for 20 weeks at teacher rate of 78.99/hr, plus $300 for advocacy materials per class.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	1	367	0.014	0.420	0.005	0.017	17	0.005	0.017	18

Citations Used in the Meta-Analysis

Winkleby, M.A., Feighery, E., Dunn, M., Kole, S., Ahn, D., & Killen, J.D. (2004). Effects of an advocacy intervention to reduce smoking among teenagers. *Archives of Pediatrics & Adolescent Medicine*, *158*(3), 269-275.

Project SUCCESS

Benefit-cost estimates updated December 2014. Literature review updated August 2014.

Program Description: Project SUCCESS is a school-based prevention program that focuses on high-risk youth. The program's four components include 1) prevention education provided in small groups by a professional counselor; 2) individual and group counseling; 3) communications with parents; and 4) referrals to community agencies. A program counselor is situated in the school throughout the academic year.

Benefit-Cost Summary

Program benefits	
Participants	$10
Taxpayers	($19)
Other (1)	($80)
Other (2)	($89)
Total	($178)
Costs	($155)
Benefits minus cost	($333)

Summary statistics	
Benefit to cost ratio	($1.15)
Benefits minus costs	($333)
Probability of a positive net present value	42 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($24)	($79)	($12)	($114)
Labor market earnings (smoking)	$10	$4	$0	$0	$15
Health care (smoking)	$0	$0	$0	$0	$0
Property loss (alcohol abuse/dependence)	$0	$0	($1)	$0	($1)
Adjustment for deadweight cost of program	$0	$0	$0	($78)	($78)
Totals	$10	($19)	($80)	($89)	($178)

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

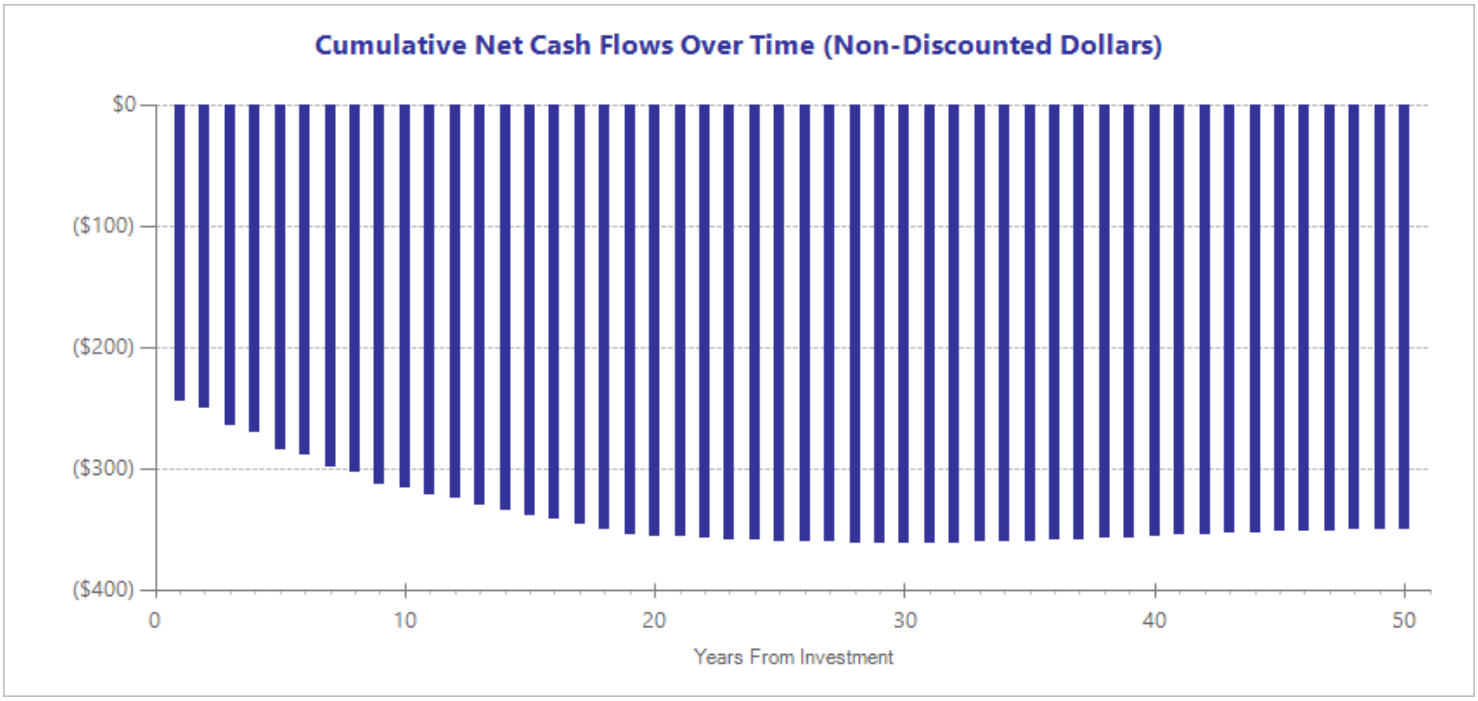
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$155	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($155)
Uncertainty (+ or - %)	10 %

To calculate a per-student annual cost, we use average compensation costs (including benefits) for a counselor as reported by the Office of the Superintendent of Public Instruction, divided by the number of students in a prototypical high school. The estimate also includes training costs available at the developer's website (http://www.sascorp.org/CurrentFiles/SUCCESS_Order_Form.pdf).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	1	169	-0.127	0.693	-0.042	0.321	17	-0.042	0.321	18
Regular smoking	Primary	1	666	0.000	0.999	0.000	0.052	17	0.000	0.052	18
Alcohol use in high school	Primary	1	667	0.020	0.698	0.020	0.052	17	0.020	0.052	18
Illicit drug use in high school	Primary	1	667	0.020	0.698	0.020	0.052	17	0.020	0.052	18
Cannabis use in high school	Primary	1	667	0.060	0.244	0.060	0.052	17	0.060	0.052	18

Citations Used in the Meta-Analysis

Clark, H.K., Ringwalt, C.L., Hanley, S., Shamblen, S.R., Flewelling, R.L., & Hano, M.C. (2010). Project SUCCESS' effects on the substance use of alternative high school students. *Addictive Behaviors, 35*(3), 209-217.

Morehouse, E.R., & Tobler, N.S. (2000). Project SUCCESS final report: Grant number 4 HD1 SP07240. Report submitted January 26, 2000, to the Center for Substance Abuse Prevention, U.S. Department of Health and Human Services.

InShape

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: InShape is a college-based brief motivational interviewing intervention that aims to increase physical activitity, diet, and stress management while reducing substance use through the promotion of positive self-image. The program components are typically delivered to young adults in a college health clinic setting by a designated fitness specialist. The first component includes a self-administered behavior image survey, followed by a brief (25-minute) motivational interview with the fitness specialist, and a set of recommendations to increase fitness and health through improved self-image.

Benefit-Cost Summary

Program benefits	
Participants	($246)
Taxpayers	($119)
Other (1)	$1
Other (2)	($31)
Total	($395)
Costs	($15)
Benefits minus cost	($410)

Summary statistics	
Benefit to cost ratio	($26.60)
Benefits minus costs	($410)
Probability of a positive net present value	46 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$8	$21	$4	$32
Labor market earnings (smoking)	($243)	($103)	$0	($15)	($361)
Health care (smoking)	($4)	($24)	($21)	($12)	($60)
Property loss (alcohol abuse/dependence)	$1	$0	$1	$0	$2
Adjustment for deadweight cost of program	$0	$0	$0	($7)	($7)
Totals	($246)	($119)	$1	($31)	($395)

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

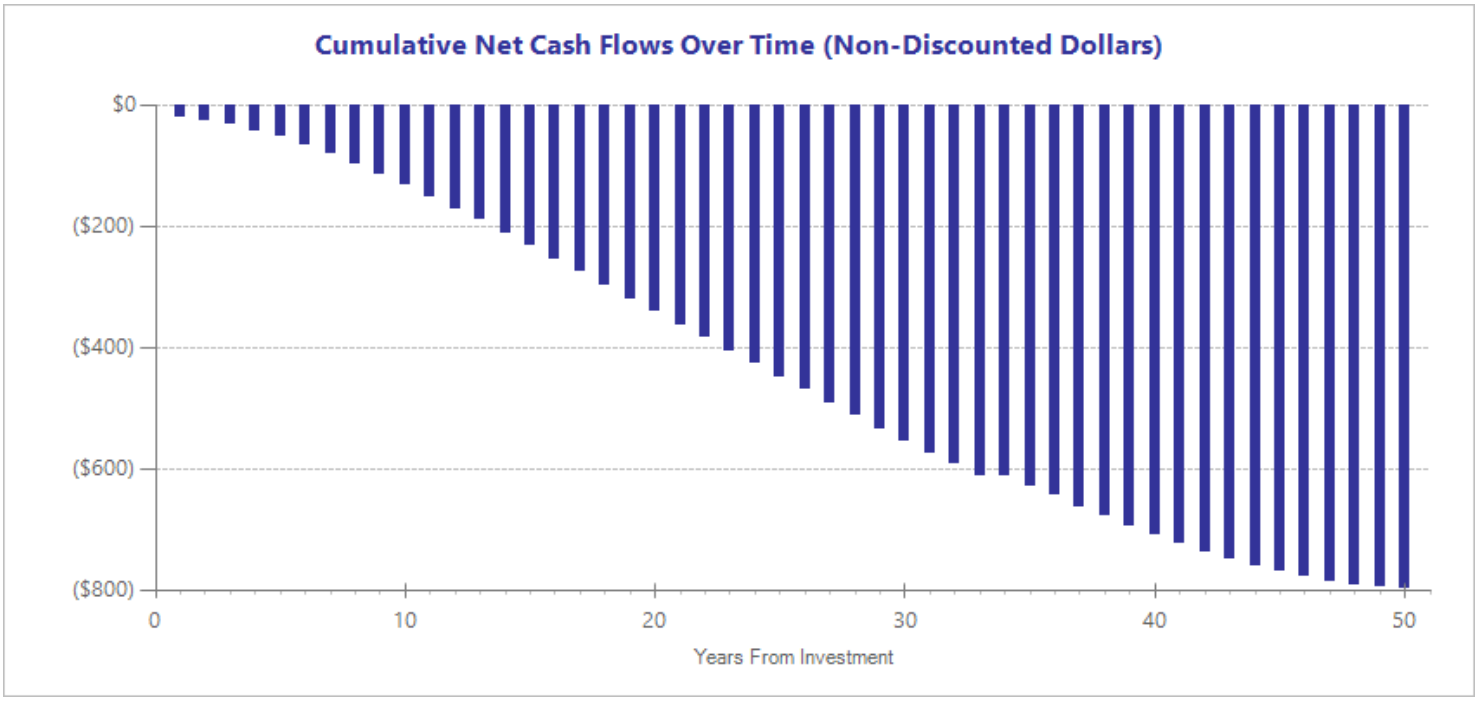
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$15	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($15)
Uncertainty (+ or - %)	10 %

Cost data come from developer website (http://preventionpluswellness.com/programs/inshape/).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Regular smoking	Primary	1	140	0.032	0.789	0.010	0.119	19	0.010	0.119	29
Alcohol use	Primary	1	140	-0.203	0.574	-0.067	0.119	19	-0.067	0.119	29
Youth binge drinking	Primary	1	140	-0.082	0.820	-0.027	0.119	19	-0.027	0.119	29
Cannabis use	Primary	1	140	0.093	0.433	0.031	0.119	19	0.031	0.119	29

Citations Used in the Meta-Analysis

Werch, C., Moore, M., Bian, H., DiClemente, C., Ames, S., Weiler, R., Thombs, D., ... Huang, I.C. (2008). Efficacy of a brief image-based multiple-behavior intervention for college students. *Annals of Behavioral Medicine, 36*(2), 149-157.

Werch, C.E., Moore, M. J., Bian, H., DiClemente, C.C., Huang, I.C., Ames, S.C., Thombs, D., ... Pokorny, S.B. (2010). Are effects from a brief multiple behavior intervention for college students sustained over time? *Preventive Medicine*, 50.

Reconnecting Youth

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Reconnecting Youth, a school-based curriculum program, is comprehensive and designed to address a variety of behaviors, such as attendence, academic acheivement, and disruptive behaviors such as substance abuse. The program targets youth who have been identified as already experimenting with drugs. By building life skills, fostering a bond to the school and family, and ecouraging self-esteem, the program aims to build positive resistance skills and decrease risk factors.

Benefit-Cost Summary

Program benefits	
Participants	($2,716)
Taxpayers	($1,385)
Other (1)	($1,552)
Other (2)	($495)
Total	($6,147)
Costs	($750)
Benefits minus cost	($6,897)

Summary statistics	
Benefit to cost ratio	($8.21)
Benefits minus costs	($6,897)
Probability of a positive net present value	0 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($5)	($20)	($3)	($28)
Labor market earnings (hs grad)	($2,678)	($1,142)	($1,323)	$0	($5,144)
Health care (smoking)	($37)	($237)	($208)	($118)	($601)
Property loss (alcohol abuse/dependence)	$0	$0	($1)	$0	($1)
Adjustment for deadweight cost of program	$0	$0	$0	($374)	($374)
Totals	($2,716)	($1,385)	($1,552)	($495)	($6,147)

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

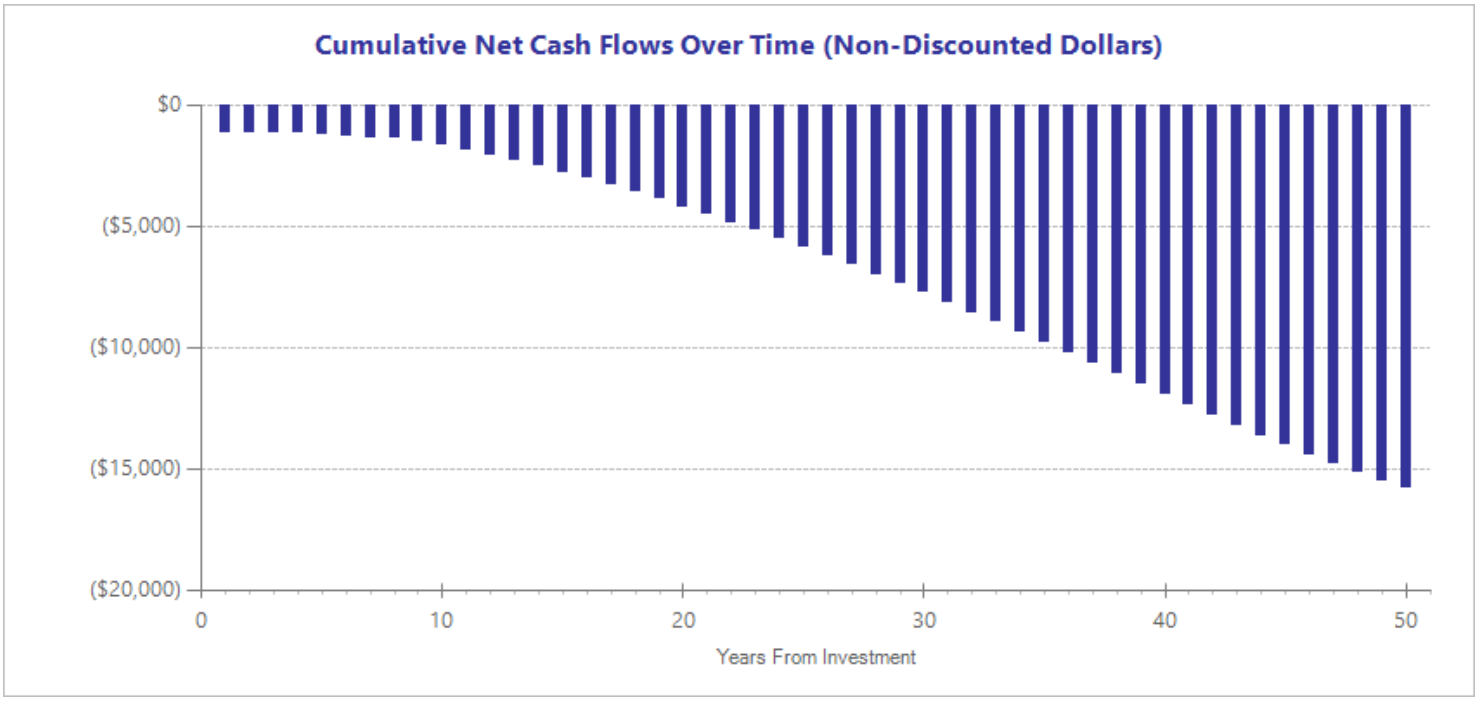
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$758	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($750)
Uncertainty (+ or - %)	10 %

Estimated from The National Registry of Evidence-based Programs and Practices.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	1	615	0.182	0.010	0.182	0.071	15	0.182	0.071	18
Alcohol use in high school	Primary	1	615	0.019	0.784	0.019	0.071	15	0.019	0.071	18

Citations Used in the Meta-Analysis

Cho, H., Hallfors, D.D., & Sanchez, V. (2005). Evaluation of a high school peer group intervention for at-risk youth. *Journal of Abnormal Child Psychology, 33*(3), 363-374.

Family-based tobacco and substance use prevention

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Family-based tobacco and substance use prevention programs involve both parents and children in order to prevent or decrease alcohol, tobacco, and other drug (ATOD) use. These programs often include interactive components, group sessions, and/or workbooks for the family to complete together. Often the programs aim to increase family communication, foster parenting skills, and improve knowledge about substance use. Two name-brand programs in this meta-analysis include Family Matters and Staying Connected with Your Teen.

Benefit-Cost Summary

Program benefits	
Participants	$2,411
Taxpayers	$1,357
Other (1)	$1,551
Other (2)	$89
Total	$5,407
Costs	($178)
Benefits minus cost	$5,229

Summary statistics	
Benefit to cost ratio	$30.46
Benefits minus costs	$5,229
Probability of a positive net present value	93 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$30	$92	$15	$136
Labor market earnings (hs grad)	$2,351	$1,003	$1,162	$0	$4,516
Property loss (alcohol abuse/dependence)	$4	$0	$7	$0	$10
Health care (illicit drug abuse/dependence)	$56	$324	$290	$163	$833
Adjustment for deadweight cost of program	$0	$0	$0	($89)	($89)
Totals	$2,411	$1,357	$1,551	$89	$5,407

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

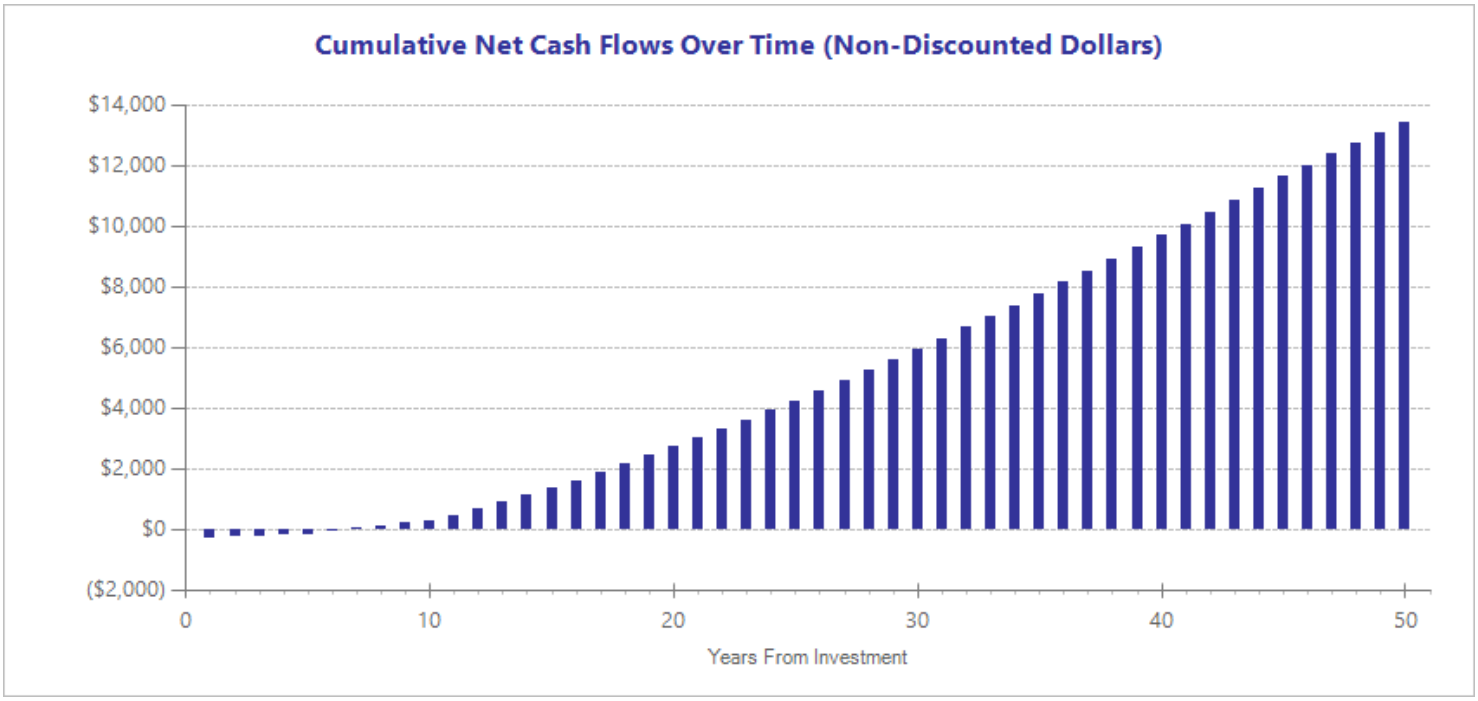
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$140	1	2001
Comparison costs	$0	1	2001

Summary statistics	
Present value of net program costs (in 2013 dollars)	($178)
Uncertainty (+ or - %)	10 %

Cost from Bauman, K.E., V.A. Foshee, S.T. Ennett, K.A. Hicks, and M. Pemberton. (2001). Family Matters: A family-directed program designed to prevent adolescent tobacco and alcohol use. Health Promotion Practice 2(1), 92.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	3	615	-0.215	0.005	-0.214	0.076	15	-0.214	0.076	18
Alcohol use in high school	Primary	3	615	-0.202	0.007	-0.194	0.074	15	-0.194	0.074	18
Cannabis use in high school	Primary	2	84	-0.162	0.654	-0.044	0.223	16	-0.044	0.223	18
Initiation of sexual activity	Primary	2	84	-0.017	0.970	-0.003	0.205	16	-0.003	0.205	18
Illicit drug use in high school	Primary	2	84	-0.361	0.372	-0.137	0.405	16	-0.137	0.405	18

Citations Used in the Meta-Analysis

Bauman, K.E., Ennett, S.T., Foshee, V.A., Pemberton, M., King, T.S., & Koch, G.G. (2002). Influence of a family program on adolescent smoking and drinking prevalence. *Prevention Science*, *3*(1), 35-42.

Haggerty, K., Skinner, M., MacKenzie, E., & Catalano, R. (2007). A randomized trial of parents who care: Effects on key outcomes at 24-month follow-up. *Prevention Science*, *8*(4), 249-260.

Strengthening Families for Parents and Youth 10-14

Benefit-cost estimates updated December 2014. Literature review updated April 2012.

Program Description: Strengthening Families for Parents and Youth 10-14 (also known as the Iowa Strengthening Families Program) is a family-based program that attempts to reduce behavior problems and substance use by enhancing parenting skills, parent-child relationships, and family communication. The seven-week intervention is designed for 6th-grade students and their families.

Benefit-Cost Summary

Program benefits	
Participants	$2,055
Taxpayers	$981
Other (1)	$1,308
Other (2)	($494)
Total	$3,850
Costs	($1,098)
Benefits minus cost	$2,751

Summary statistics	
Benefit to cost ratio	$3.51
Benefits minus costs	$2,751
Probability of a positive net present value	66 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$92	$273	$46	$410
Labor market earnings (hs grad)	$2,048	$874	$1,013	$0	$3,936
Property loss (alcohol abuse/dependence)	$1	$0	$3	$0	$4
Health care (disruptive behavior disorder)	$5	$15	$19	$8	$47
Adjustment for deadweight cost of program	$0	$0	$0	($547)	($547)
Totals	$2,055	$981	$1,308	($494)	$3,850

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

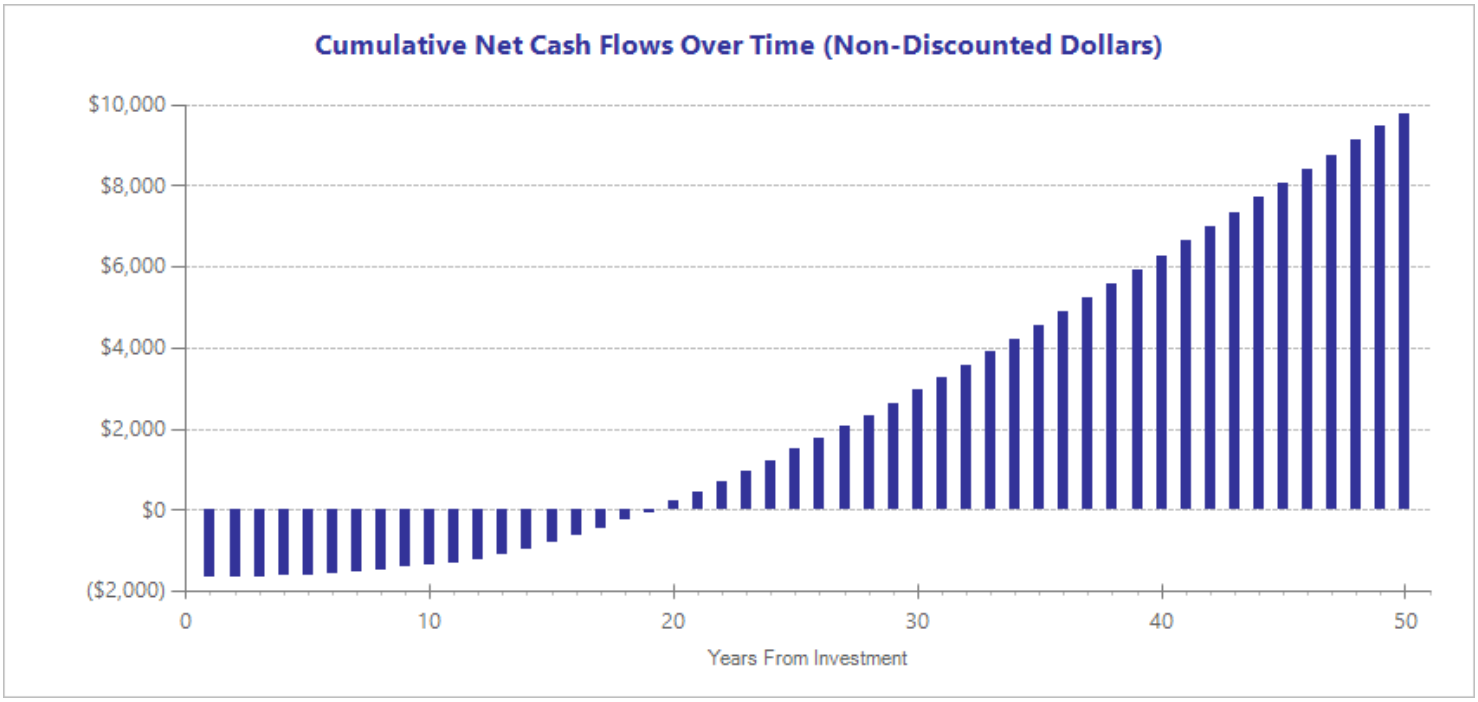
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$880	1	2002
Comparison costs	$0	1	2002

Summary statistics	
Present value of net program costs (in 2013 dollars)	($1,098)
Uncertainty (+ or - %)	10 %

$880 per family; See Miller, T.R., & Hendrie, D. (2005). How should governments spend the drug prevention dollar?: A buyer's guide. In T. Stockwell, P. Gruenewald, J. Toumbourou, & W. Loxley (Eds.), Preventing harmful substance use (pp. 415-431). England: John WIley & Sons Ltd.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Disruptive behavior disorder symptoms	Primary	1	152	-0.246	0.172	-0.081	0.181	13	-0.039	0.095	16
Smoking in high school	Primary	1	152	-0.523	0.222	-0.172	0.222	15	-0.172	0.222	18
Alcohol use in high school	Primary	1	152	-0.210	0.359	-0.069	0.228	15	-0.069	0.228	18
Cannabis use in high school	Primary	1	152	-0.874	0.011	-0.288	0.345	15	-0.288	0.345	18
Illicit drug use in high school	Primary	1	151	-0.317	0.038	-0.105	0.153	15	-0.105	0.153	18
Alcohol use before end of middle school	Primary	1	153	-0.387	0.036	-0.128	0.184	13	-0.128	0.184	18

Citations Used in the Meta-Analysis

Spoth, R., Redmond, C., & Lepper, H. (1999). Alcohol initiation outcomes of universal family-focused preventive interventions: One- and two-year follow-ups of a controlled study. *Journal of Studies on Alcohol*, 13, 103-111.

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Spoth, R.L., Redmond, C., & Shin, C. (2000). Reducing adolescents' aggressive and hostile behaviors: Randomized trial effects of a brief family intervention 4 years past baseline. *Archives of Pediatrics & Adolescent Medicine*, *154*(12), 1248-1258.

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Spoth, R.L., Clair, S., Shin, C., & Redmond, C. (2006). Long-term effects of universal preventive interventions on methamphetamine use among adolescents. *Archives of Pediatrics & Adolescent Medicine*, *160*(9), 876-882.

Trudeau, L., Spoth, R., Randall, G., & Azevedo, K. (2007). Longitudinal Effects of a Universal Family-Focused Intervention on Growth Patterns of Adolescent Internalizing Symptoms and Polysubstance Use: Gender Comparisons. *Journal of Youth and Adolescence*, *36*(6), 725-740.

Guiding Good Choices (formerly Preparing for the Drug Free Years)

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Guiding Good Choices, formerly known as Preparing for the Drug-Free Years, is a skills-training program for middle school students and their parents typically implemented outside normal school hours. The five-session drug resistance and education program, implemented one night per week for five weeks, aims to improve parent-child interactions that reduce the risk for substance use initiation. Sessions typically last two hours each and include a mix of group discussions, workbook activities, role plays, and multimedia presentations. Program content includes education about the prevalence of substance use and risk and protective factors associated with use, and the development of strategies in the home to prevent use (Session 1), establishing expectations and guidelines within the home regarding substance use (Session 2), education and opportunities to practice refusal skills (Session 3), managing family conflict and constructively handling disputes between family members (Session 4), and strategies for engaging the adolescent in family activities and ways to create supportive networks among parents (Session 5). Parents are required to attend all five sessions while the adolescents is required to attend Session 3.

Benefit-Cost Summary

Program benefits	
Participants	$993
Taxpayers	$526
Other (1)	$171
Other (2)	($272)
Total	$1,419
Costs	($654)
Benefits minus cost	$765

Summary statistics	
Benefit to cost ratio	$2.17
Benefits minus costs	$765
Probability of a positive net present value	61 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$35	$104	$17	$156
Health care (smoking)	$12	$73	$64	$37	$186
Labor market earnings (alcohol abuse/dependence)	$980	$418	$0	$1	$1,399
Property loss (alcohol abuse/dependence)	$1	$0	$3	$0	$4
Adjustment for deadweight cost of program	$0	$0	$0	($327)	($327)
Totals	$993	$526	$171	($272)	$1,419

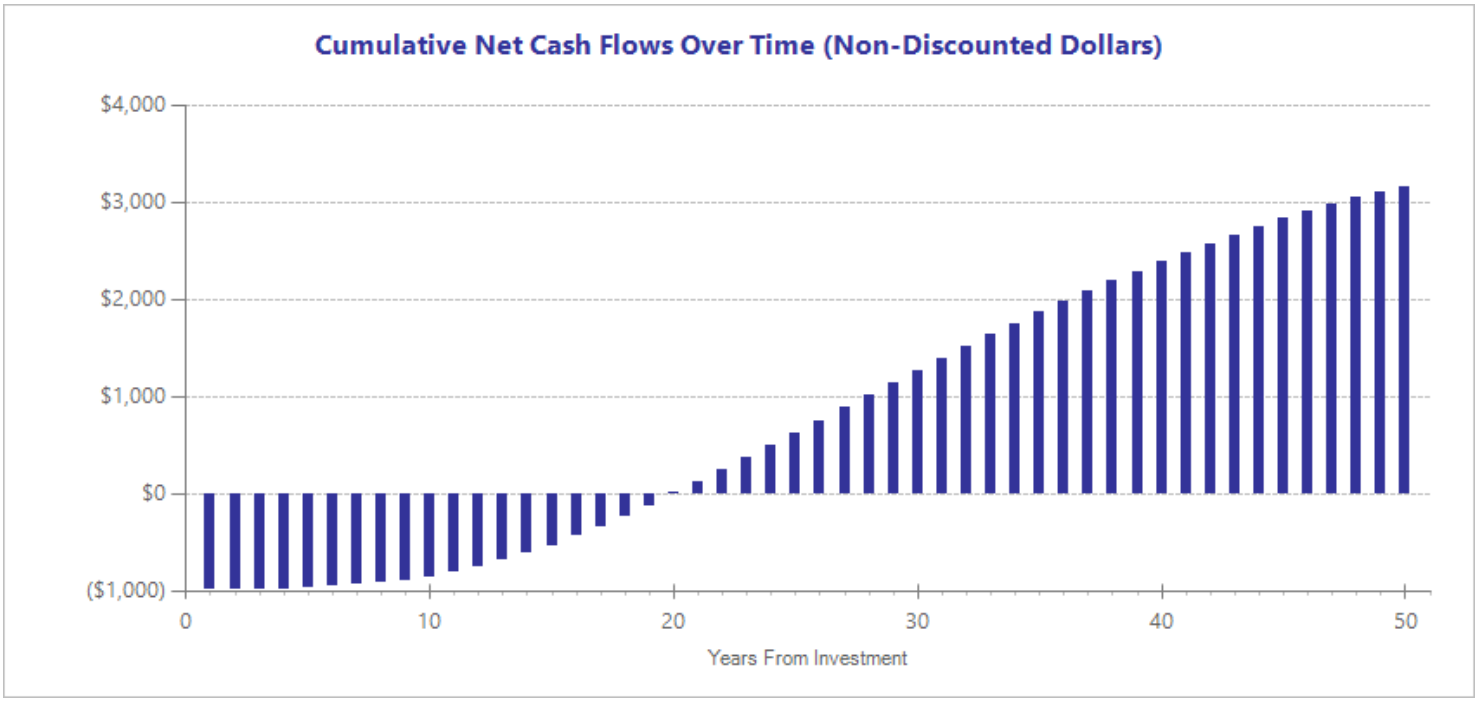
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$655	1	2013	Present value of net program costs (in 2013 dollars)	($654)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	10 %

Cost data come from Spoth, R.L., Guyll, M., & Day, S.X. (2002). Universal family-focused interventions in alcohol-use disorder prevention: Cost-effectiveness and cost-benefit analyses of two interventions. Journal of Studies on Alcohol and Drugs, 63(2), 219.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol use in high school	Primary	1	146	-0.256	0.030	-0.085	0.118	16	-0.085	0.118	18
Cannabis use in high school	Primary	1	143	-0.305	0.345	-0.101	0.324	16	-0.101	0.324	18
Smoking in high school	Primary	1	144	-0.187	0.175	-0.062	0.138	16	-0.062	0.138	18
Internalizing symptoms	Primary	1	149	-0.237	0.189	-0.078	0.180	18	-0.057	0.142	20
Illicit drug use in high school	Primary	2	261	-0.082	0.619	-0.027	0.164	16	-0.027	0.164	18

Citations Used in the Meta-Analysis

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Spoth, R.L., Clair, S., Shin, C., & Redmond, C. (2006). Long-term effects of universal preventive interventions on methamphetamine use among adolescents. *Archives of Pediatrics & Adolescent Medicine*, *160*(9), 876-882.

Spoth, R.L., Redmond, C., & Shin, C. (2001). Randomized trial of brief family interventions for general populations: Adolescent substance use outcomes 4 years following baseline. *Journal of Consulting and Clinical Psychology*, *69*(4), 627-642.

Spoth, R., Trudeau, L., Guyll, M., Shin, C., & Redmond, C. (2009). Universal intervention effects on substance use among young adults mediated by delayed adolescent substance initiation. *Journal of Consulting and Clinical Psychology*, *77*(4), 620-32.

Family Check-Up (also known as Positive Family Support)

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Positive Family Support/Family Check-Up (formerly Adolescent Transitions Program) is a three-tiered intervention implemented in middle schools. The first level is a universal component that involves the establishment of a family resource center and the implementation of a six-week prevention curriculum. The second tier is Family Check-Up, an assessment and brief motivational interview component for students identified as at-risk. The third tier is the Family Intervention Menu, which directs parents of substance-using adolescents to treatment options, parenting groups, and family therapy sessions. Our review is of the entire Positive Family Support model and not solely the second tier Family Check-Up component.

Benefit-Cost Summary

Program benefits	
Participants	$0
Taxpayers	$51
Other (1)	$155
Other (2)	($137)
Total	$68
Costs	($323)
Benefits minus cost	($255)

Summary statistics	
Benefit to cost ratio	$0.21
Benefits minus costs	($255)
Probability of a positive net present value	47 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$48	$148	$24	$220
Property loss (alcohol abuse/dependence)	$1	$0	$2	$0	$4
Labor market earnings (major depression)	($3)	($1)	$0	$0	($4)
Health care (major depression)	$1	$4	$4	$1	$11
Adjustment for deadweight cost of program	$0	$0	$0	($162)	($162)
Totals	$0	$51	$155	($137)	$68

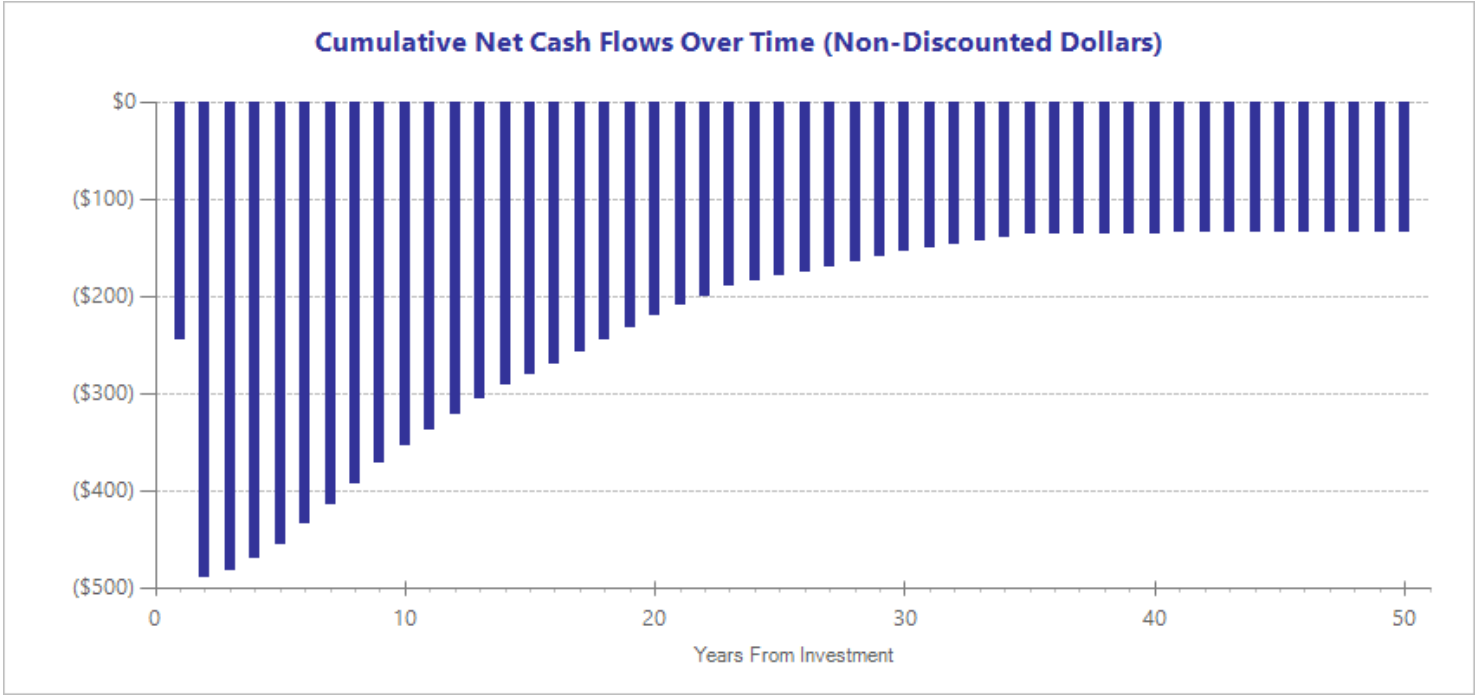
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$164	2	2013	Present value of net program costs (in 2013 dollars)	($323)
Comparison costs	$0	2	2013	Uncertainty (+ or - %)	10 %

Cost data come from Blueprints for Healthy Youth Development (http://www.blueprintsprograms.com/programCosts.php?pid=b16a457a3302d7c1f4563df2ffc96dccf3779af7).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	1	386	-0.727	0.001	-0.240	0.209	13	-0.240	0.209	18
Smoking in high school	Primary	1	500	-0.145	0.342	-0.048	0.153	14	-0.048	0.153	18
Alcohol use before end of middle school	Primary	1	386	-0.350	0.092	-0.116	0.208	13	-0.116	0.208	18
Alcohol use in high school	Primary	1	500	-0.050	0.741	-0.017	0.152	18	-0.017	0.152	18
Cannabis use before end of middle school	Primary	1	386	-0.305	0.142	-0.101	0.208	13	-0.101	0.208	18
Cannabis use in high school	Primary	1	500	-0.126	0.410	-0.041	0.153	18	-0.041	0.153	18
Major depressive disorder	Primary	1	52	-0.296	0.527	-0.098	0.469	15	0.000	0.039	16
Externalizing behavior symptoms	Primary	1	500	-0.012	0.939	-0.004	0.152	19	-0.002	0.079	22
Crime	Primary	1	500	-0.039	0.932	-0.013	0.152	18	-0.013	0.152	28
Grade point average	Primary	1	500	-0.062	0.685	-0.020	0.152	18	-0.020	0.152	18

Citations Used in the Meta-Analysis

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Stormshak, E.A., Connell, A., & Dishion, T.J. (2009). An adaptive approach to family-centered intervention in schools: Linking intervention engagement to academic outcomes in middle and high school. *Prevention Science*, *10*(3), 221-235.

Stormshak, E.A., Connell, A.M., Veronneau, M.H., Myers, M.W., Dishion, T.J., Kavanagh, K., & Caruthers, A.S. (2011). An ecological approach to promoting early adolescent mental health and social adaptation: Family-centered intervention in public middle schools. *Child Development*, *82*(1), 209-225.

Van, R.M.J., & Dishion, T.J. (2012). The impact of a family-centered intervention on the ecology of adolescent antisocial behavior: modeling developmental sequelae and trajectories during adolescence. *Development and Psychopathology*, *24*(3), 1139-55.

Mentoring for students: community-based (with volunteer costs)

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: In community-based mentoring programs, volunteer adults are paired with at-risk middle- and high-school students to meet weekly at locations of their choosing for relationship building and guidance. Community-based organizations provide the adult mentors with training and oversight. Mentors are expected to build relationships with mentees with the aim of improving a variety of outcomes including crime rates, academic achievement, and substance abuse. This analysis includes evaluation findings (in no particular order) for the Washington State Mentors program, Big Brothers Big Sisters, Across Ages, Sponsor-a-Scholar, Career Beginnings, the Buddy System, and other, locally developed programs.

Benefit-Cost Summary

Program benefits	
Participants	$6,946
Taxpayers	$3,513
Other (1)	$1,587
Other (2)	($1,353)
Total	$10,694
Costs	($3,193)
Benefits minus cost	$7,501

Summary statistics	
Benefit to cost ratio	$3.36
Benefits minus costs	$7,501
Probability of a positive net present value	60 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($399)	($1,242)	($200)	($1,841)
Labor market earnings (hs grad)	$7,060	$3,011	$3,491	$0	$13,562
Property loss (alcohol abuse/dependence)	$2	$0	$3	$0	$5
Health care (educational attainment)	($115)	$901	($665)	$454	$575
Adjustment for deadweight cost of program	$0	$0	$0	($1,607)	($1,607)
Totals	$6,946	$3,513	$1,587	($1,353)	$10,694

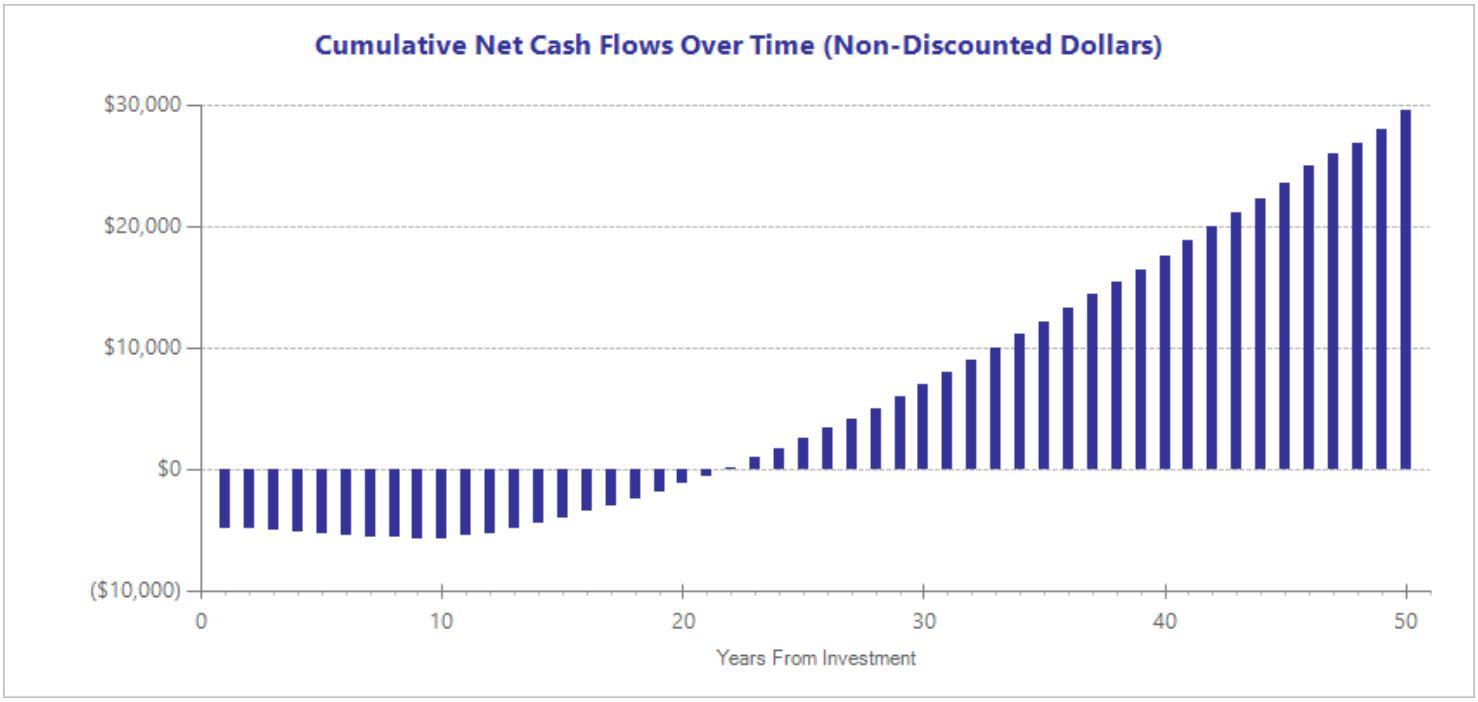
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,748	1	2005	Present value of net program costs (in 2013 dollars)	($3,193)
Comparison costs	$0	1	2005	Uncertainty (+ or - %)	10 %

Cost estimates are based on the Big Brothers/Big Sisters program as described in Herrera, C., Grossman, J.B., Kauh, T.J., Feldman, A.F., & McMaken, J. (2007). *Making a difference in schools: The Big Brothers Big Sisters school-based mentoring impact study.* Philadelphia, PA: Public/Private Ventures. The cost of volunteer time is based on the Office of Financial Management State Data Book average adult salary for 2012 multiplied by 1.44 to account for benefits. In the evaluated community-based programs, mentors meet with mentees, on average, once per week over the course of one year. Cost estimates exclude donated space.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Grade point average	Primary	5	1157	0.095	0.027	0.077	0.043	14	0.077	0.043	17
School attendance	Primary	4	996	0.007	0.886	-0.005	0.114	14	-0.005	0.114	17
High school graduation	Primary	2	758	0.293	0.040	0.101	0.143	18	0.101	0.143	18
Crime	Primary	6	1877	0.093	0.025	0.082	0.041	14	0.082	0.041	24
Alcohol use before end of middle school	Primary	1	85	-0.295	0.178	-0.091	0.219	14	-0.091	0.219	17
Cannabis use before end of middle school	Primary	1	85	-0.179	0.412	-0.056	0.218	14	-0.056	0.218	17
Smoking in high school	Primary	1	43	-0.212	0.343	-0.212	0.223	17	-0.212	0.223	17
Illicit drug use in high school	Primary	1	487	-0.406	0.005	-0.406	0.143	17	-0.406	0.143	17

Citations Used in the Meta-Analysis

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Buman, B., & Cain, R. (1991). *The impact of short term, work oriented mentoring on the employability of low-income youth.* (Available from Minneapolis Employment and Training Program, Minneapolis, MN).

Cave, G., & Quint, J. (1990). *Career Beginnings impact evaluation: Findings from a program for disadvantaged high school students.* New York: MDRC.

Fo, W.S.O., & O'Donnell, C.R. (1979). The Buddy System: Relationship and contingency conditions in a community intervention program for youth with nonprofessionals as behavior change agents. In J. S. Stumphauzer (Ed.), *Progress in behavior therapy with delinquents* (pp.302-316). Springfield, IL: Charles C. Thomas.

Grossman, J.B., & Tierney, J.P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters program. *Evaluation Review*, *22*(3), 403-426.

Hanlon, T.E., Bateman, R.W., Simon, B.D., O'Grady, K.E., & Carswell, S.B. (2002). An early community-based intervention for the prevention of substance abuse and other delinquent behavior. *Journal of Youth and Adolescence*, *31*(6), 459-471.

Harmon, M.A. (1996). Reducing drug use among pregnant and parenting teens: A program evaluation and theoretical examination. *Dissertation Abstracts International*, *56*(08), 3319A.

Herrera, C., DubBois, D.L., & Grossman, J.B. (2013). *The Role of Risk: Mentoring Experiences and Outcomes for Youth with Varying Risk Profiles.* Philadelphia, PA: Public/Private Ventures, MDRC.

Johnson, A. (1999). *Sponsor-a-Scholar: Long-term impacts of a youth mentoring program on student performance* (Document No. PR99-99). Princeton, NJ: Mathematica Policy Research.

O'Donnell, C.R., Lydgate, T., & Fo, W.S.O. (1979). The Buddy System: Review and follow-up. *Child Behavior Therapy*, 1, 161-169.

Project STAR

Benefit-cost estimates updated December 2014. Literature review updated July 2014.

Program Description: Also known as the Midwestern Prevention Project, Project STAR is a multi-component prevention program with the goal of reducing adolescent tobacco, alcohol, and marijuana use. The program consists of a 6th- and 7th-grade intervention supported by parent, community, and mass media components that adress the multiple influences of substance use.

Benefit-Cost Summary

Program benefits	
Participants	$1,994
Taxpayers	$1,049
Other (1)	$1,364
Other (2)	($147)
Total	$4,261
Costs	($499)
Benefits minus cost	$3,761

Summary statistics	
Benefit to cost ratio	$8.55
Benefits minus costs	$3,761
Probability of a positive net present value	97 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$92	$285	$46	$423
Labor market earnings (hs grad)	$1,975	$842	$976	$0	$3,793
Health care (smoking)	$18	$114	$100	$57	$290
Property loss (alcohol abuse/dependence)	$2	$0	$3	$0	$5
Adjustment for deadweight cost of program	$0	$0	$0	($250)	($250)
Totals	$1,994	$1,049	$1,364	($147)	$4,261

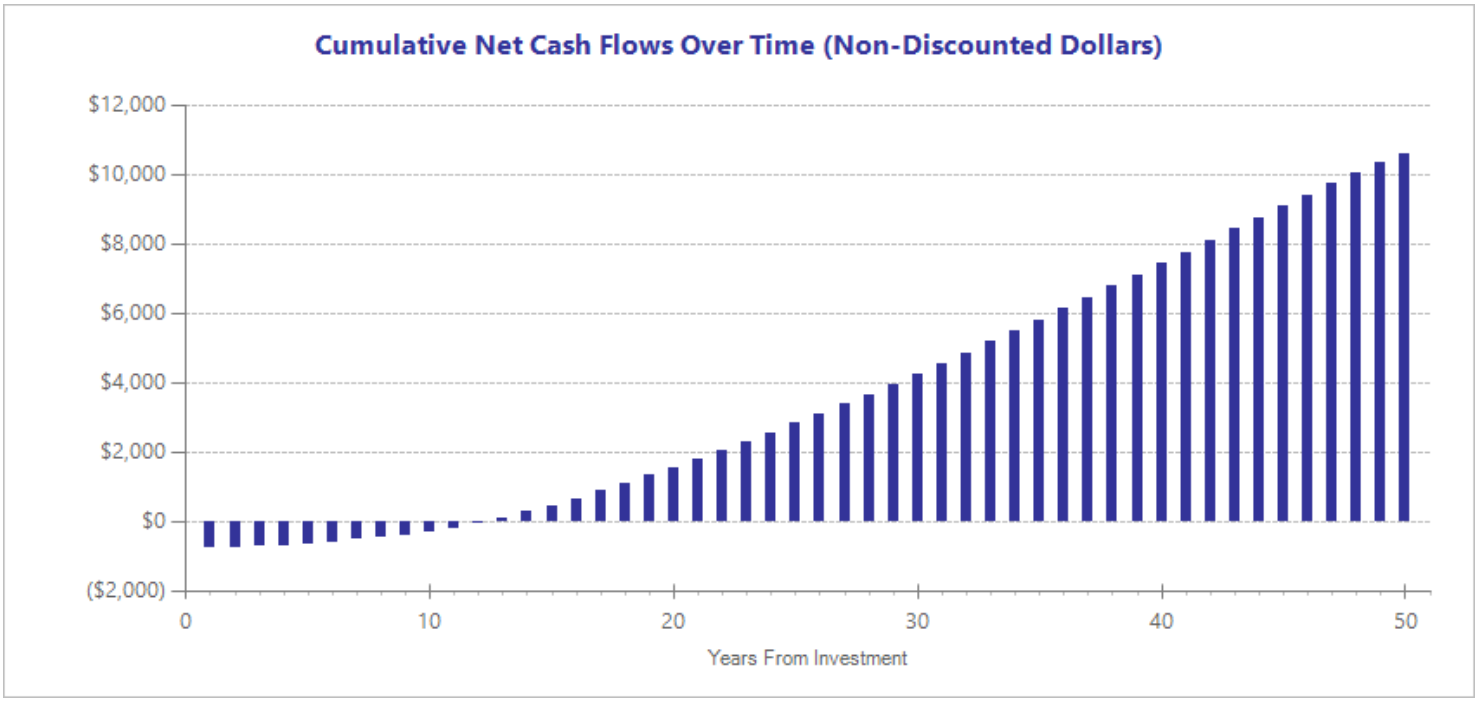
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$400	1	2002	Present value of net program costs (in 2013 dollars)	($499)
Comparison costs	$0	1	2002	Uncertainty (+ or - %)	10 %

$400 per pupil; See Miller, T.R., & Hendrie, D. (2005). How should governments spend the drug prevention dollar?: A buyer's guide. In T. Stockwell, P. Gruenewald, J. Toumbourou, & W. Loxley (Eds.), Preventing harmful substance use (pp. 415-431). England: John WIley & Sons Ltd.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol use in high school	Primary	2	4915	-0.272	0.001	-0.090	0.058	15	-0.090	0.058	25
Cannabis use in high school	Primary	2	4915	-0.798	0.001	-0.263	0.105	15	-0.263	0.105	25
Smoking in high school	Primary	2	4915	-0.281	0.001	-0.093	0.058	15	-0.093	0.058	25

Citations Used in the Meta-Analysis

Chou, C.P., Montgomery, S., Pentz, M.A., Rohrbach, L.A., Johnson, C.A., Flay, B.R., & MacKinnon, D.P. (1998). Effects of a community-based prevention program on decreasing drug use in high-risk adolescents. *American Journal of Public Health*, *88*(6), 944-948.

Pentz, M.A., Dwyer, J.H., MacKinnon, D.P., Flay, B.R., Hansen, W.B., Wang, E.Y., Johnson, C.A. (1989). A multicommunity trial for primary prevention of adolescent drug abuse: Effects on drug use prevalence. *JAMA*, *261*(22), 3259

Communities That Care

Benefit-cost estimates updated December 2014. Literature review updated April 2012.

Program Description: Communities that Care (CTC) is a coalition-based community prevention program that aims to prevent youth problem behaviors including underage drinking, tobacco use, violence, delinquency, school dropout, and substance abuse. CTC works through a community board to assess risk and protective factors among the youth in their community. The board works to implement tested and effective programs to address the issues and needs that are identified.

Benefit-Cost Summary

Program benefits	
Participants	$691
Taxpayers	$561
Other (1)	$726
Other (2)	($151)
Total	$1,826
Costs	($573)
Benefits minus cost	$1,253

Summary statistics	
Benefit to cost ratio	$3.25
Benefits minus costs	$1,253
Probability of a positive net present value	85 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$226	$686	$112	$1,024
Health care (smoking)	$7	$43	$38	$22	$110
Labor market earnings (alcohol abuse/dependence)	$683	$291	$0	$1	$975
Property loss (alcohol abuse/dependence)	$1	$0	$2	$0	$3
Adjustment for deadweight cost of program	$0	$0	$0	($285)	($285)
Totals	$691	$561	$726	($151)	$1,826

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

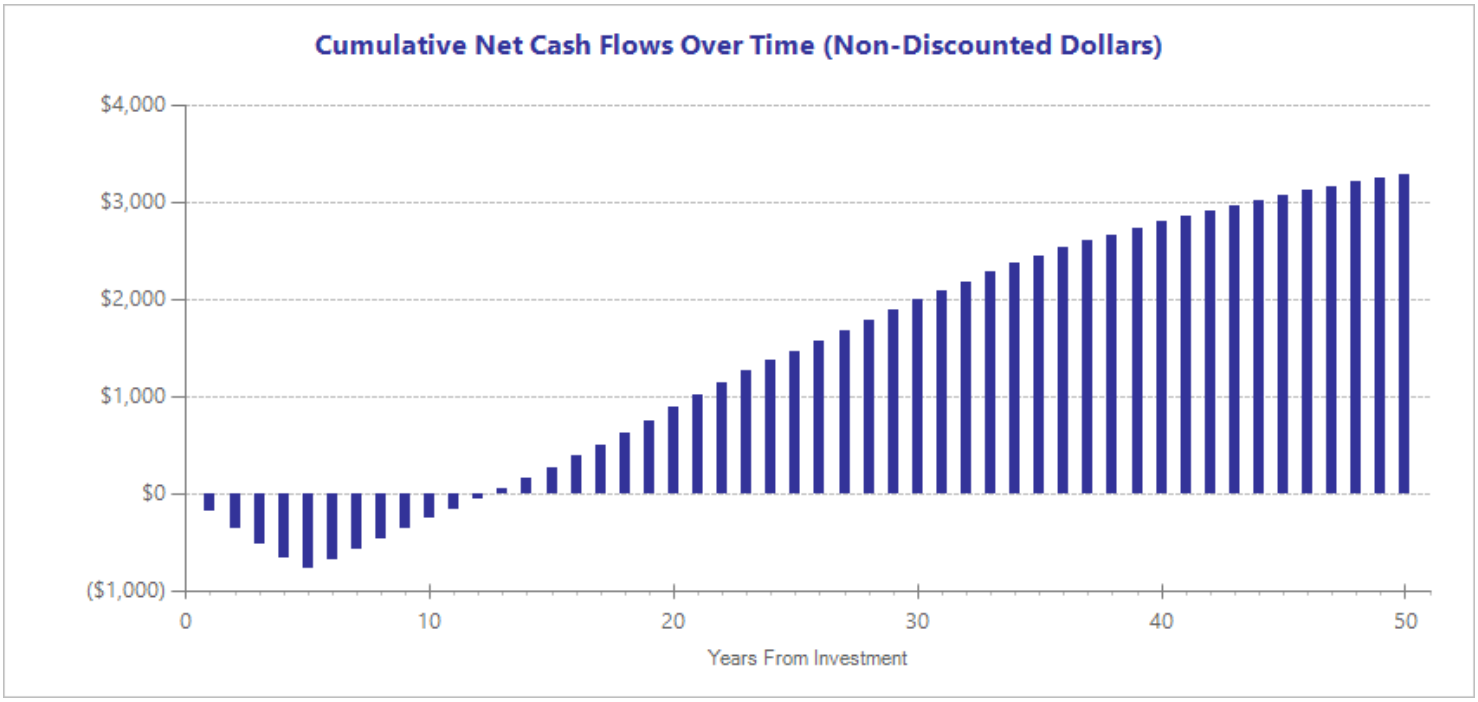
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$103	5	2004
Comparison costs	$0	1	2004

Summary statistics	
Present value of net program costs (in 2013 dollars)	($573)
Uncertainty (+ or - %)	35 %

Weighted average of per-child costs across twelve CtC demonstration communities. Provided by M. Kuklinski, Social Development Research Group, January 2013.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	1926	-0.135	0.001	-0.051	0.042	16	-0.051	0.042	26
Smoking in high school	Primary	1	2227	-0.092	0.017	-0.035	0.039	16	-0.035	0.039	26
Alcohol use in high school	Primary	1	1917	-0.150	0.001	-0.057	0.045	16	-0.057	0.045	26
Cannabis use in high school	Primary	1	2395	-0.041	0.291	-0.015	0.039	16	-0.015	0.039	26
Illicit drug use in high school	Primary	1	2372	-0.039	0.314	-0.015	0.039	16	-0.015	0.039	26

Citations Used in the Meta-Analysis

Kuklinski, M.R., Briney, J.S., Hawkins, J.D., & Catalano, R.F. (2012). Cost-benefit analysis of communities that care outcomes at eighth grade. *Prevention Science*, *13*(2), 150-61.

Project Northland

Benefit-cost estimates updated December 2014. Literature review updated June 2014.

Program Description: Project Northland is a multilevel, universal intervention designed to prevent substance use among adolescents in middle school. The 6th grade home component targets parent-child communication via homework assignments, group discussions, and the establishment of a communitywide task force. The 7th grade school-based curriculum, which focuses on improving resistance skills and social norms regarding teen alcohol use, includes class discussions, games, and role plays. The 8th grade components include the peer-led Powerlines curriculum, a mock town meeting, and a community action project. Our review of Project Northland is limited to the 6th-8th grade implementation model and does not include the Class Action high school component.

Benefit-Cost Summary

Program benefits	
Participants	$357
Taxpayers	$187
Other (1)	$222
Other (2)	($74)
Total	$692
Costs	($185)
Benefits minus cost	$507

Summary statistics	
Benefit to cost ratio	$3.74
Benefits minus costs	$507
Probability of a positive net present value	73 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$7	$22	$4	$33
Labor market earnings (hs grad)	$352	$150	$174	$0	$675
Health care (smoking)	$5	$29	$26	$15	$74
Property loss (alcohol abuse/dependence)	$0	$0	$1	$0	$1
Adjustment for deadweight cost of program	$0	$0	$0	($92)	($92)
Totals	$357	$187	$222	($74)	$692

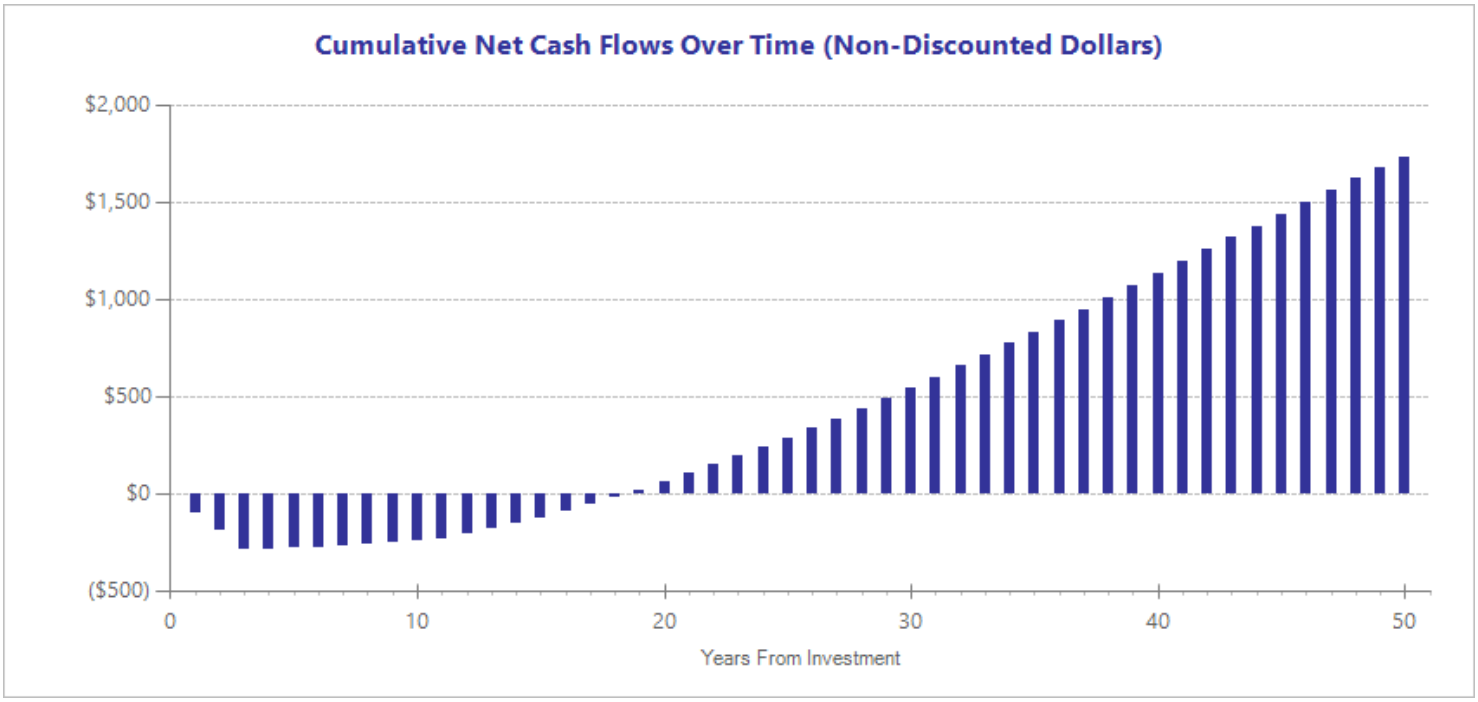
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$64	3	2013	Present value of net program costs (in 2013 dollars)	($185)
Comparison costs	$0	3	2013	Uncertainty (+ or - %)	10 %

Cost data come from NREPP and curriculum publisher (http://www.hazelden.org/OA_HTML/ibeCCtpItmDspRte.jsp?a=b&item=15546; http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=25#divContacts).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	1	951	-0.179	0.004	-0.059	0.062	14	-0.059	0.062	18
Alcohol use before end of middle school	Primary	3	4057	-0.089	0.001	-0.032	0.024	14	-0.032	0.024	18
Youth binge drinking	Primary	1	1401	-0.076	0.039	-0.025	0.037	14	-0.025	0.037	18
Cannabis use before end of middle school	Primary	1	951	-0.099	0.535	-0.033	0.159	14	-0.033	0.159	18

Citations Used in the Meta-Analysis

Komro, K.A., Perry, C.L., Veblen-Mortenson, S., Farbakhsh, K., Toomey, T.L., Stigler, M.H., Jones-Webb, R., . . . Williams, C.L. (2008). Outcomes from a randomized controlled trial of a multi-component alcohol use preventive intervention for urban youth: Project Northland Chicago. *Addiction*, *103*(4), 606-618.

Perry, C.L. et al. (1996). Project Northland: Outcomes of a communitywide alcohol use prevention program during early adolescence. *American Journal of Public Health*, *86*(7), 956-965.

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West, B., Abatemarco, D., Ohman-Strickland, P.A., Zec, V., Russo, A., & Milic, R. (2008). Project Northland in Croatia: results and lessons learned. *Journal of Drug Education*, *38*(1), 55-70.

Computer-based substance use prevention programs

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Computer-based prevention programs utilize technology to deliver interactive materials to youth that are designed to teach about the dangers of drug and tobacco use, to encourage resistance skills, and to change attitudes towards ATOD use. These programs generally include quizzes, surveys, and feedback. They can be implemented in schools, at home, community centers, or primary care facilities. Project ASPIRE and Smoking Zine are two name-brand programs included in this report.

Benefit-Cost Summary

Program benefits	
Participants	$639
Taxpayers	$349
Other (1)	$396
Other (2)	$6
Total	$1,390
Costs	($69)
Benefits minus cost	$1,321

Summary statistics	
Benefit to cost ratio	$20.26
Benefits minus costs	$1,321
Probability of a positive net present value	68 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$5	$16	$2	$23
Labor market earnings (hs grad)	$625	$267	$309	$0	$1,201
Health care (smoking)	$13	$79	$70	$39	$201
Property loss (alcohol abuse/dependence)	$1	$0	$3	$0	$4
Health care (cannabis abuse/dependence)	($1)	($2)	($2)	($1)	($5)
Adjustment for deadweight cost of program	$0	$0	$0	($34)	($34)
Totals	$639	$349	$396	$6	$1,390

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

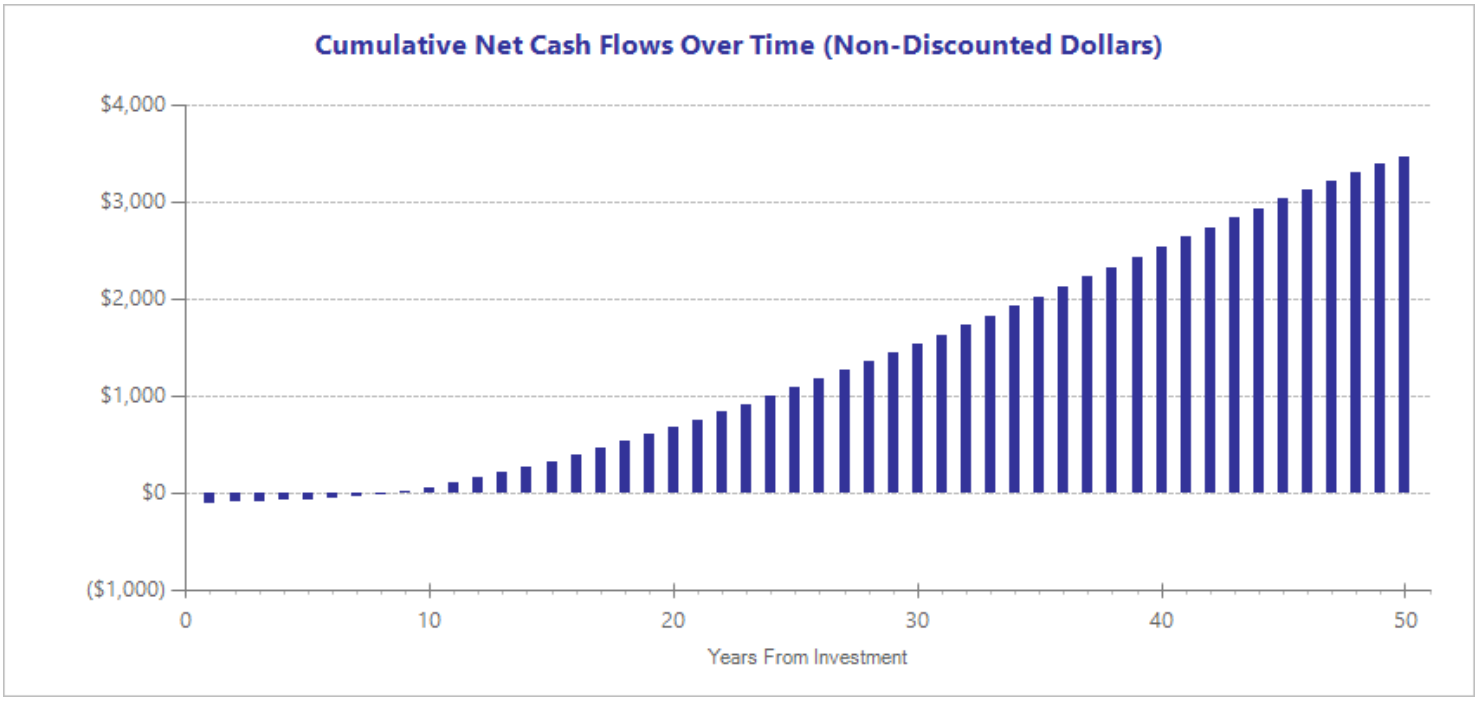
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$68	1	2012
Comparison costs	$0	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	($69)
Uncertainty (+ or - %)	10 %

Estimated from The National Registry of Evidence-based Programs and Practices, and from cost information on tobacco cessation website development in Graham et al. (2012) Cost-effectiveness of internet and telephone treatment for smoking cessation: an economic evaluation of the IQUITT study.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking in high school	Primary	5	5973	-0.063	0.199	-0.063	0.049	16	-0.063	0.049	18
Alcohol use in high school	Primary	1	270	-0.068	0.513	-0.068	0.104	18	-0.068	0.104	18
Cannabis use in high school	Primary	1	270	0.017	0.868	0.017	0.104	18	0.017	0.104	18

Citations Used in the Meta-Analysis

Aveyard, P., Cheng, K.K., Almond, J., Sherratt, E., Lancashire, R., Lawrence, T., Griffin, C., Evans, O. (1999). Cluster randomised controlled trial of expert system based on the transtheoretical ("stages of change") model for smoking prevention and cessation in schools. *British Medical Journal*, *319*(7215), 948-952.

Hollis, J.F., Polen, M.R., Whitlock, E.P., et al. (2005). Teen reach: outcomes from a randomized, controlled trial of a tobacco reduction program for teens seen in primary medical care. *Pediatrics*, *115*(4), 981-989.

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Schinke, S.P., Schwinn, T.M., & Fang, L. (2010). Longitudinal outcomes of an alcohol abuse prevention program for urban adolescents. *The Journal of Adolescent Health*, *46*(5), 451-457.

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