Washington State Institute for Public Policy

Public Health & Prevention Benefit-Cost Results

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our technical documentation.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

Mentoring for students: school-based (taxpayer costs only)

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

Program Description: In school-based mentoring programs, mentors and students meet weekly at school for one-to-one relationship building and guidance. Mentors are adult volunteers, school staff, or high school students. Community-based organizations coordinate with school staff and provide mentors with training and oversight. The programs included in this analysis are (in no particular order) the national Student Mentoring Program, Big Brothers Big Sisters, Project CHANCE, SMILE, and other locally developed programs.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$16,654	Benefit to cost ratio	$29.82
Taxpayers	$9,538	Benefits minus costs	$32,991
Other (1)	$7,361	Probability of a positive net present value	79 %
Other (2)	$585		
Total	$34,137		
Costs	($1,146)		
Benefits minus cost	$32,991		

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	$185	$571	$92	$848
Labor market earnings (hs grad)	$16,926	$7,219	$8,365	$0	$32,510
Health care (educational attainment)	($272)	$2,134	($1,575)	$1,062	$1,349
Adjustment for deadweight cost of program	$0	$0	$0	($570)	($570)
Totals	$16,654	$9,538	$7,361	$585	$34,137

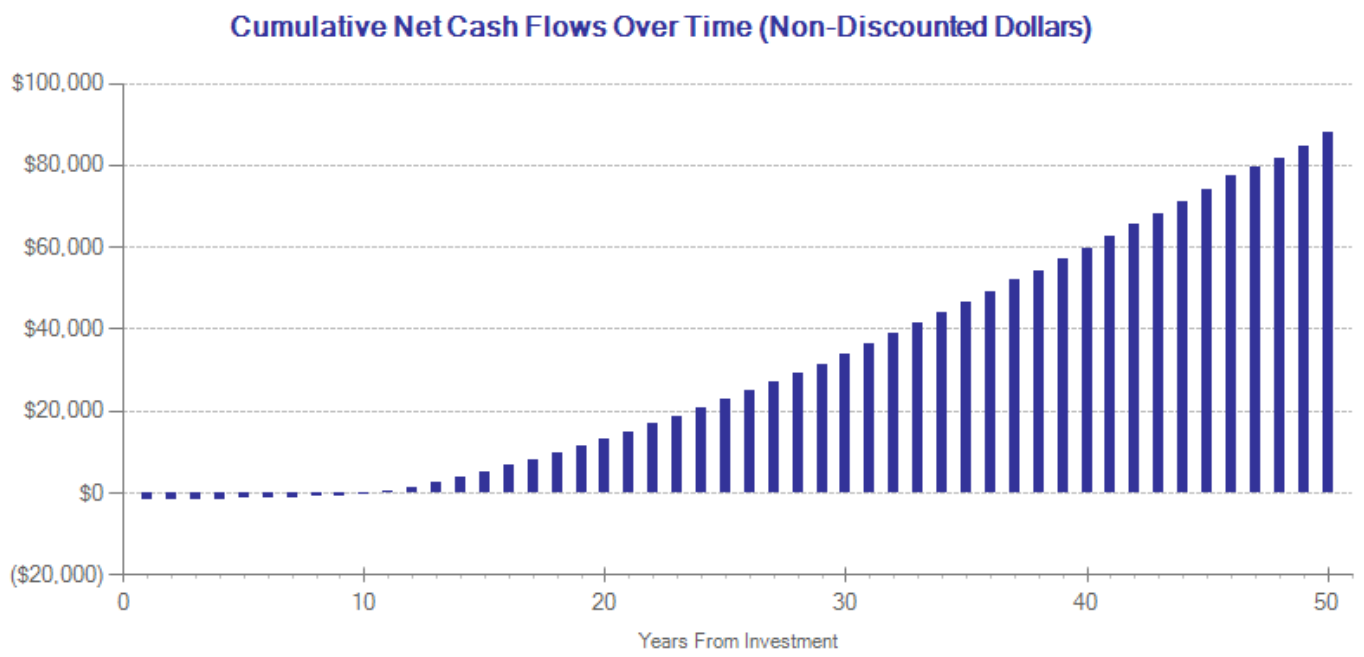
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$987	1	2005	Present value of net program costs (in 2013 dollars)	($1,146)
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. Cost estimates exclude volunteer time and 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
Office discipline referrals	Primary	2	547	-0.518	0.133	-0.263	0.157	14	-0.263	0.157	17
Grade point average	Primary	5	2009	0.065	0.249	0.058	0.056	14	0.058	0.056	17
Crime	Primary	2	1694	-0.040	0.664	-0.040	0.091	14	-0.040	0.091	24
High school graduation	Primary	1	66	0.689	0.029	0.262	0.316	18	0.262	0.316	18
Illicit drug use before end of middle school	Primary	1	531	0.109	0.452	0.109	0.145	13	0.058	0.110	14
School attendance	Primary	4	1771	0.149	0.072	0.114	0.083	14	0.114	0.083	17

Citations Used in the Meta-Analysis

Bernstein, L., Rappaport, C.D., Olsho, L., Hunt, D., Levin, M. (with Dyous, C., . . . Rhodes, W.) (2009). *Impact evaluation of the U.S. Department of Education's Student Mentoring Program: Final report.* Washington, DC : National Center for Education Evaluation and Regional Assistance.

Converse, N., & Lignugaris-Kraft, B. (2008). Evaluation of a school-based mentoring program for at-risk middle school youth. *Remedial and Special Education, 30*(1), 33-46.

DeSocio, J., VanCura, M., Nelson, L.A., Hewitt, G., Kitzman, H., & Cole, R. (2007). Engaging truant adolescents: Results from a multifaceted intervention pilot. *Preventing School Failure, 51*(3), 3-9.

Flaherty, B.P. (1985). An experiment in mentoring for high school students assigned to basic courses. *Dissertation Abstracts International, 46*(02), 352A.

Herrera, C., Grossman, J.B., Kauh, T.J., & McMaken, J. (2011). Mentoring in schools: An impact study of Big Brothers Big Sisters school-based mentoring. *Child Development, 82*(1), 346-361.

Karcher, M.J. (2008). The study of mentoring in the learning environment (SMILE): A randomized evaluation of the effectiveness of school-based mentoring. *Prevention Science, 9*(2), 99-113.

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

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

Program Description: In school-based mentoring programs, mentors and students meet weekly at school for one-to-one relationship building and guidance. Mentors are adult volunteers, school staff, or high school students. Community-based organizations coordinate with school staff and provide mentors with training and oversight. The programs included in this analysis are (in no particular order) the national Student Mentoring Program, Big Brothers Big Sisters, Project CHANCE, SMILE, and other, locally developed programs.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$16,500	Benefit to cost ratio	$18.77
Taxpayers	$9,445	Benefits minus costs	$31,729
Other (1)	$7,311	Probability of a positive net present value	78 %
Other (2)	$259		
Total	$33,515		
Costs	($1,786)		
Benefits minus cost	$31,729		

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	$183	$567	$91	$841
Labor market earnings (hs grad)	$16,769	$7,153	$8,304	$0	$32,225
Health care (educational attainment)	($270)	$2,110	($1,560)	$1,064	$1,344
Adjustment for deadweight cost of program	$0	$0	$0	($896)	($896)
Totals	$16,500	$9,445	$7,311	$259	$33,515

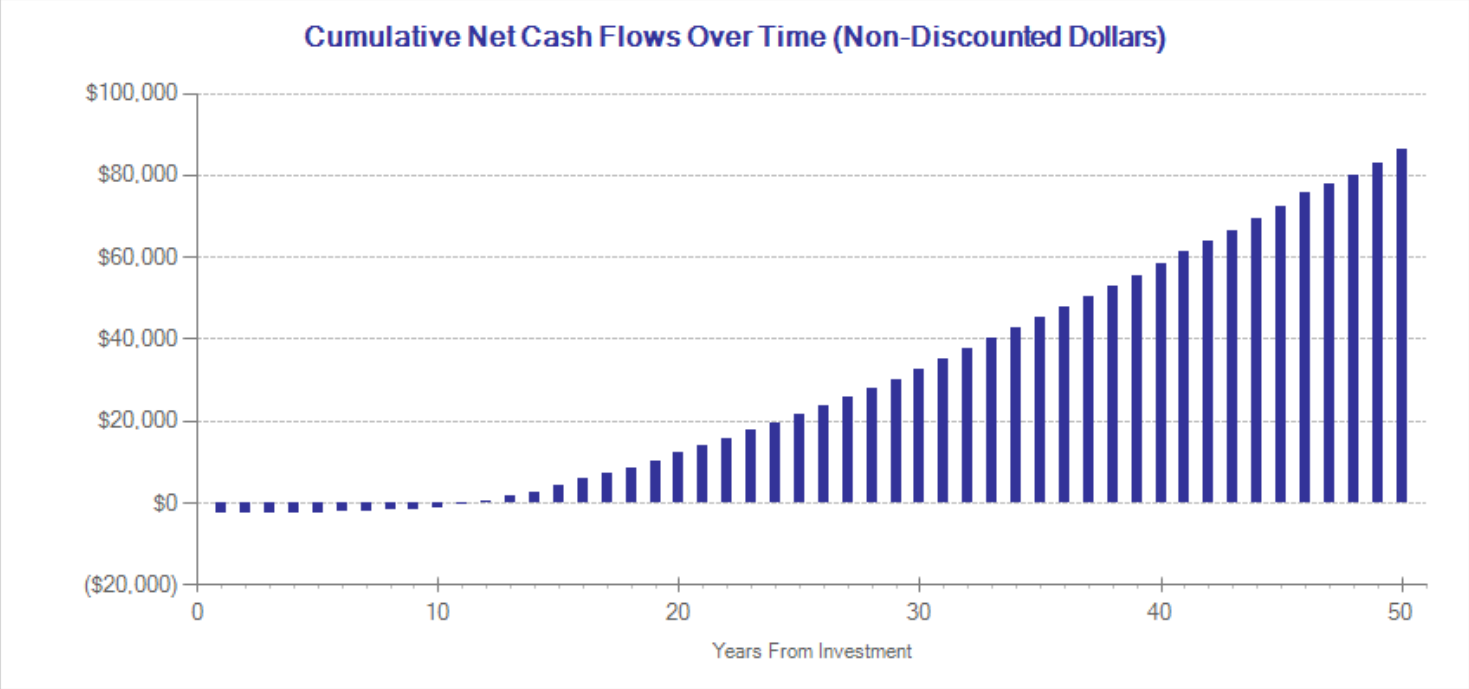
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$1,539	1	2005	Present value of net program costs (in 2013 dollars)	($1,786)
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 school-based programs, mentors meet with mentees, on average, once per week during the school year. Approximately half of the mentors in the evaluated programs were high school students and were not included in the volunteer cost estimates. 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
Office discipline referrals	Primary	2	547	-0.518	0.133	-0.263	0.157	14	-0.263	0.157	17
Grade point average	Primary	5	2009	0.065	0.249	0.058	0.056	14	0.058	0.056	17
Crime	Primary	2	1694	-0.040	0.664	-0.040	0.091	14	-0.040	0.091	24
High school graduation	Primary	1	66	0.689	0.029	0.262	0.316	18	0.262	0.316	18
Illicit drug use before end of middle school	Primary	1	531	0.109	0.452	0.109	0.145	13	0.058	0.110	14
School attendance	Primary	4	1771	0.149	0.072	0.114	0.083	14	0.114	0.083	17

Citations Used in the Meta-Analysis

Bernstein, L., Rappaport, C.D., Olsho, L., Hunt, D., Levin, M. (with Dyous, C., . . . Rhodes, W.) (2009). *Impact evaluation of the U.S. Department of Education's Student Mentoring Program: Final report.* Washington, DC : National Center for Education Evaluation and Regional Assistance.

Converse, N., & Lignugaris-Kraft, B. (2008). Evaluation of a school-based mentoring program for at-risk middle school youth. *Remedial and Special Education, 30*(1), 33-46.

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Karcher, M.J. (2008). The study of mentoring in the learning environment (SMILE): A randomized evaluation of the effectiveness of school-based mentoring. *Prevention Science, 9*(2), 99-113.

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		Summary statistics	
Participants	$6,080	Benefit to cost ratio	$59.31
Taxpayers	$3,952	Benefits minus costs	$13,710
Other (1)	$3,377	Probability of a positive net present value	77 %
Other (2)	$537		
Total	$13,946		
Costs	($236)		
Benefits minus cost	$13,710		

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

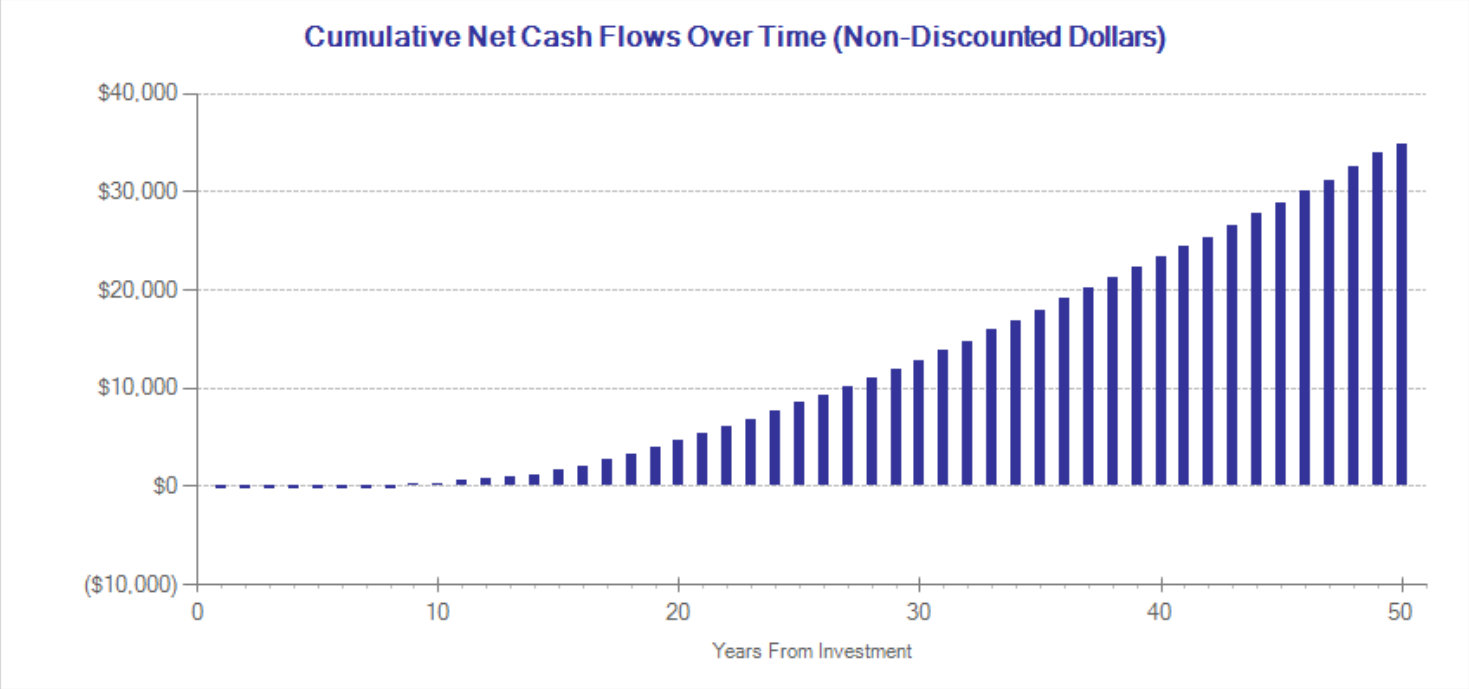
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

Beets, M.W., Flay, B.R., Vuchinich, S., Snyder, F.J., Acock, A., Li, K.K., Burns, K., Washburn, I.J., & Durlak, J. (2009). Use of a social and character development program to prevent substance use, violent behaviors, and sexual activity among elementary-school students in Hawaii. *American Journal of Public Health, 99*(8), 1438-1445.

Brown, E.C., Catalano, R.F., Fleming, C.B., Haggerty, K.P., & Abbott, R.D. (2005). Adolescent substance use outcomes in the Raising Healthy Children project: a two-part latent growth curve analysis. *Journal of Consulting and Clinical Psychology, 73*(4), 699-710.

DeGarmo, D.S., Eddy, J.M., Reid, J.B., & Fetrow, R.A. (2009). Evaluating mediators of the impact of the Linking the Interests of Families and Teachers (LIFT) multimodal preventive intervention on substance use initiation and growth across adolescence. *Prevention Science, 10*(3), 208-220.

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.

O'neill, J.M., Clark, J.K., & Jones, J.A. (2011). Promoting mental health and preventing substance abuse and violence in elementary students: A randomized control study of the Michigan Model for Health. *Journal of School Health, 81*(6), 320-330.

Seattle Social Development Project

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

Program Description: The Seattle Social Development Project (SSDP) targets youth in grades 1 to 6 to increase bonding to school and family as a protective measure against school failure, delinquency, drug abuse, teen pregnancy, and violence. The SSDP is a school-based program with annual teacher training in communication, effective classroom management, and cooperative learning. The program also includes child skill development in communication, negotiation, conflict resolution, and refusal skills. Parents are trained in behavior management, academic support, and skills to reduce risks for drug use.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$7,535	Benefit to cost ratio	$4.94
Taxpayers	$4,591	Benefits minus costs	$12,157
Other (1)	$3,985	Probability of a positive net present value	68 %
Other (2)	($874)		
Total	$15,238		
Costs	($3,081)		
Benefits minus cost	$12,157		

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	$300	$853	$148	$1,301
Labor market earnings (hs grad)	$7,561	$3,225	$3,742	$0	$14,527
K-12 grade repetition	$0	$99	$0	$49	$147
Public assistance	($1)	$3	$0	$0	$2
Health care (educational attainment)	($115)	$905	($667)	$455	$578
Subtotals	$7,445	$4,531	$3,927	$653	$16,555
From secondary participant					
Crime	$0	$8	$22	$4	$34
Labor market earnings (hs grad)	$89	$38	$44	$0	$171
Child abuse and neglect	$3	$1	$0	$0	$4
Out-of-home placement	$0	$0	$0	$0	$1
K-12 grade repetition	$0	$1	$0	$1	$2
Health care (educational attainment)	($1)	$11	($8)	$5	$7
Subtotals	$91	$60	$58	$11	$219
Adjustment for deadweight cost of program	$0	$0	$0	($1,537)	($1,537)
Totals	$7,535	$4,591	$3,985	($874)	$15,238

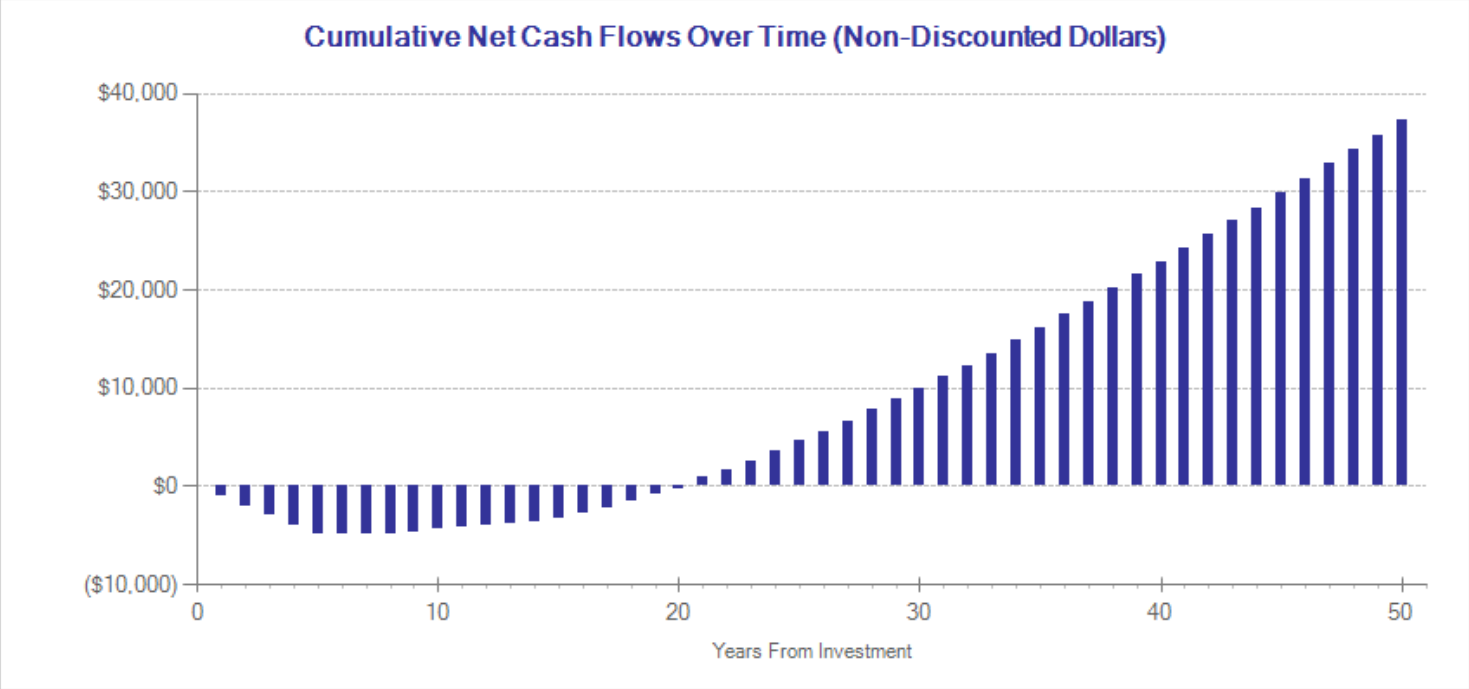
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$499	5	1999	Present value of net program costs (in 2013 dollars)	($3,081)
Comparison costs	$0	1	1999	Uncertainty (+ or - %)	10 %

Hawkins JD, Catalano RF et al. 1999, Prevention of Adolescent Health-Risk Behaviors, p. 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
Initiation of sexual activity	Primary	1	149	-0.385	0.015	-0.146	0.158	19	-0.146	0.158	29
Teen pregnancy (under age 18)	Primary	1	149	-0.335	0.040	-0.127	0.163	19	-0.127	0.163	29
Teen births under age 18	Primary	1	149	-0.300	0.148	-0.114	0.207	19	-0.114	0.207	29
K-12 grade repetition	Primary	1	149	-0.355	0.042	-0.135	0.175	16	-0.135	0.175	17
Alcohol use in high school	Primary	1	149	-0.030	0.836	-0.011	0.146	19	-0.011	0.146	29
Crime	Primary	1	149	-0.214	0.182	-0.081	0.160	19	-0.081	0.160	29
Teen births (second generation)	Secondary	1	149	-0.300	0.148	-0.114	0.207	19	-0.114	0.207	29
High school graduation	Primary	1	149	0.255	0.109	0.097	0.159	19	0.097	0.159	19

Citations Used in the Meta-Analysis

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.

Hawkins, J. D., Kosterman, R., Catalano, R. F., Hill, K. G., & Abbott, R. D. (2005). Promoting positive adult functioning through social development intervention in childhood: Long-term effects from the Seattle Social Development Project. *Archives of Pediatrics & Adolescent Medicine, 159*(1), 25-31.

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		Summary statistics	
Participants	$5,308	Benefit to cost ratio	$57.53
Taxpayers	$2,788	Benefits minus costs	$8,924
Other (1)	$783	Probability of a positive net present value	93 %
Other (2)	$203		
Total	$9,081		
Costs	($158)		
Benefits minus cost	$8,924		

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

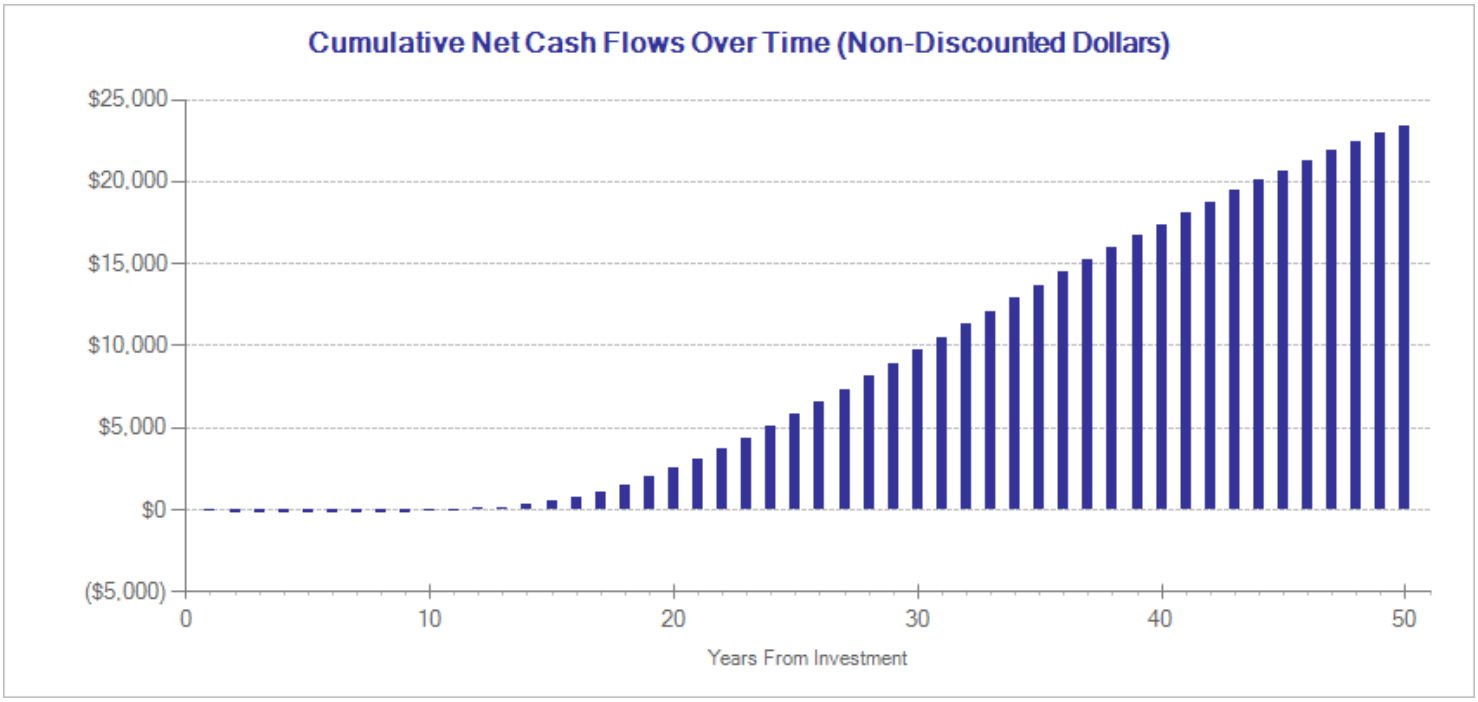
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$78	2	2011	Present value of net program costs (in 2013 dollars)	($158)
Comparison costs	$0	1	2011	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

Kellam, S.G., & Anthony, J.C. (1998). Targeting early antecedents to prevent tobacco smoking: Findings from an epidemiologically based randomized field trial. *American Journal of Public Health, 88*(10), 1488-1495.

Kellam, S.G., Reid, J., & Balster, R.L. (2008). Effects of a universal classroom behavior program in first and second grades on young adult problem outcomes. *Drug and Alcohol Dependence, 95*(Suppl. 1), S1-S4.

Petras, H., Kellam, S.G., Poduska, J.M., Brown, C.H., Muthen, B.O., & Ialongo, N.S. (2008). Developmental epidemiological courses leading to antisocial personality disorder and violent and criminal behavior: Effects by young adulthood of a universal preventive intervention in first- and second-grade classrooms. *Drug and Alcohol Dependence, 95*(Suppl. 1), S45-S59.

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Wilcox, H.C., Kellam, S.G., Brown, C.H., Poduska, J.M., Ialongo, N.S., Wang, W., & Anthony, J.C. (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence, 95*(Suppl. 1), S60-S73.

Witvliet, M., van Lier, P.A.C., Cuijpers, P., & Koot, H.M. (2009). Testing links between childhood positive peer relations and externalizing outcomes through a randomized controlled intervention study. *Journal of Consulting and Clinical Psychology, 77*(5), 905-915.

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		Summary statistics	
Participants	$4,696	Benefit to cost ratio	$7.06
Taxpayers	$2,171	Benefits minus costs	$7,393
Other (1)	$2,271	Probability of a positive net present value	62 %
Other (2)	($527)		
Total	$8,611		
Costs	($1,218)		
Benefits minus cost	$7,393		

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

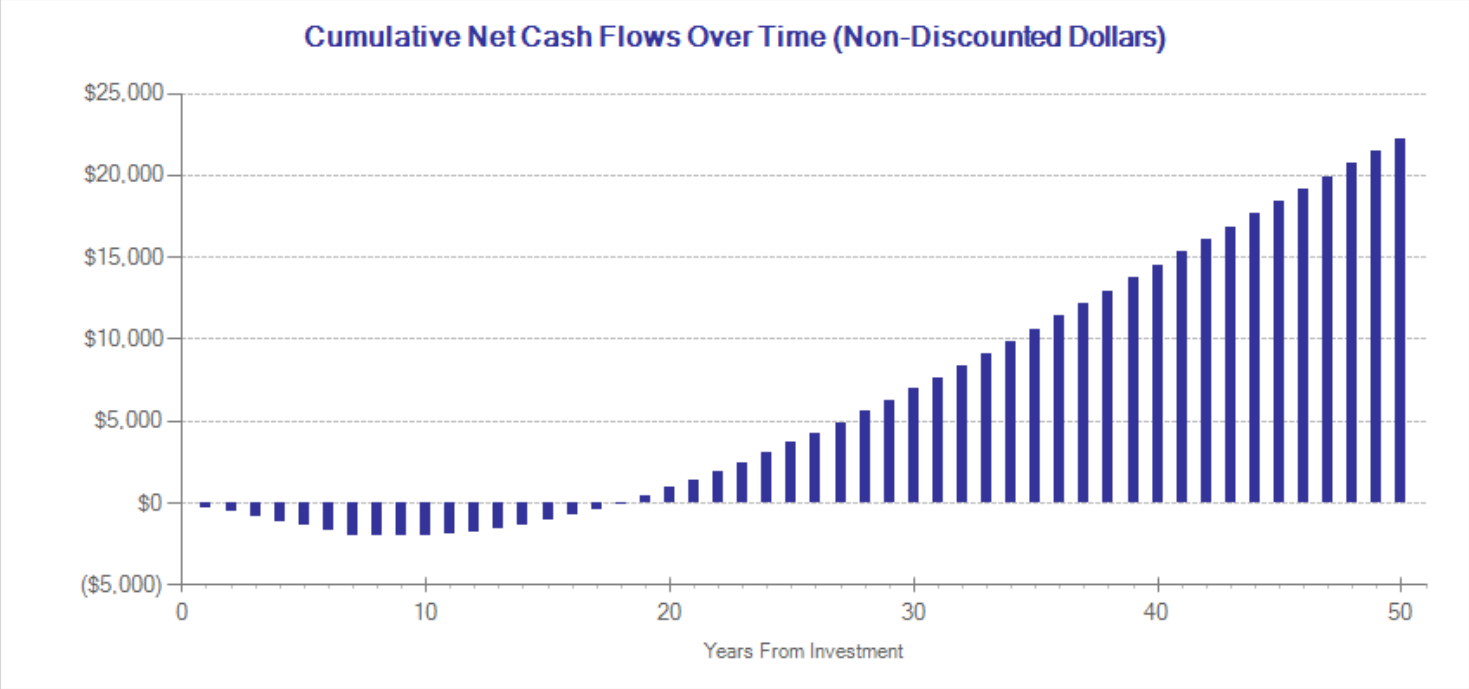
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

Battistich, V., Schaps, E., Watson, M., Solomon, D., & Lewis, C. (2000). Effects of the child development project on students' drug use and other problem behaviors. *Journal of Primary Prevention, 21*(1), 75-99.

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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		Summary statistics	
Participants	$1,869	Benefit to cost ratio	$64.64
Taxpayers	$986	Benefits minus costs	$3,950
Other (1)	$1,086	Probability of a positive net present value	99 %
Other (2)	$71		
Total	$4,012		
Costs	($62)		
Benefits minus cost	$3,950		

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

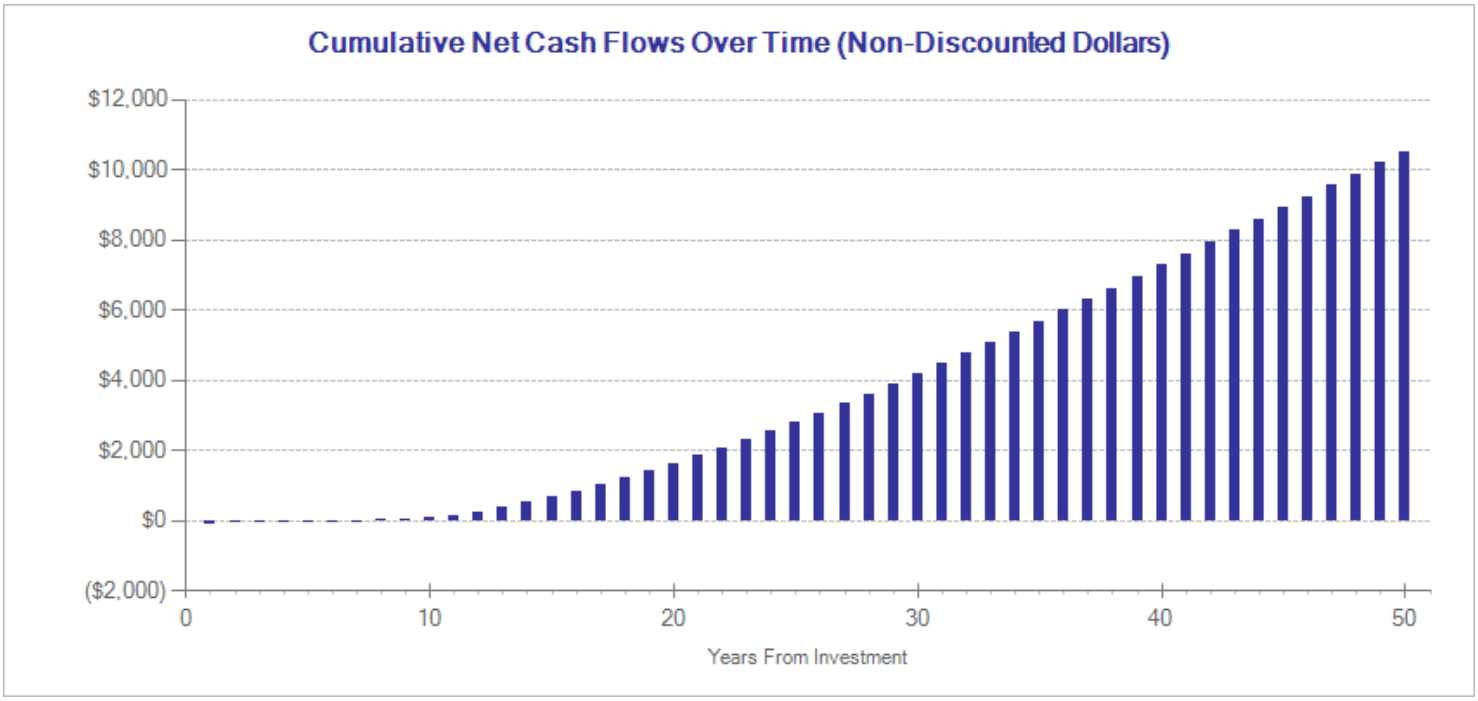
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$63	1	2014	Present value of net program costs (in 2013 dollars)	($62)
Comparison costs	$0	1	2014	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

Dent, C.W., Sussman, S., Stacy, A.W., Craig, S., Burton, D., & Flay, B.R. (1995). Two-year behavior outcomes of Project Towards No Tobacco Use. *Journal of Consulting and Clinical Psychology, 63*(4), 676-677.

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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		Summary statistics	
Participants	$1,546	Benefit to cost ratio	$60.13
Taxpayers	$819	Benefits minus costs	$3,452
Other (1)	$150	Probability of a positive net present value	86 %
Other (2)	$996		
Total	$3,511		
Costs	($58)		
Benefits minus cost	$3,452		

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

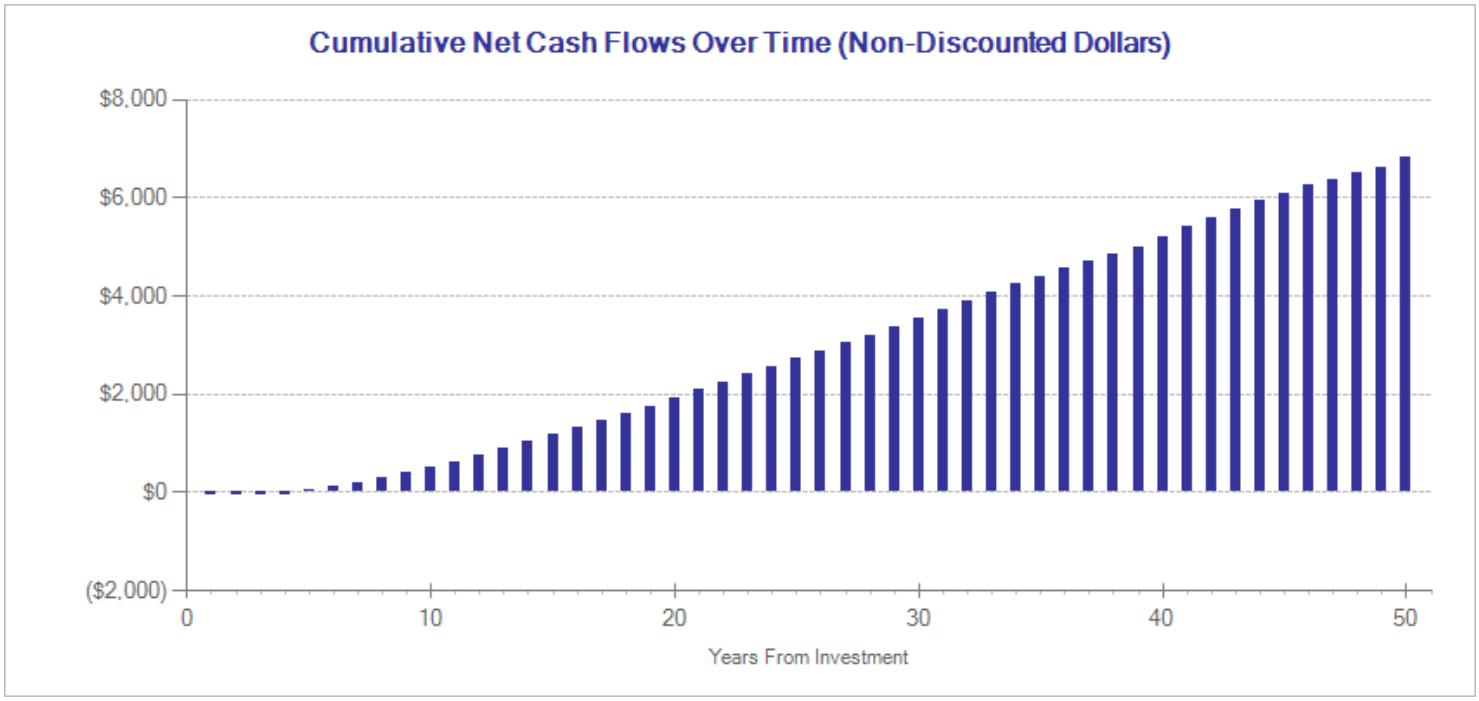
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$59	1	2014	Present value of net program costs (in 2013 dollars)	($58)
Comparison costs	$0	1	2014	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

Sussman, S., Dent, C.W., & Lichtman, K.L. (2001). Project EX: Outcomes of a teen smoking cessation program. *Addictive Behaviors, 26*(3), 425-438.

Sussman, S., Miyano, J., Rohrbach, L.A., Dent, C.W., & Sun, P. (2007). Six-month and 1-year effects of project EX-4, a classroom-based smoking prevention and cessation intervention program. *Addictive Behaviors, 35*(12), 3005-3014.

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		Summary statistics	
Participants	$1,298	Benefit to cost ratio	$86.00
Taxpayers	$652	Benefits minus costs	$2,681
Other (1)	$726	Probability of a positive net present value	94 %
Other (2)	$37		
Total	$2,712		
Costs	($32)		
Benefits minus cost	$2,681		

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

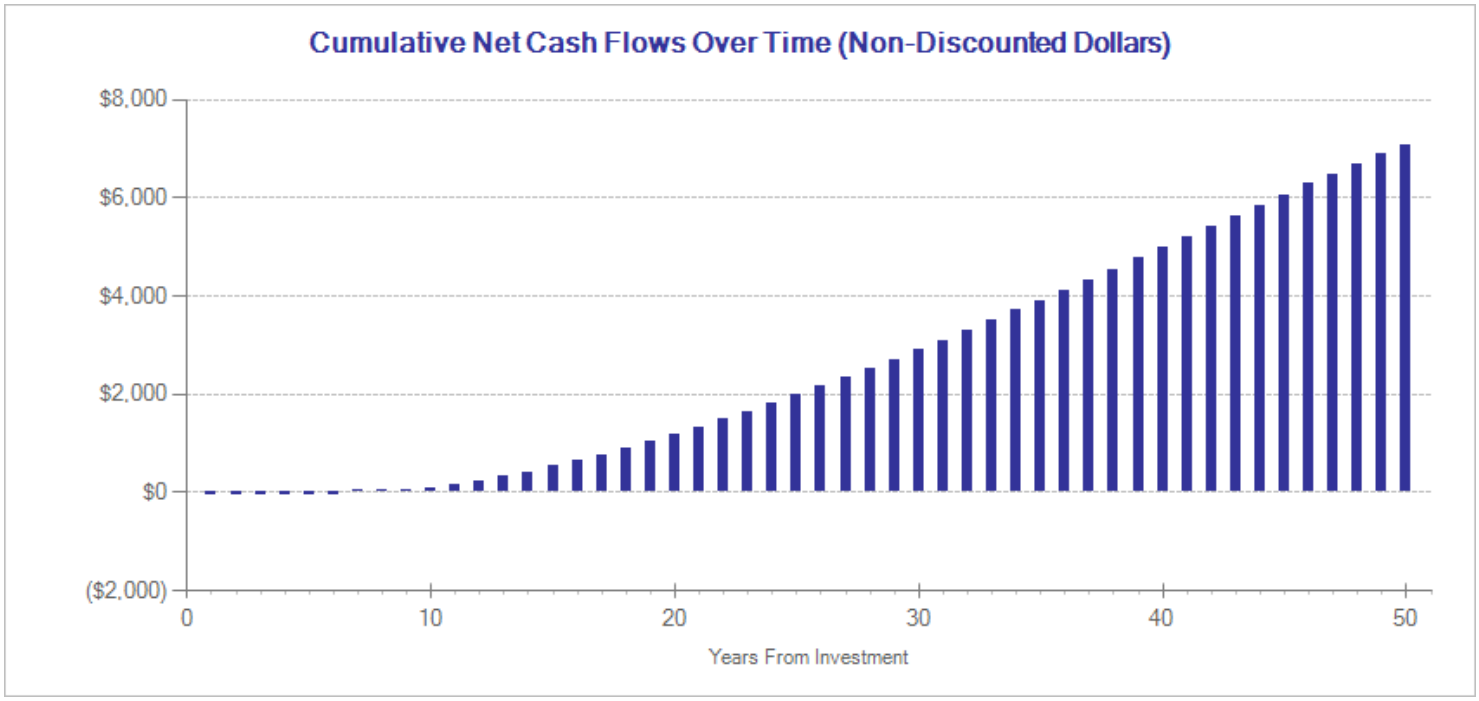
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$32	1	2013	Present value of net program costs (in 2013 dollars)	($32)
Comparison costs	$0	1	2013	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.

Murray, D.M., Richards, P.S., Luepker, R.V., & Johnson, C.A. (1987). The prevention of cigarette smoking in children: Two- and three-year follow-up comparisons of four prevention strategies. *Journal of Behavioral Medicine, 10*(6), 595-611.

Perry, C.L., Kelder, S.H., Murray, D.M., & Klepp, K.I. (1992). Communitywide smoking prevention: Long-term outcomes of the Minnesota Heart Health Program and the Class of 1989 Study. *American Journal of Public Health, 82*(9), 1210-1216.

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		Summary statistics	
Participants	$1,473	Benefit to cost ratio	$23.59
Taxpayers	$735	Benefits minus costs	$2,288
Other (1)	$174	Probability of a positive net present value	99 %
Other (2)	$7		
Total	$2,389		
Costs	($101)		
Benefits minus cost	$2,288		

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

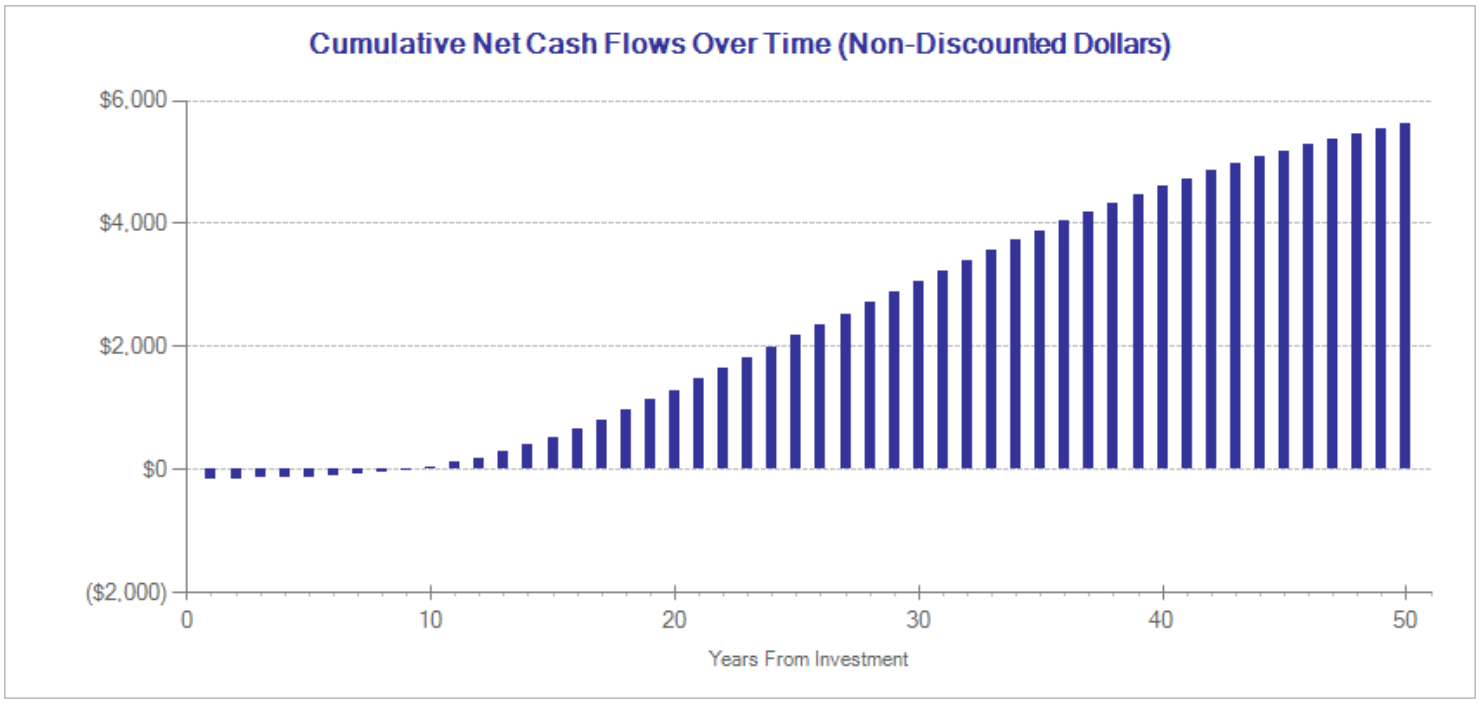
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$101	1	2013	Present value of net program costs (in 2013 dollars)	($101)
Comparison costs	$0	1	2013	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

Gottfredson, D.C., Cross, A., Wilson, D., Rorie, M., & Connell, N. (2010). An experimental evaluation of the All Stars prevention curriculum in a community after school setting. *Prevention Science, 11*(2) 142-154.

Hansen, W.B. & Graham, J.W. (1991). Preventing alcohol, marijuana, and cigarette use among adolescents: Peer pressure resistance training versus establishing conservative norms. *Preventive Medicine, 20*(3), 414-430.

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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		Summary statistics	
Participants	$843	Benefit to cost ratio	$36.44
Taxpayers	$334	Benefits minus costs	$1,888
Other (1)	$807	Probability of a positive net present value	84 %
Other (2)	($42)		
Total	$1,941		
Costs	($53)		
Benefits minus cost	$1,888		

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

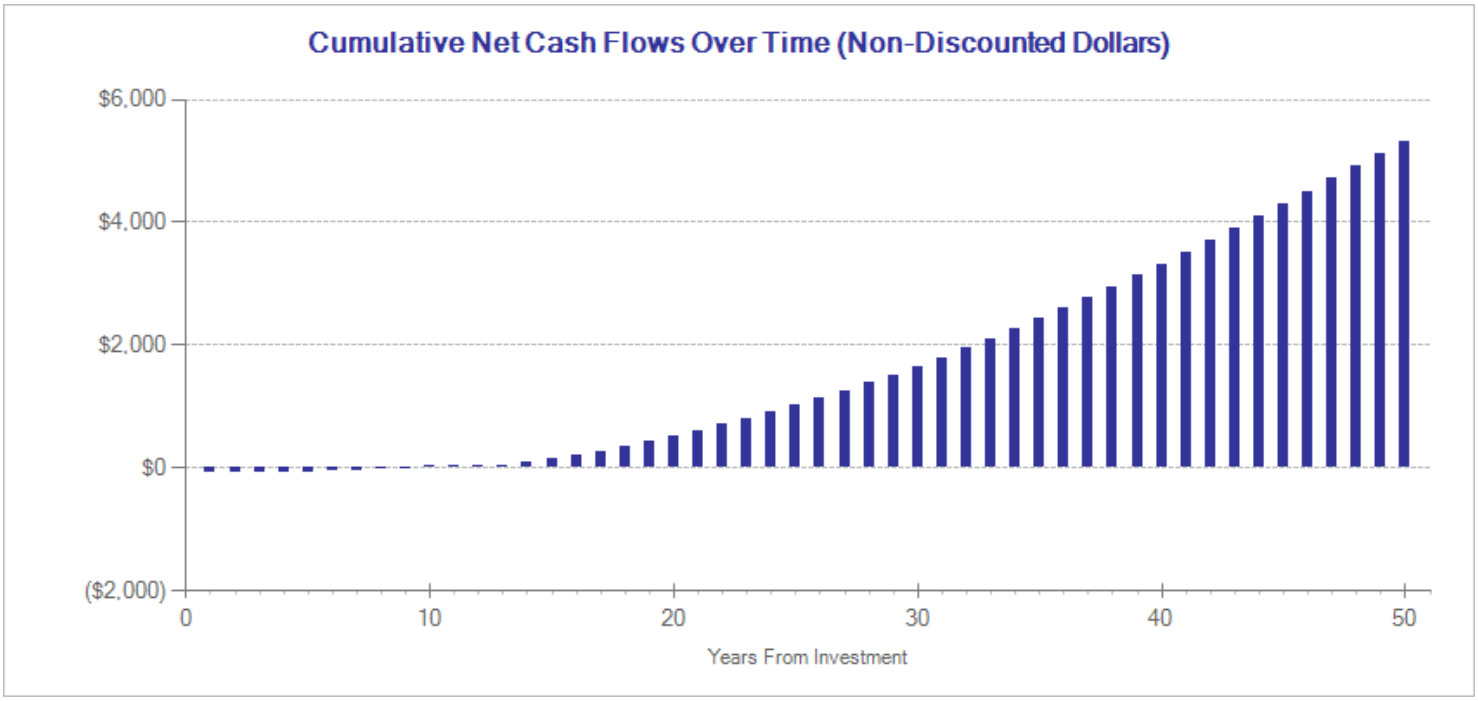
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$54	1	2014	Present value of net program costs (in 2013 dollars)	($53)
Comparison costs	$0	1	2014	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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Behavioral Monitoring and Reinforcement Program (BMRP)

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

Program Description: This is a school-based intervention that aims to prevent juvenile delinquency, substance use, and school failure for high-risk adolescents. For two years, beginning in seventh grade, participants' school records are monitored for attendance, tardiness, and disciplinary action. Program staff contact parents by letter, phone, and occasional home visits to inform them of their children's progress. Teachers submit weekly reports assessing students' punctuality, preparedness, and behavior in the classroom, and students are rewarded for good evaluations. Each week, 3-5 students meet with a staff member to discuss their recent behaviors and their consequences, and role-play prosocial alternatives to problem behaviors.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	($24)	Benefit to cost ratio	$2.31
Taxpayers	$967	Benefits minus costs	$1,705
Other (1)	$2,229	Probability of a positive net present value	59 %
Other (2)	($169)		
Total	$3,004		
Costs	($1,300)		
Benefits minus cost	$1,705		

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	$782	$2,366	$394	$3,542
Health care (educational attainment)	($24)	$184	($136)	$94	$119
Adjustment for deadweight cost of program	$0	$0	$0	($656)	($656)
Totals	($24)	$967	$2,229	($169)	$3,004

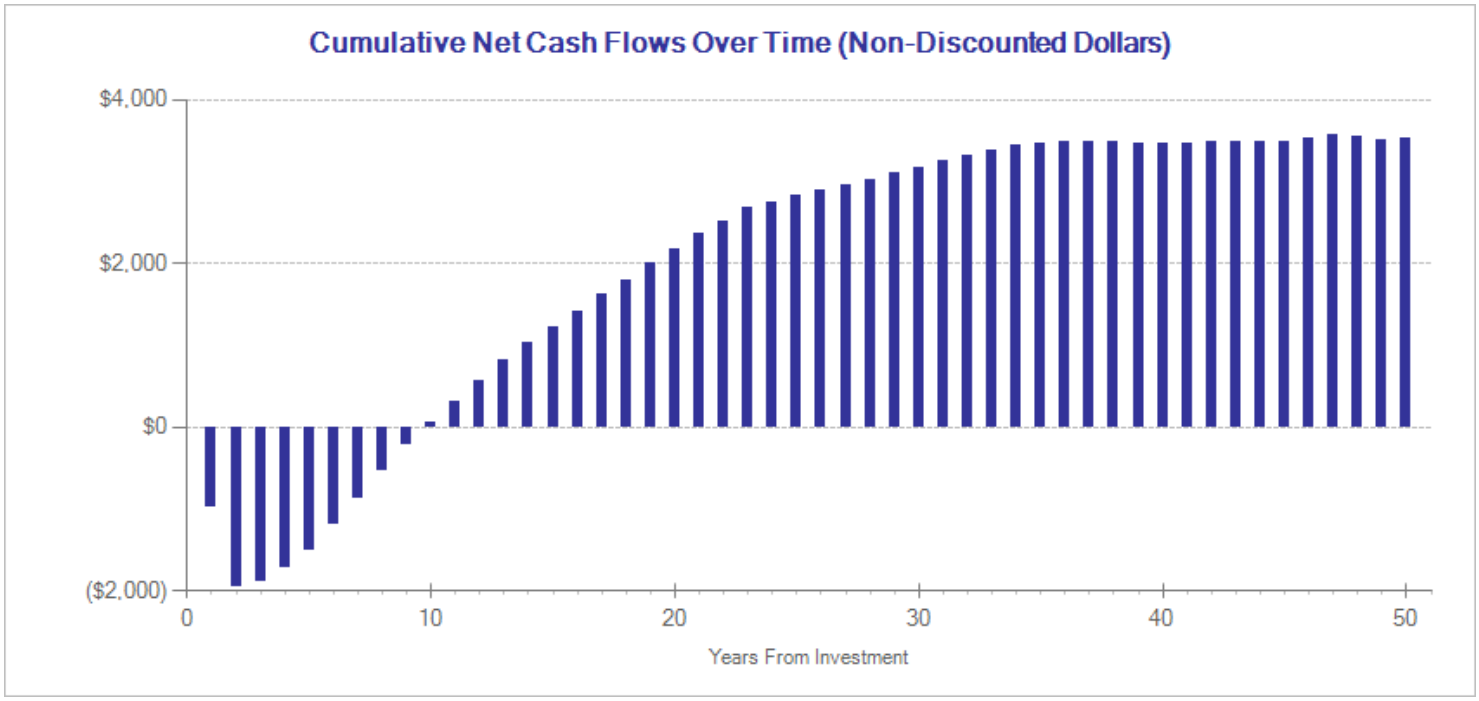
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	$500	2	1999	Present value of net program costs (in 2013 dollars)	($1,300)
Comparison costs	$0	2	1999	Uncertainty (+ or - %)	10 %

$ 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
Grade point average	Primary	3	34	0.786	0.002	0.500	0.252	16	0.500	0.252	17
Employment	Primary	1	30	0.709	0.215	0.269	0.572	16	0.269	0.572	26
Crime	Primary	1	30	-0.561	0.270	-0.213	0.510	16	-0.213	0.510	26
Truancy	Primary	4	121	-0.724	0.001	-0.413	0.192	16	-0.413	0.192	17

Citations Used in the Meta-Analysis

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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		Summary statistics	
Participants	$589	Benefit to cost ratio	$34.70
Taxpayers	$325	Benefits minus costs	$1,294
Other (1)	$398	Probability of a positive net present value	74 %
Other (2)	$20		
Total	$1,333		
Costs	($38)		
Benefits minus cost	$1,294		

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

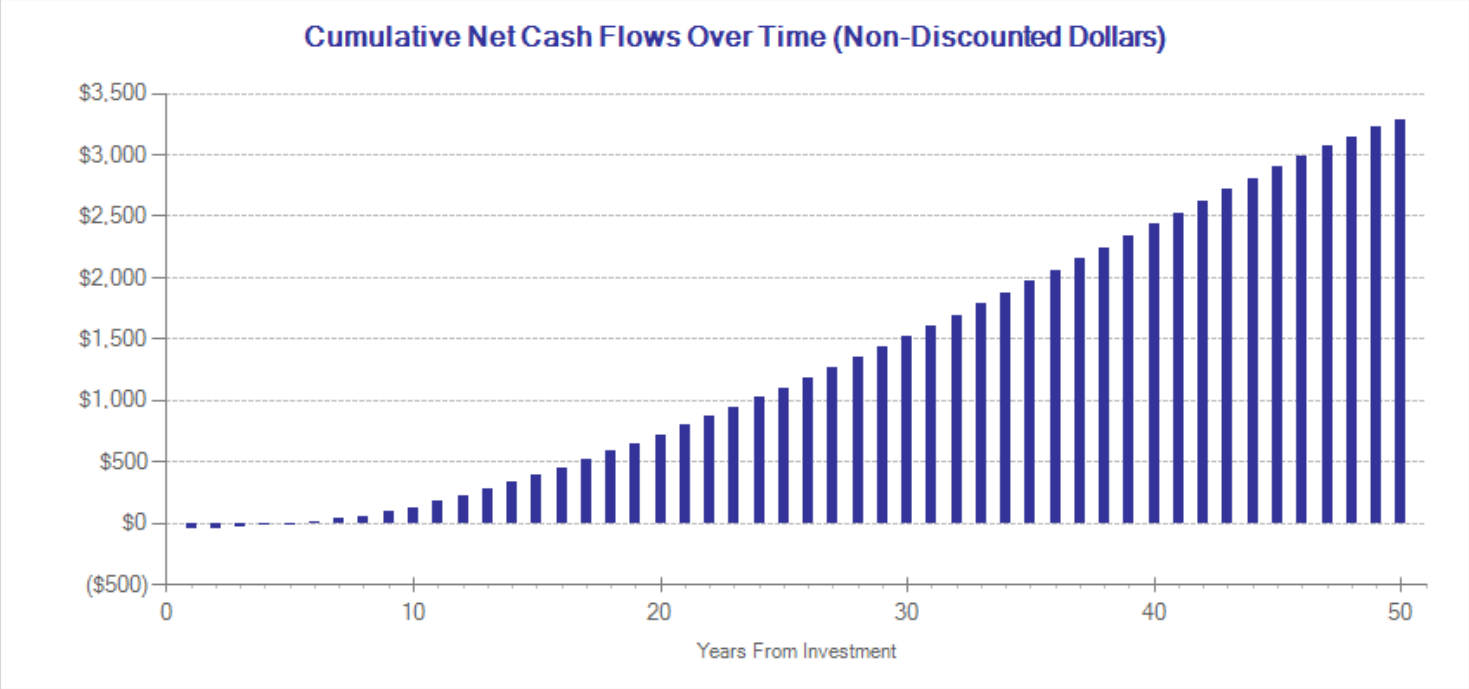
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$38	1	2013	Present value of net program costs (in 2013 dollars)	($38)
Comparison costs	$0	1	2013	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

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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		Summary statistics	
Participants	$401	Benefit to cost ratio	$11.58
Taxpayers	$246	Benefits minus costs	$1,028
Other (1)	$487	Probability of a positive net present value	84 %
Other (2)	($9)		
Total	$1,125		
Costs	($97)		
Benefits minus cost	$1,028		

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

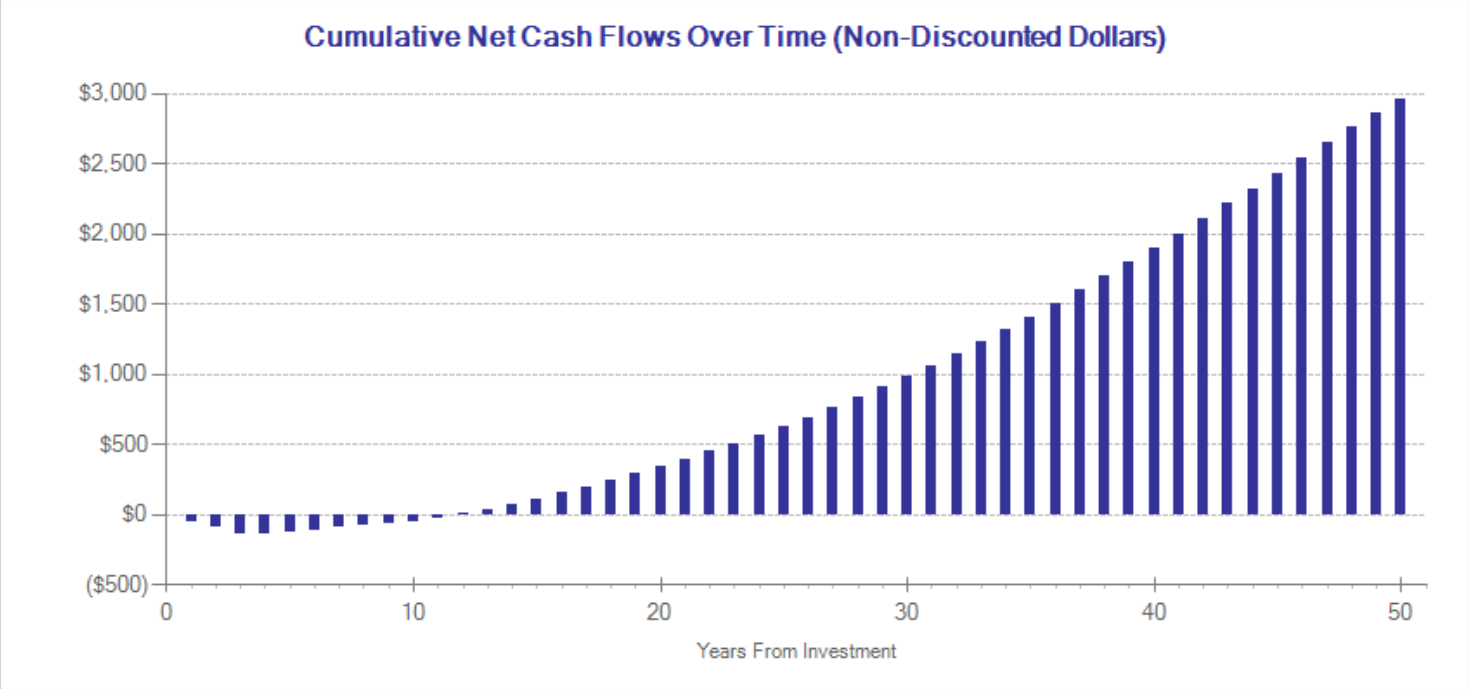
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$34	3	2013	Present value of net program costs (in 2013 dollars)	($97)
Comparison costs	$0	1	2013	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		Summary statistics	
Participants	$553	Benefit to cost ratio	$14.45
Taxpayers	$265	Benefits minus costs	$733
Other (1)	($20)	Probability of a positive net present value	78 %
Other (2)	($12)		
Total	$787		
Costs	($55)		
Benefits minus cost	$733		

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

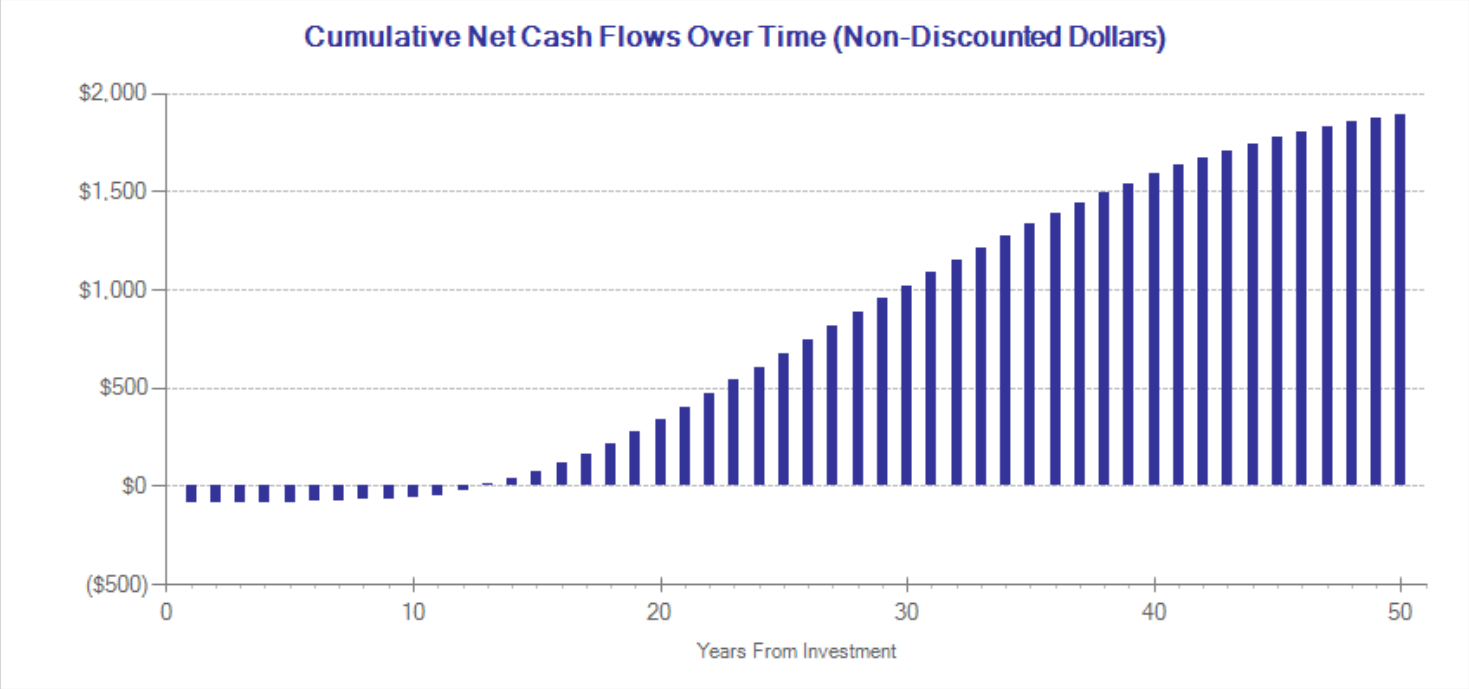
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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).

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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		Summary statistics	
Participants	$411	Benefit to cost ratio	$13.51
Taxpayers	$201	Benefits minus costs	$598
Other (1)	$44	Probability of a positive net present value	72 %
Other (2)	($10)		
Total	$646		
Costs	($48)		
Benefits minus cost	$598		

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

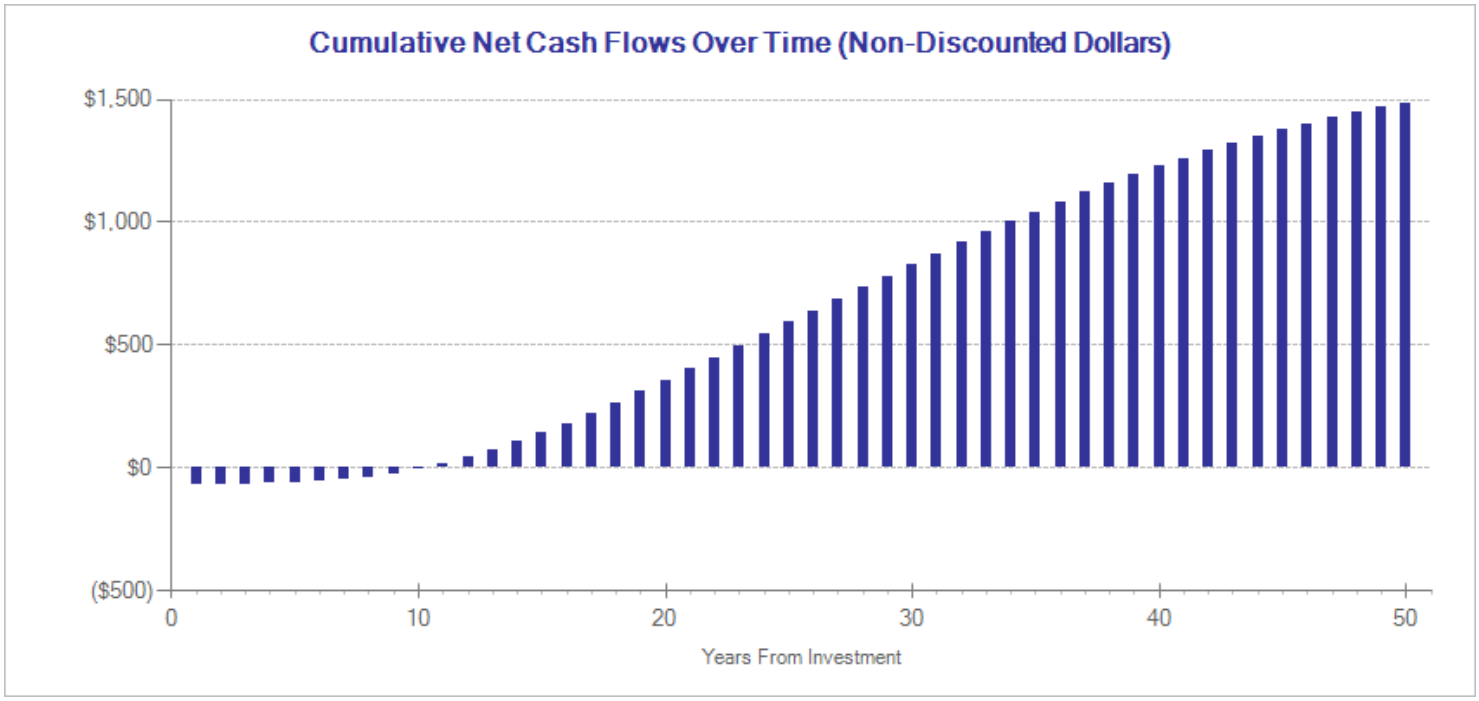
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$48	1	2014	Present value of net program costs (in 2013 dollars)	($48)
Comparison costs	$0	1	2014	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		Summary statistics	
Participants	$241	Benefit to cost ratio	$13.53
Taxpayers	$127	Benefits minus costs	$466
Other (1)	$140	Probability of a positive net present value	57 %
Other (2)	($6)		
Total	$503		
Costs	($37)		
Benefits minus cost	$466		

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

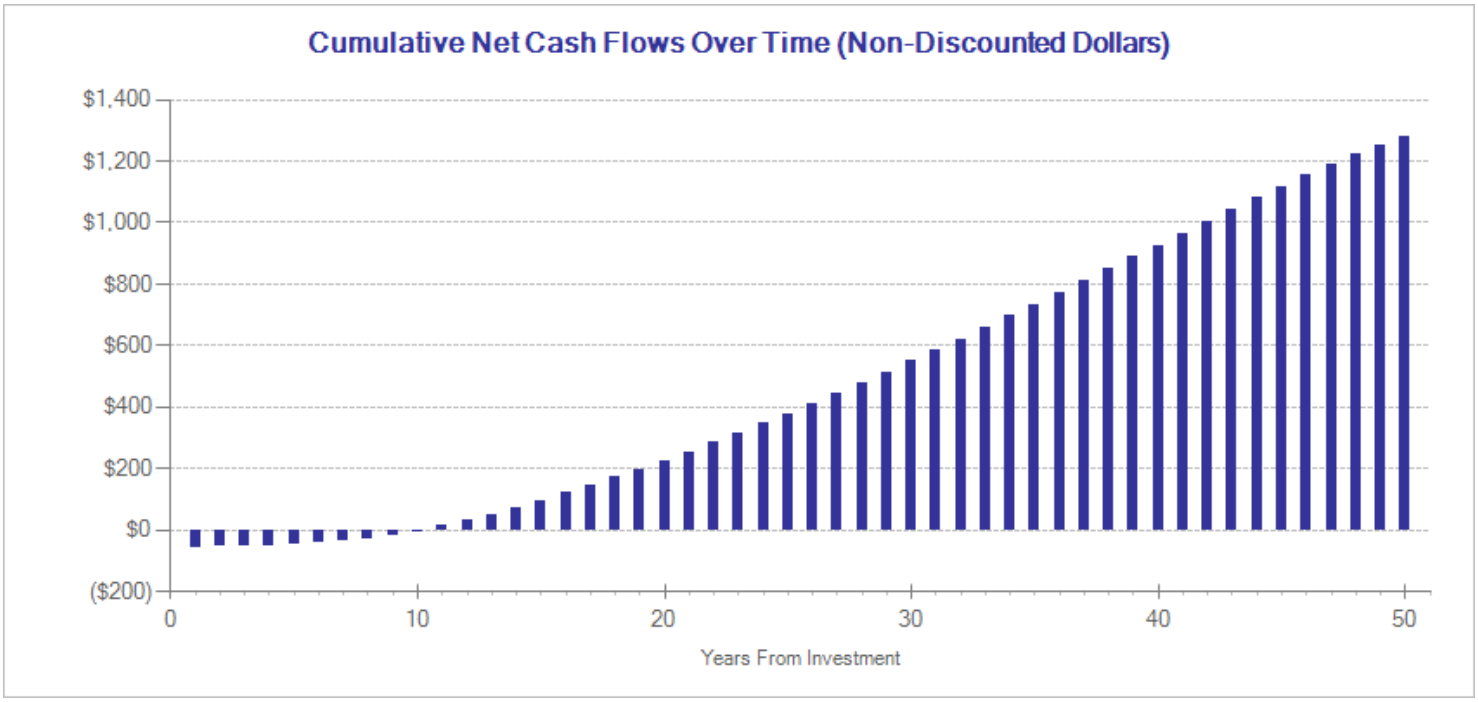
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$38	1	2014	Present value of net program costs (in 2013 dollars)	($37)
Comparison costs	$0	1	2014	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		Summary statistics	
Participants	$319	Benefit to cost ratio	$9.56
Taxpayers	$158	Benefits minus costs	$446
Other (1)	$36	Probability of a positive net present value	97 %
Other (2)	($14)		
Total	$498		
Costs	($52)		
Benefits minus cost	$446		

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

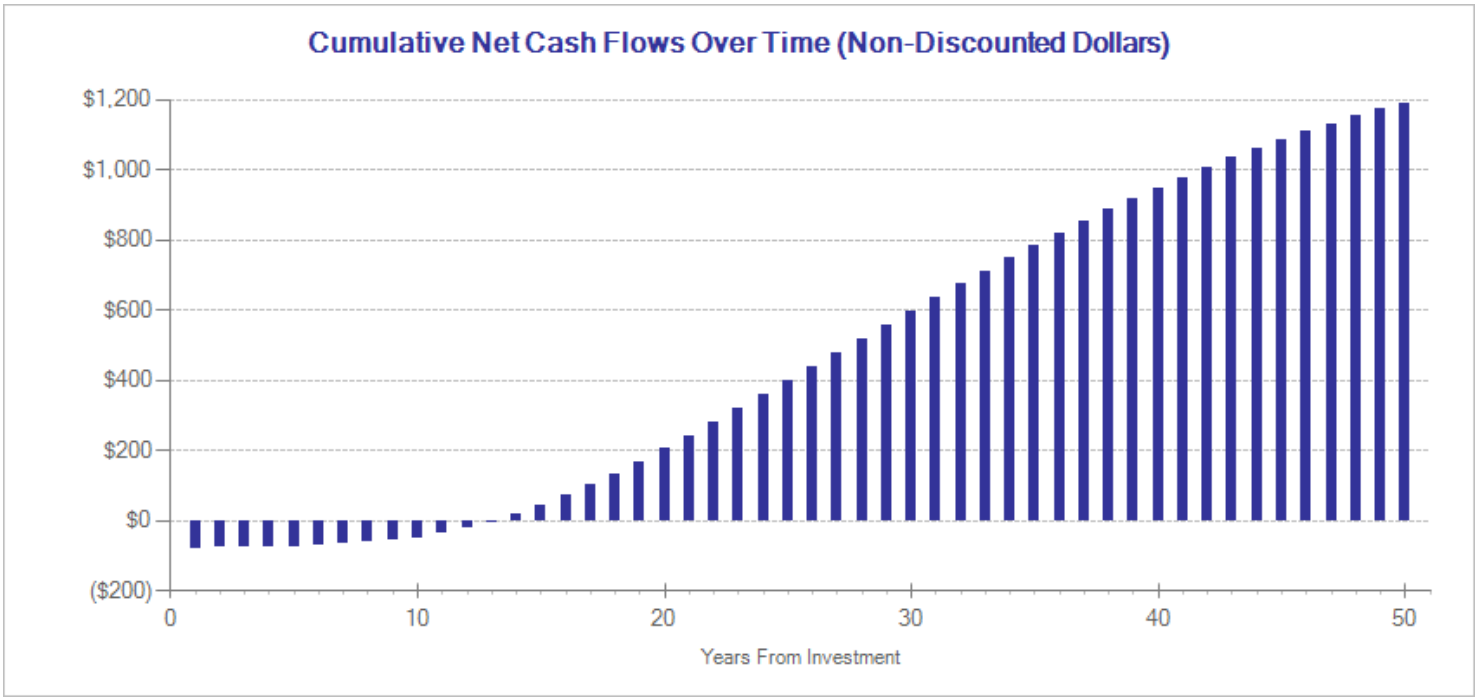
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$53	1	2014	Present value of net program costs (in 2013 dollars)	($52)
Comparison costs	$0	1	2014	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		Summary statistics	
Participants	$216	Benefit to cost ratio	$5.06
Taxpayers	$96	Benefits minus costs	$383
Other (1)	$210	Probability of a positive net present value	79 %
Other (2)	($45)		
Total	$477		
Costs	($94)		
Benefits minus cost	$383		

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

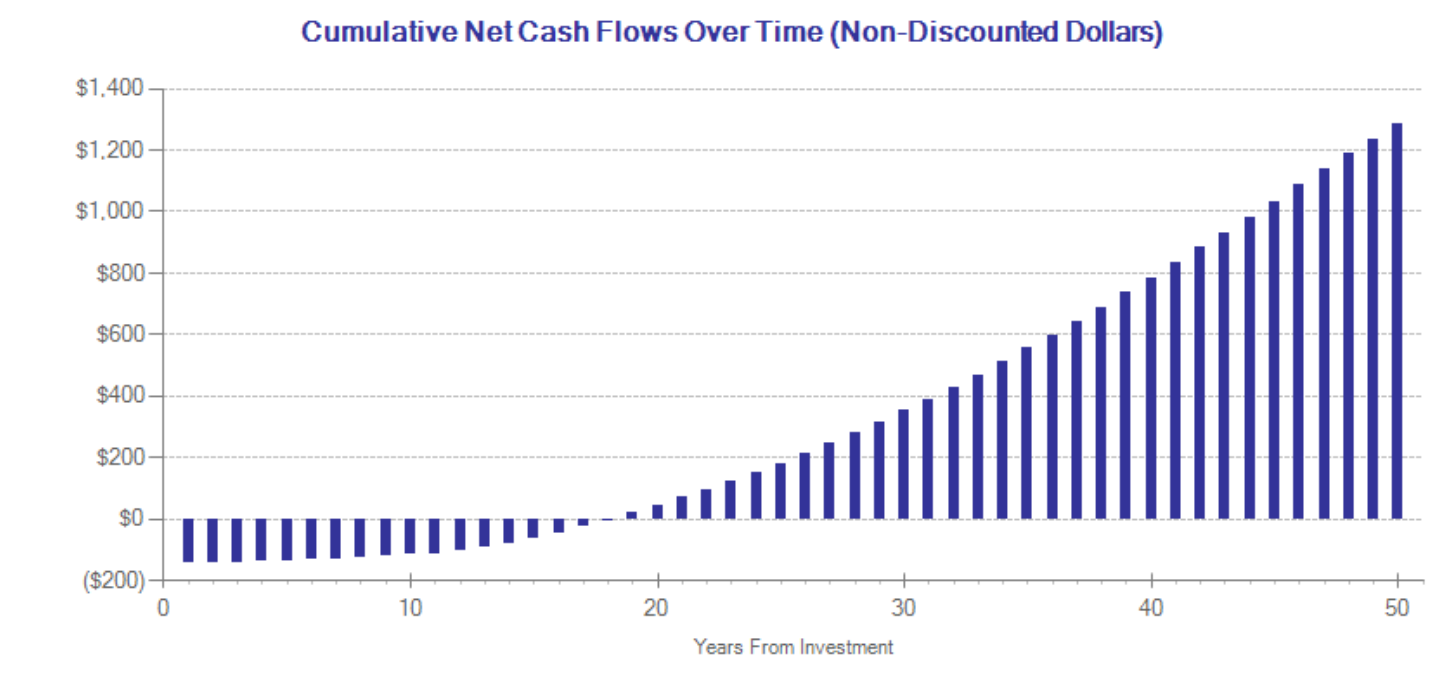
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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.

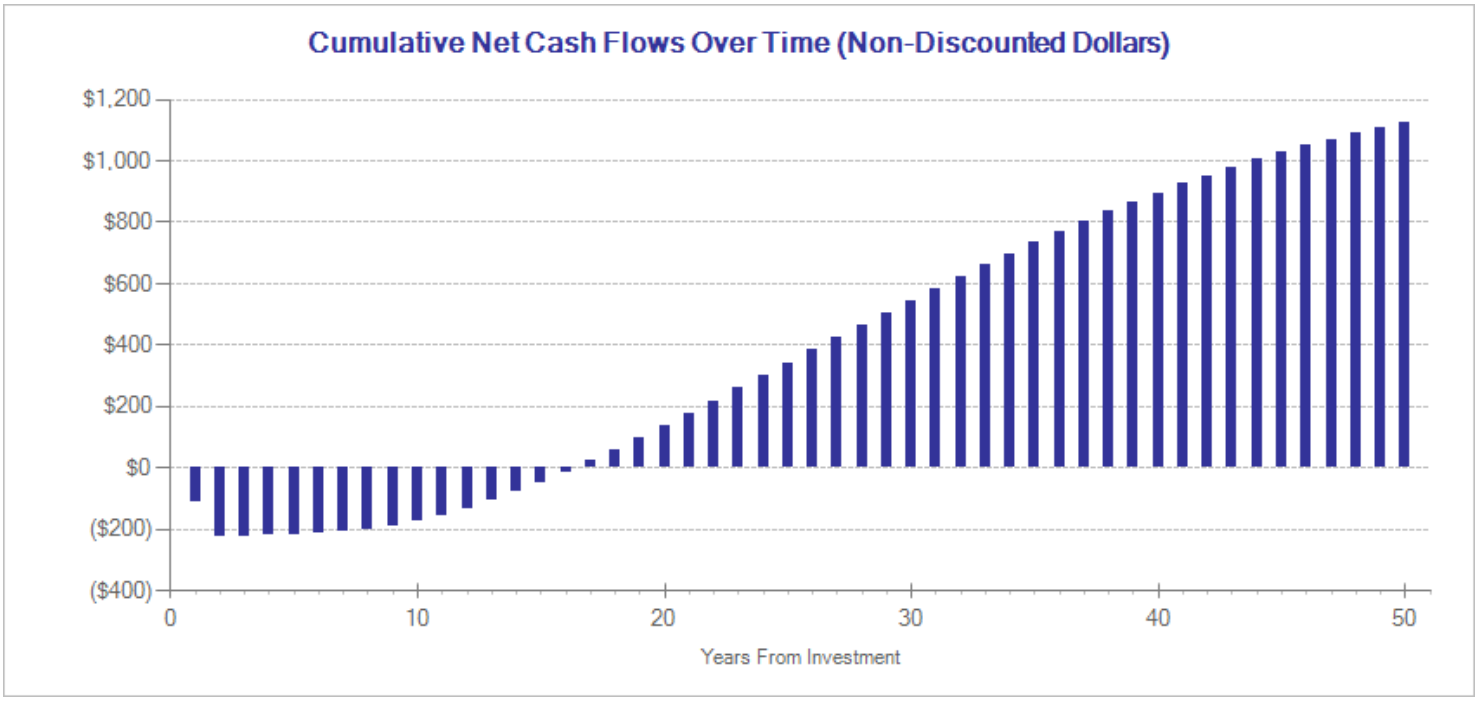
Detailed Cost Estimates

	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		Summary statistics	
Participants	$102	Benefit to cost ratio	$2.86
Taxpayers	$46	Benefits minus costs	$118
Other (1)	$65	Probability of a positive net present value	53 %
Other (2)	($31)		
Total	$182		
Costs	($64)		
Benefits minus cost	$118		

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

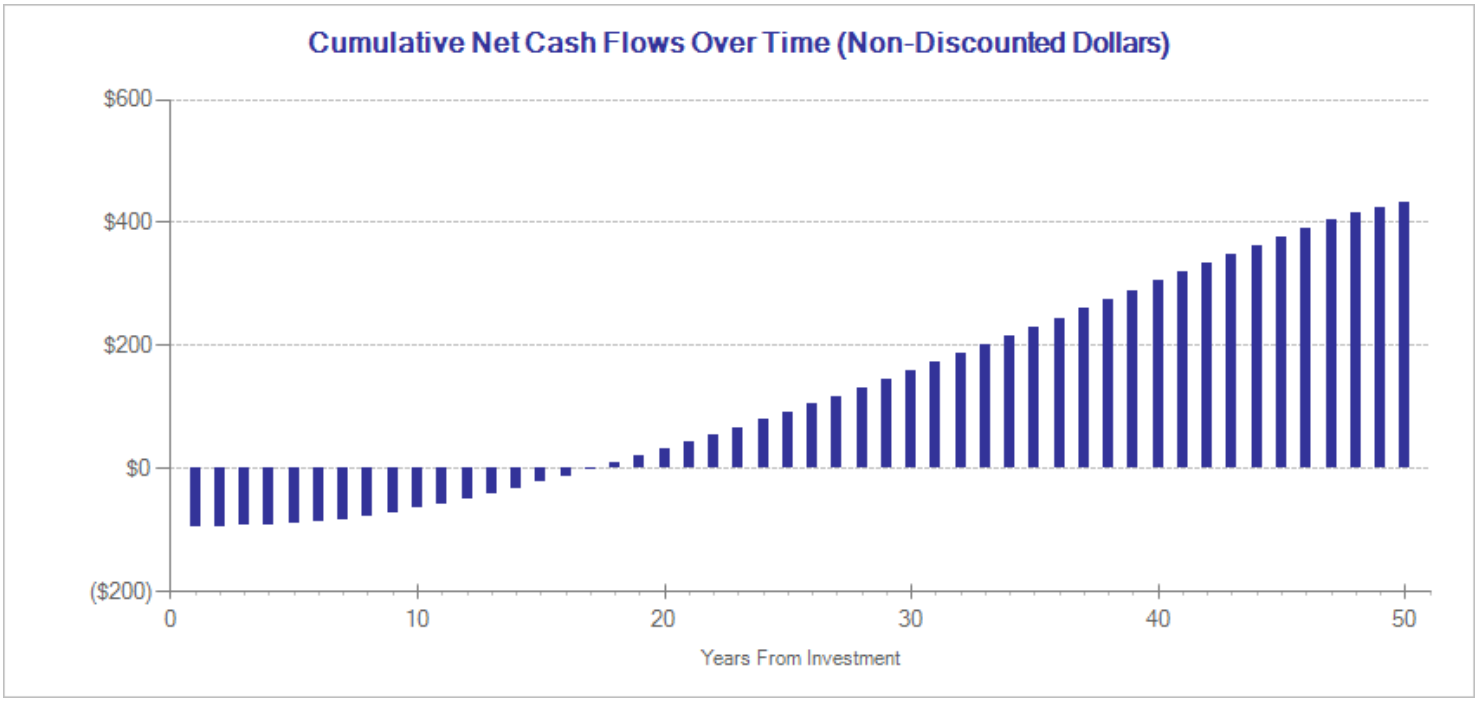
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$63	1	2012	Present value of net program costs (in 2013 dollars)	($64)
Comparison costs	$0	1	2012	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.

Promoting Alternative Thinking Strategies (PATHS)

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

Program Description: The PATHS Curriculum is a classroom socioemotional learning (SEL) program designed to improve self-control, emotional understanding, interpersonal relationships, and social problem-solving skills. We consider PATHS to be a prevention program based on the assumption that when SEL skills taught in this program are applied, serious emotional and behavioral problems are prevented.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$23	Benefit to cost ratio	$0.09
Taxpayers	$18	Benefits minus costs	($107)
Other (1)	$23	Probability of a positive net present value	8 %
Other (2)	($54)		
Total	$10		
Costs	($117)		
Benefits minus cost	($107)		

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	$1	$4	$1	$6
Labor market earnings (hs grad)	$21	$9	$10	$0	$40
Health care (disruptive behavior disorder)	$2	$7	$9	$4	$22
Adjustment for deadweight cost of program	$0	$0	$0	($58)	($58)
Totals	$23	$18	$23	($54)	$10

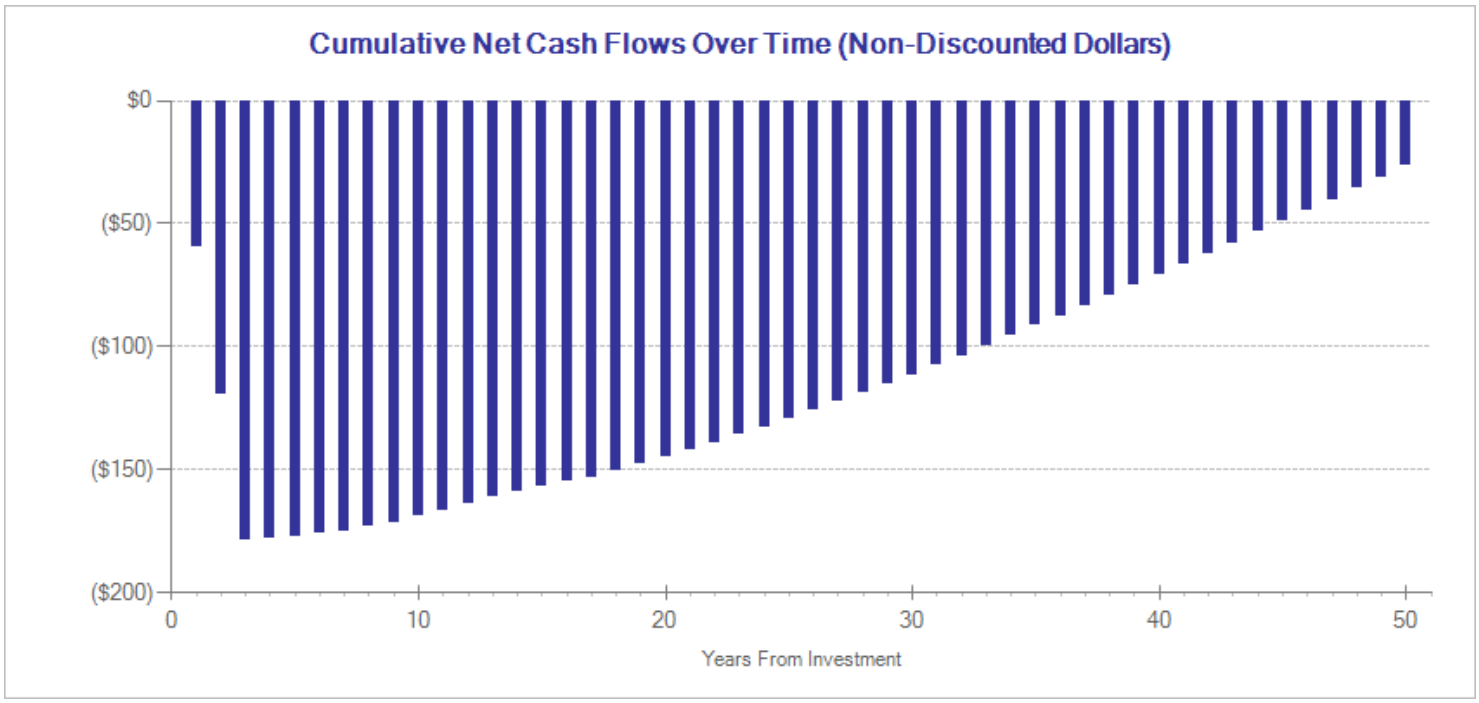
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$30	3	1998	Present value of net program costs (in 2013 dollars)	($117)
Comparison costs	$0	3	1998	Uncertainty (+ or - %)	10 %

Based on midpoint of annual per-student costs from Blueprints for Violence Prevention: http://www.colorado.edu/cspv/blueprints/modelprograms/PATHS.html.

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
Externalizing behavior symptoms	Primary	4	500	-0.111	0.023	-0.042	0.049	7	-0.020	0.027	10
Internalizing symptoms	Primary	3	302	0.017	0.921	0.006	0.169	7	0.004	0.132	9

Citations Used in the Meta-Analysis

Conduct Problems Prevention Research Group. (1999). Initial impact of the Fast Track prevention trial for conduct problems: II. Classroom effects. *Journal of Consulting and Clinical Psychology, 67*(5), 648-657.

Domitrovich, C., Cortes, R., & Greenberg, M. (2007). Improving young children's social and emotional competence: A randomized trial of the preschool "PATHS" curriculum. *Journal of Primary Prevention, 28*(2), 67-91.

Greenberg, M. T., & Kusché, C. A. (1998). Preventive intervention for school-age deaf children: The PATHS curriculum. *Journal of Deaf Studies and Deaf Education, 3*(1), 49-63.

Riggs, N., Greenberg, M., Kusché C. A., C., & Pentz, M. (2006). The mediational role of neurocognition in the behavioral outcomes of a social-emotional prevention program in elementary school students: Effects of the PATHS curriculum. *Prevention Science, 7*(1), 91- 102.

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		Summary statistics	
Participants	($67)	Benefit to cost ratio	($6.92)
Taxpayers	($35)	Benefits minus costs	($178)
Other (1)	($39)	Probability of a positive net present value	33 %
Other (2)	($15)		
Total	($155)		
Costs	($22)		
Benefits minus cost	($178)		

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)

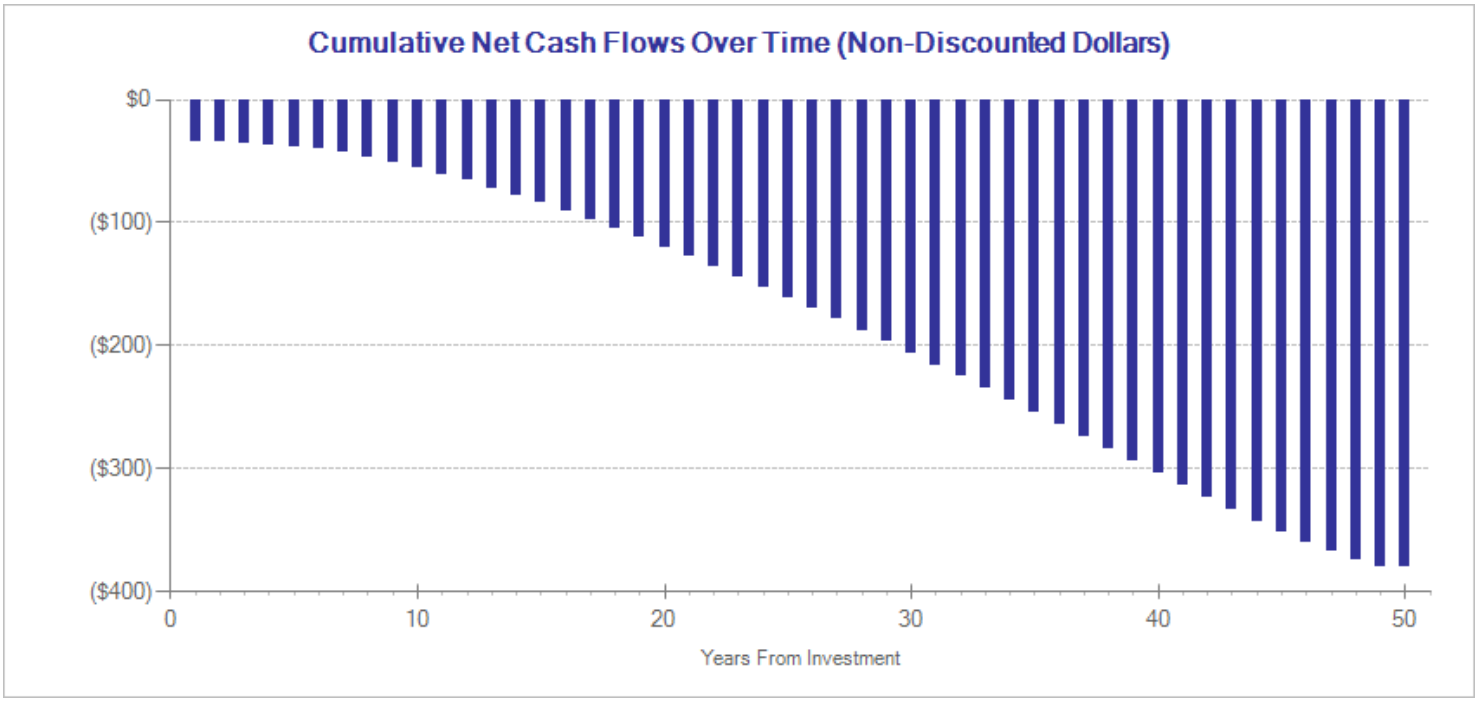
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$86	1	2014	Present value of net program costs (in 2013 dollars)	($22)
Comparison costs	$63	1	2014	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		Summary statistics	
Participants	$10	Benefit to cost ratio	($1.15)
Taxpayers	($19)	Benefits minus costs	($333)
Other (1)	($80)	Probability of a positive net present value	42 %
Other (2)	($89)		
Total	($178)		
Costs	($155)		
Benefits minus cost	($333)		

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)

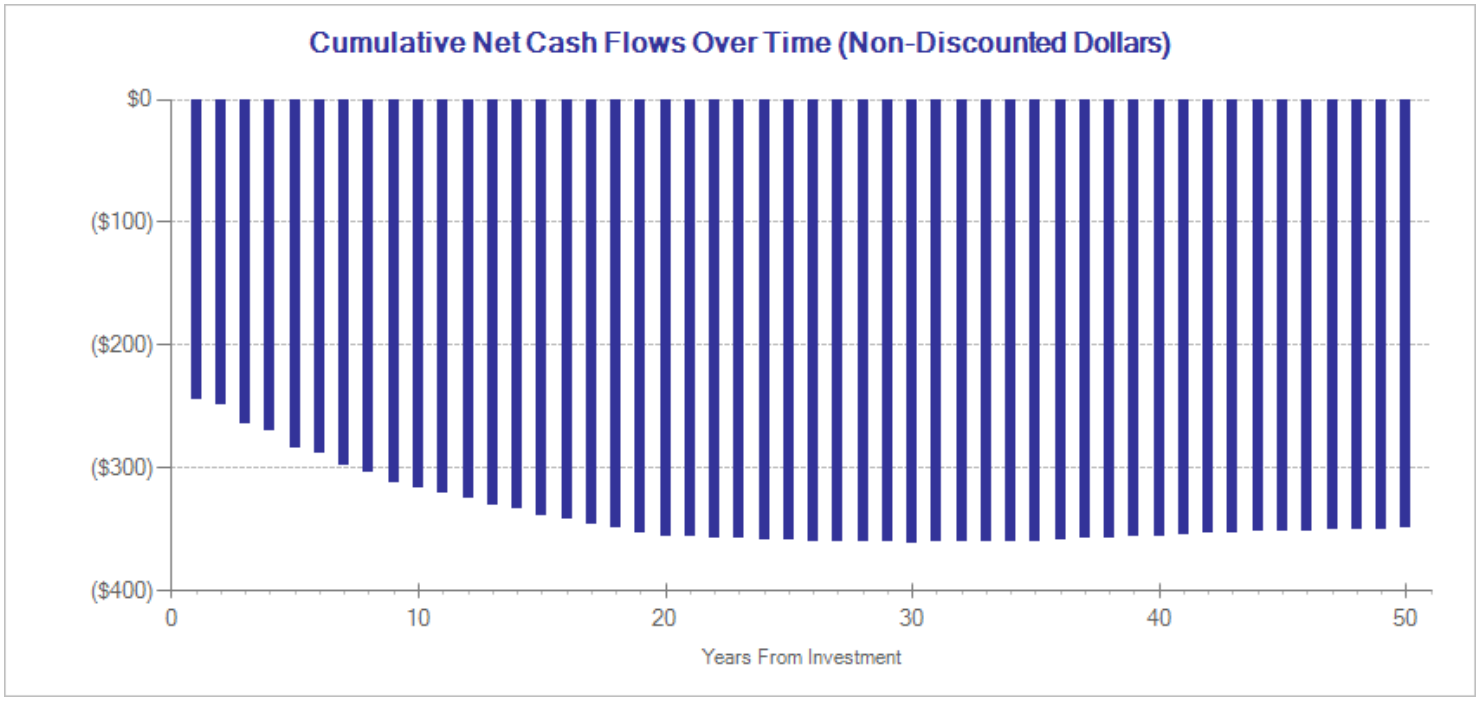
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$155	1	2013	Present value of net program costs (in 2013 dollars)	($155)
Comparison costs	$0	1	2013	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		Summary statistics	
Participants	($246)	Benefit to cost ratio	($26.60)
Taxpayers	($119)	Benefits minus costs	($410)
Other (1)	$1	Probability of a positive net present value	46 %
Other (2)	($31)		
Total	($395)		
Costs	($15)		
Benefits minus cost	($410)		

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)

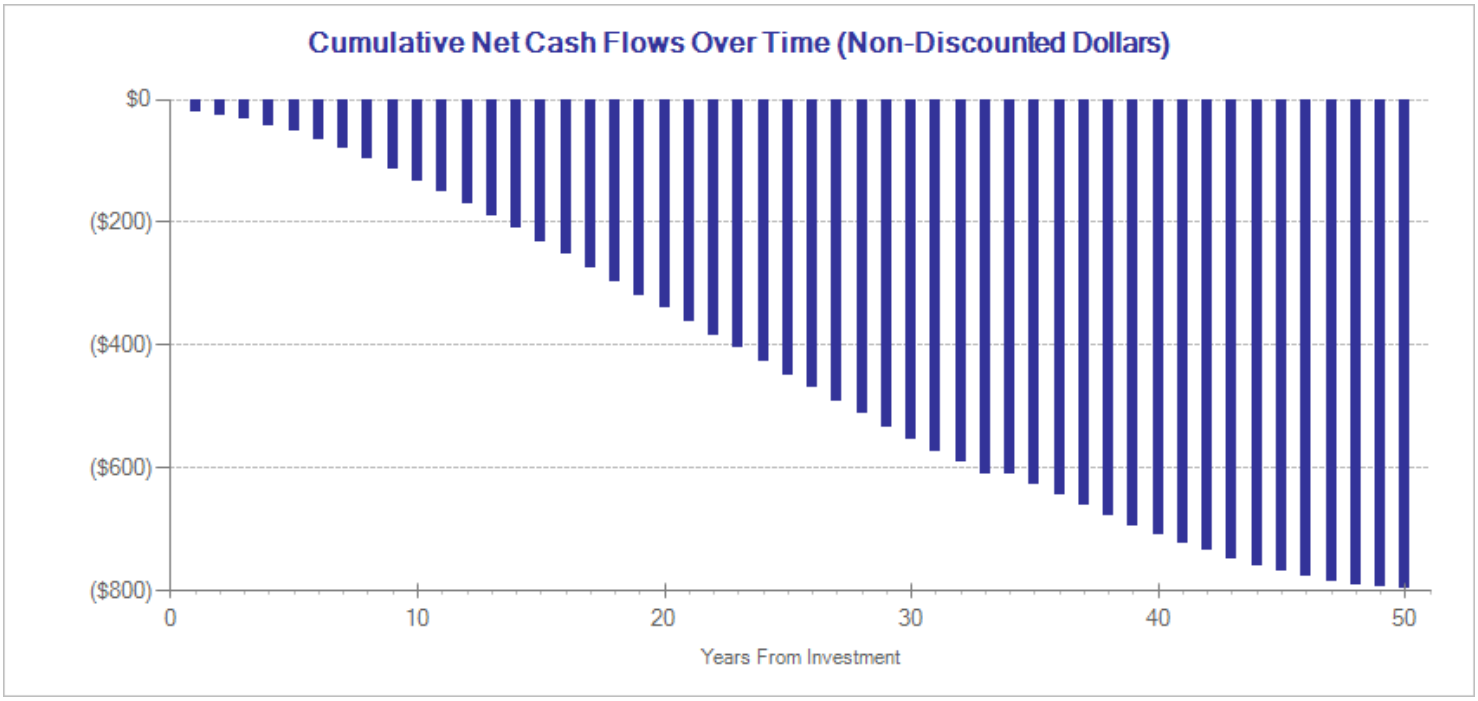
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$15	1	2014	Present value of net program costs (in 2013 dollars)	($15)
Comparison costs	$0	1	2014	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		Summary statistics	
Participants	($2,716)	Benefit to cost ratio	($8.21)
Taxpayers	($1,385)	Benefits minus costs	($6,897)
Other (1)	($1,552)	Probability of a positive net present value	0 %
Other (2)	($495)		
Total	($6,147)		
Costs	($750)		
Benefits minus cost	($6,897)		

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)

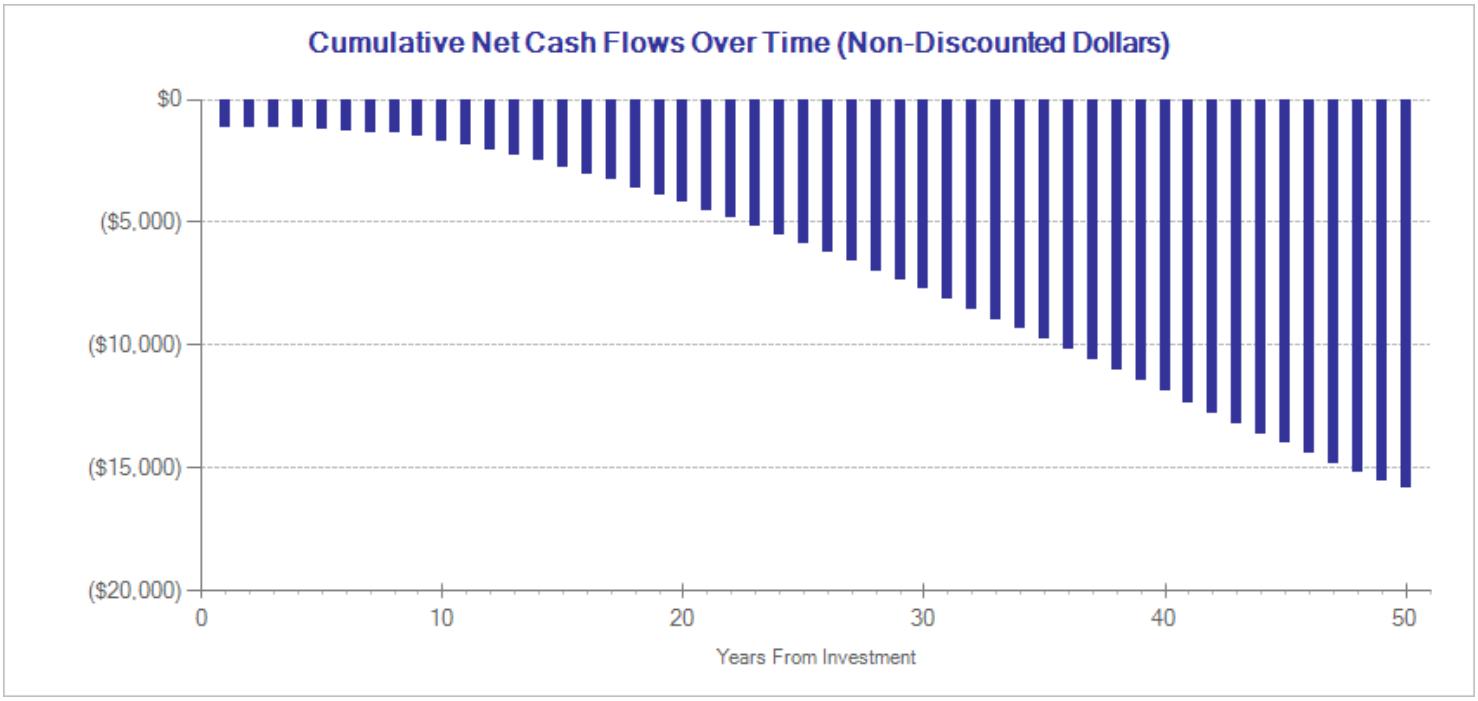
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$758	1	2014	Present value of net program costs (in 2013 dollars)	($750)
Comparison costs	$0	1	2014	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.

Nurse Family Partnership for low-income families

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

Program Description: The Nurse Family Partnership program provides intensive visitation by nurses during a woman's pregnancy and the first two years after birth; the program was developed by Dr. David Olds. The goal is to promote the child's development and provide support and instructive parenting skills to the parents. The program is designed to serve low-income, at-risk pregnant women bearing their first child.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$11,607	Benefit to cost ratio	$2.77
Taxpayers	$9,955	Benefits minus costs	$17,332
Other (1)	$9,540	Probability of a positive net present value	71 %
Other (2)	($3,928)		
Total	$27,174		
Costs	($9,842)		
Benefits minus cost	$17,332		

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	$1,323	$3,932	$659	$5,914
Labor market earnings (test scores)	$1,971	$841	$979	$0	$3,791
Child abuse and neglect	$1,130	$355	$0	$178	$1,663
K-12 grade repetition	$0	($94)	$0	($47)	($141)
K-12 special education	$0	($1,007)	$0	($506)	($1,513)
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$1
Health care (disruptive behavior disorder)	$12	$38	$47	$19	$116
Subtotals	$3,114	$1,456	$4,959	$302	$9,831
From secondary participant					
Crime	$0	$201	$729	$97	$1,027
Labor market earnings (hs grad)	$9,593	$4,092	$4,750	$0	$18,436
Public assistance	($945)	$2,996	$0	$0	$2,051
Health care (educational attainment)	($155)	$1,211	($898)	$606	$764
Subtotals	$8,493	$8,499	$4,581	$703	$22,277
Adjustment for deadweight cost of program	$0	$0	$0	($4,934)	($4,934)
Totals	$11,607	$9,955	$9,540	($3,928)	$27,174

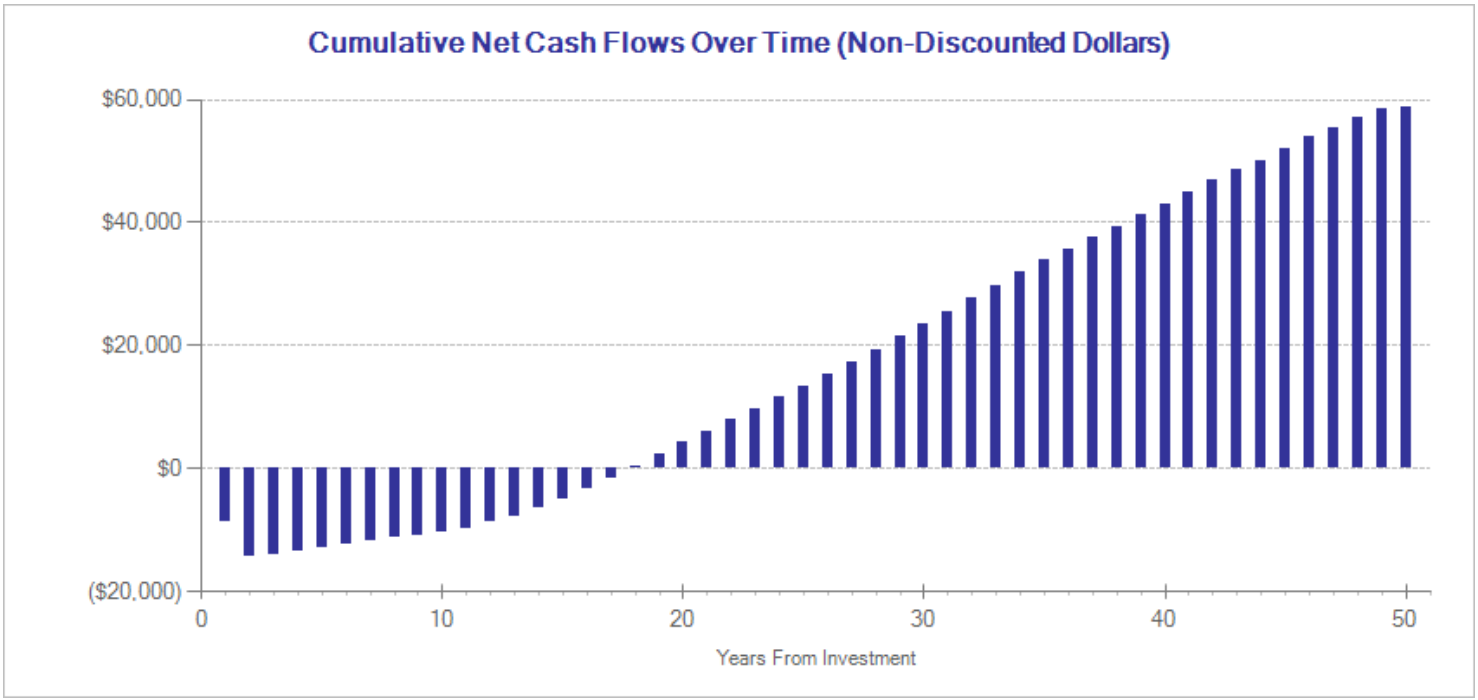
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$5,383	1.68	2007	Present value of net program costs (in 2013 dollars)	($9,842)
Comparison costs	$0	1	2007	Uncertainty (+ or - %)	10 %

Average annual expenditures per family and average length of service provided by Kristen Rogers at Nurse Family Partnership, Northwest Regional Office July, 08.

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	Secondary	2	266	-0.265	0.472	-0.027	0.151	31	-0.027	0.151	41
Crime	Primary	1	37	-0.700	0.001	-0.252	0.214	15	-0.252	0.214	25
Disruptive behavior disorder symptoms	Primary	1	191	-0.218	0.013	-0.218	0.087	12	-0.104	0.063	15
Child abuse and neglect	Primary	1	38	-0.883	0.001	-0.318	0.140	15	-0.318	0.140	17
Test scores	Primary	2	394	0.132	0.043	0.132	0.065	5	0.041	0.072	17
High school graduation	Secondary	2	401	0.096	0.271	0.096	0.088	23	0.096	0.088	23
K-12 grade repetition	Primary	1	191	0.140	0.262	0.140	0.125	12	0.140	0.125	17
K-12 special education	Primary	1	191	0.288	0.068	0.288	0.158	12	0.288	0.158	17
Substance abuse	Secondary	3	470	-0.274	0.377	-0.088	0.228	28	-0.088	0.228	38
Employment	Secondary	3	423	0.120	0.176	0.086	0.070	26	0.086	0.070	36
Public assistance	Secondary	3	470	-0.165	0.109	-0.095	0.059	28	-0.095	0.059	38
Internalizing symptoms	Primary	1	191	-0.280	0.024	-0.280	0.124	12	-0.204	0.125	14

Citations Used in the Meta-Analysis

Eckenrode, J., Henderson, C.R., Jr., Powers, J., Campa, M., Lucky, D.W., Olds, D., . . . Sidora-Arcoleo, K. (2010). Long-term effects of prenatal and infancy nurse home visitation on the life course of youths: 19-year follow-up of a randomized trial. *Archives of Pediatrics and Adolescent Medicine, 164*(1), 9-15.

Kitzman, H.J., Olds, D.L., Cole, R.E., Hanks, C.A., Anson, E.A., Arcoleo, K.J., . . . Holmberg, J.R. (2010). Enduring effects of prenatal and infancy home visiting by nurses on children: Follow-up of a randomized trial among children at age 12 years. *Archives of Pediatrics & Adolescent Medicine, 164*(5), 412-418.

Olds, D.L., Eckenrode, J., Henderson, C.R., Jr., Kitzman, H., Powers, J., Cole, R., . . . Luckey, D. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *JAMA, 278*(8), 637-643.

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Olds, D.L., Robinson, J., Pettitt, L., Luckey, D. W., Holmberg, J., Ng, R.K., . . . Henderson, C.R., Jr. (2004). Effects of home visits by paraprofessionals and by nurses: Age 4 follow-up results of a randomized trial. *Pediatrics, 114*(6), 1560-1568.

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Olds, D.L., Kitzman, H., Hanks, C., Cole, R., Anson, E., Sidora-Arcoleo, K., . . . Bondy, J. (2007). Effects of nurse home visiting on maternal and child functioning: Age-9 follow-up of a randomized trial. *Pediatrics, 120*(4), 832-845.

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Sidora-Arcoleo, K., Anson, E., Lorber, M., Cole, R., Olds, D., & Kitzman, H. (2010). Differential effects of a nurse home- visiting intervention on physically aggressive behavior in children. *Journal of Pediatric Nursing, 25*(1), 35-45.

Eckenrode, J., Henderson, C.R., Jr., Powers, J., Campa, M., Lucky, D.W., Olds, D., . . . Sidora-Arcoleo, K. (2010). Long-term effects of prenatal and infancy nurse home visitation on the life course of youths: 19-year follow-up of a randomized trial. *Archives of Pediatrics and Adolescent Medicine, 164*(1), 9-15.

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		Summary statistics	
Participants	$2,411	Benefit to cost ratio	$30.46
Taxpayers	$1,357	Benefits minus costs	$5,229
Other (1)	$1,551	Probability of a positive net present value	93 %
Other (2)	$89		
Total	$5,407		
Costs	($178)		
Benefits minus cost	$5,229		

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

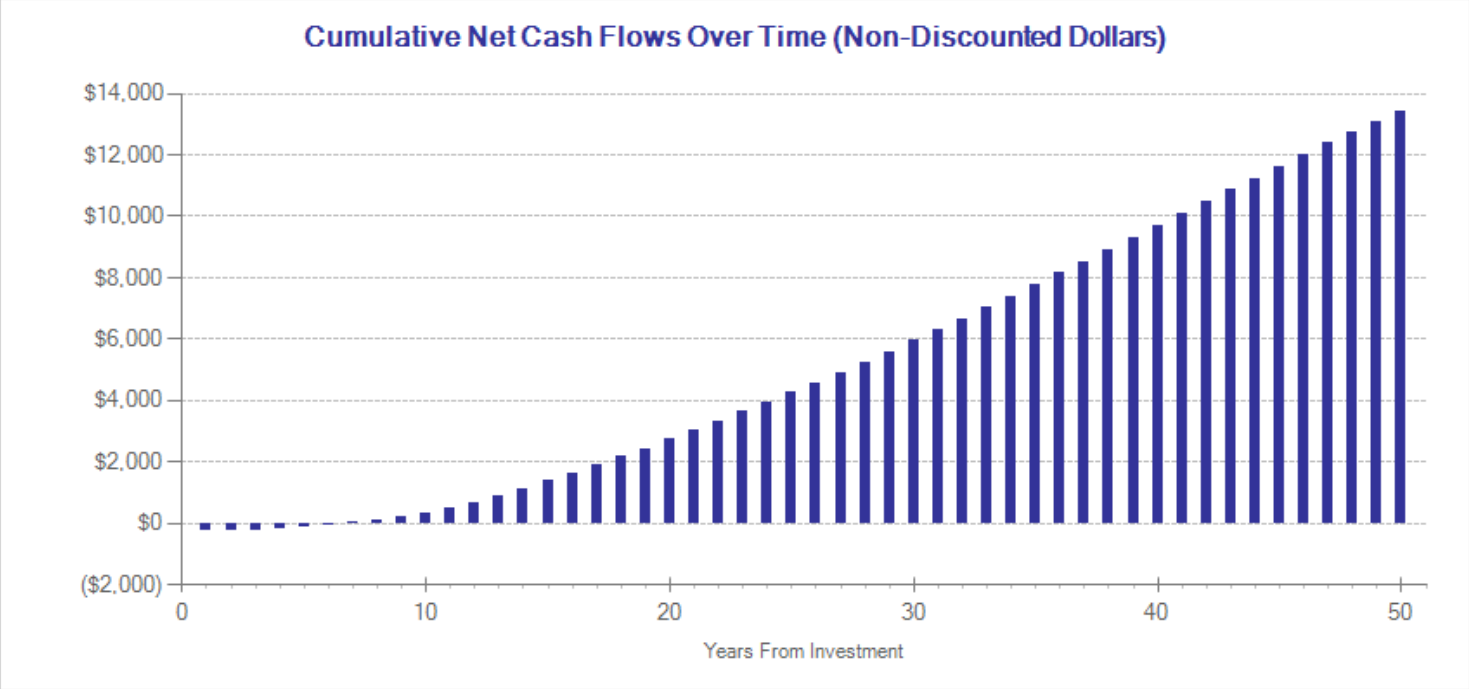
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$140	1	2001	Present value of net program costs (in 2013 dollars)	($178)
Comparison costs	$0	1	2001	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

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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		Summary statistics	
Participants	$2,055	Benefit to cost ratio	$3.51
Taxpayers	$981	Benefits minus costs	$2,751
Other (1)	$1,308	Probability of a positive net present value	66 %
Other (2)	($494)		
Total	$3,850		
Costs	($1,098)		
Benefits minus cost	$2,751		

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

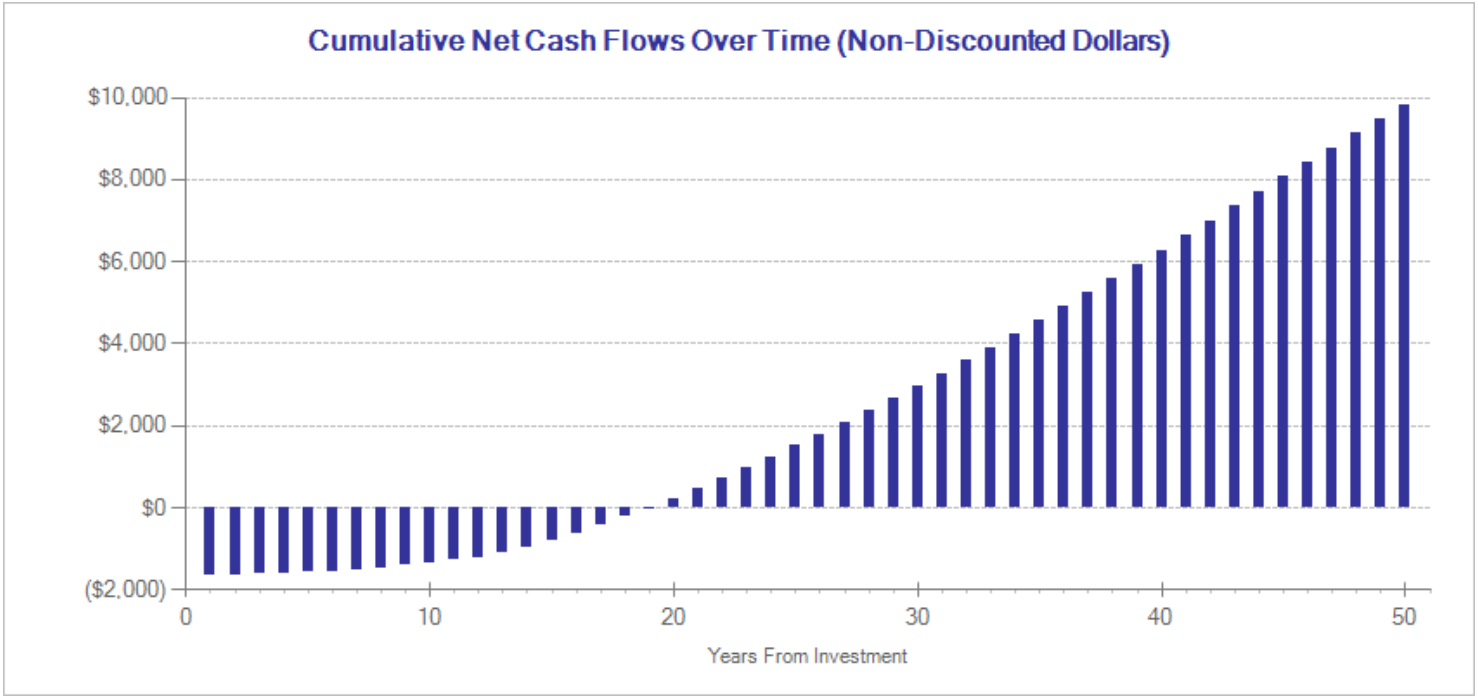
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$880	1	2002	Present value of net program costs (in 2013 dollars)	($1,098)
Comparison costs	$0	1	2002	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

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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.

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		Summary statistics	
Participants	$639	Benefit to cost ratio	$20.26
Taxpayers	$349	Benefits minus costs	$1,321
Other (1)	$396	Probability of a positive net present value	68 %
Other (2)	$6		
Total	$1,390		
Costs	($69)		
Benefits minus cost	$1,321		

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

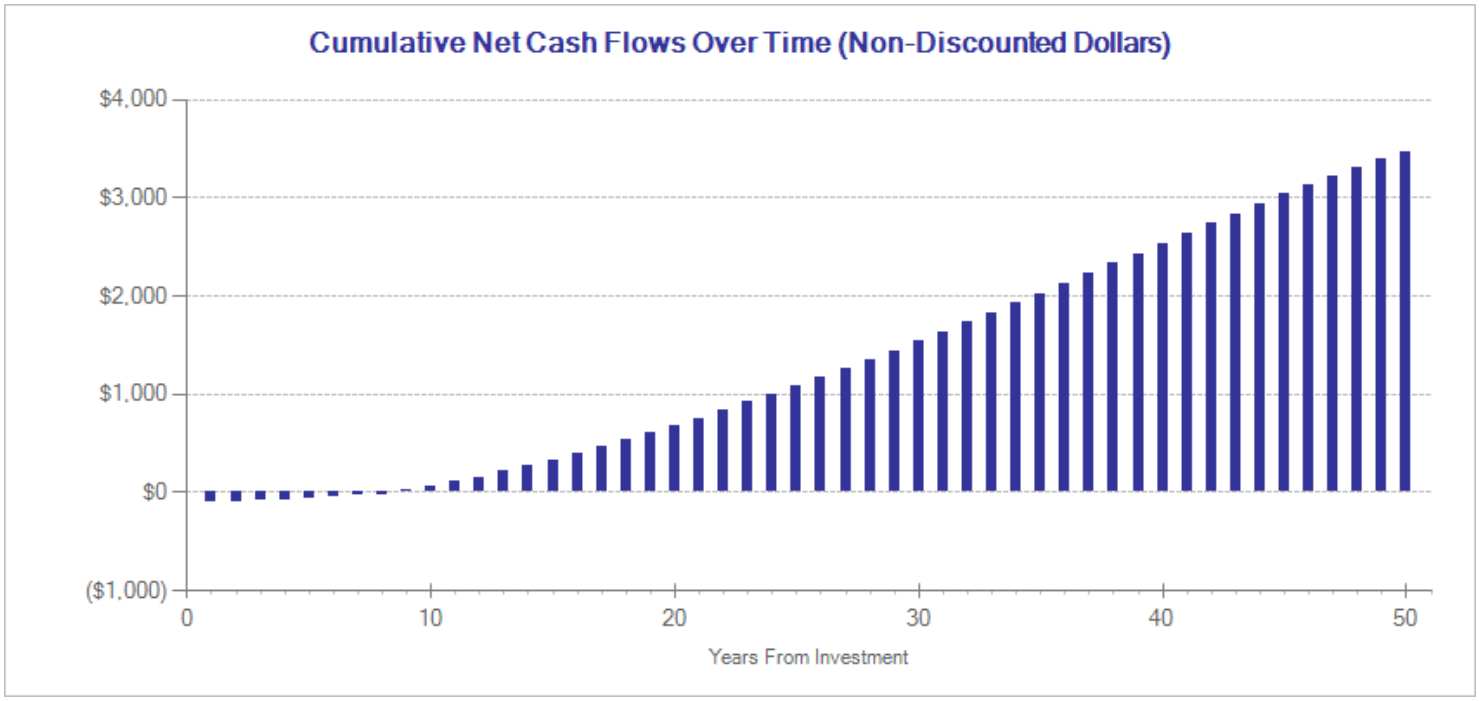
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$68	1	2012	Present value of net program costs (in 2013 dollars)	($69)
Comparison costs	$0	1	2012	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

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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.

Prokhorov, A., Kelder, S., Shegog, R., Murray, N., Peters, R., Agurcia-Parker, C., Cinciripini, P., ... Marani, S. (2008). Impact of A Smoking Prevention Interactive Experience (ASPIRE), an interactive, multimedia smoking prevention and cessation curriculum for culturally diverse high-school students. *Nicotine & Tobacco Research, 10*(9), 1477-1485.

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.

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		Summary statistics	
Participants	$993	Benefit to cost ratio	$2.17
Taxpayers	$526	Benefits minus costs	$765
Other (1)	$171	Probability of a positive net present value	61 %
Other (2)	($272)		
Total	$1,419		
Costs	($654)		
Benefits minus cost	$765		

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

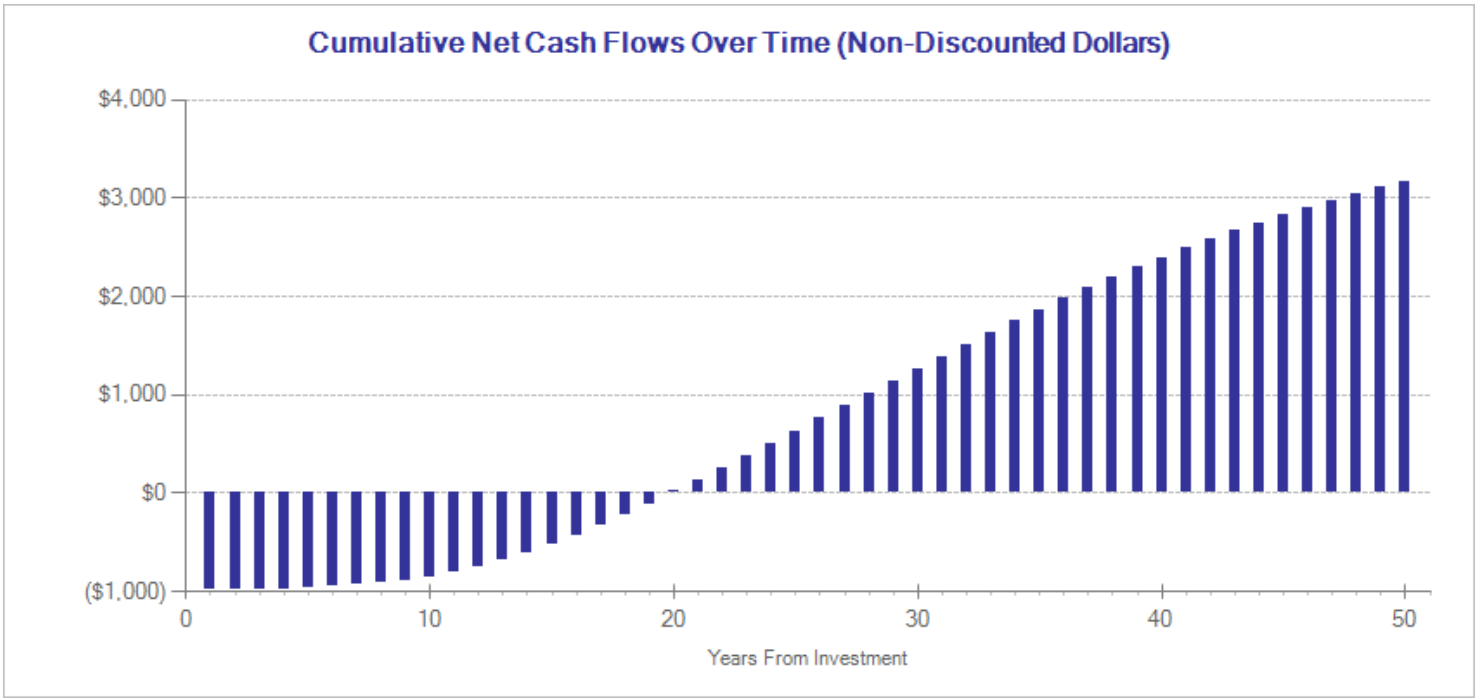
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

Mason, W.A., Kosterman, R., Hawkins, J.D., Haggerty, K.P., & Spoth, R.L. (2003). Reducing adolescents' growth in substance use and delinquency: Randomized trial effects of a parent-training prevention intervention. *Prevention Science, 4*(3), 203-212.

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.

Parents as Teachers

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

Program Description: Parents as Teachers (http://www.parentsasteachers.org/) is a home visiting program for parents and children with a main goal of having children ready to learn by the time they go to school. Parents are visited monthly by parent educators with some college education. Visits typically begin during the mother's pregnancy and may continue until the child enters kindergarten.

Benefit-Cost Summary

Program benefits	
Participants	$2,109
Taxpayers	$988
Other (1)	$820
Other (2)	($1,041)
Total	$2,875
Costs	($2,684)
Benefits minus cost	$191

Summary statistics	
Benefit to cost ratio	$1.07
Benefits minus costs	$191
Probability of a positive net present value	50 %

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	$0	($1)	$0	($1)
Subtotals	$0	$0	($1)	$0	($1)
From secondary participant					
Crime	$0	$138	$402	$69	$609
Labor market earnings (test scores)	$912	$389	$450	$0	$1,751
Child abuse and neglect	$1,202	$378	$0	$189	$1,769
K-12 special education	$0	$40	$0	$20	$60
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$1
Health care (educational attainment)	($6)	$43	($32)	$22	$27
Subtotals	$2,109	$988	$820	$300	$4,217
Adjustment for deadweight cost of program	$0	$0	$0	($1,341)	($1,341)
Totals	$2,109	$988	$820	($1,041)	$2,875

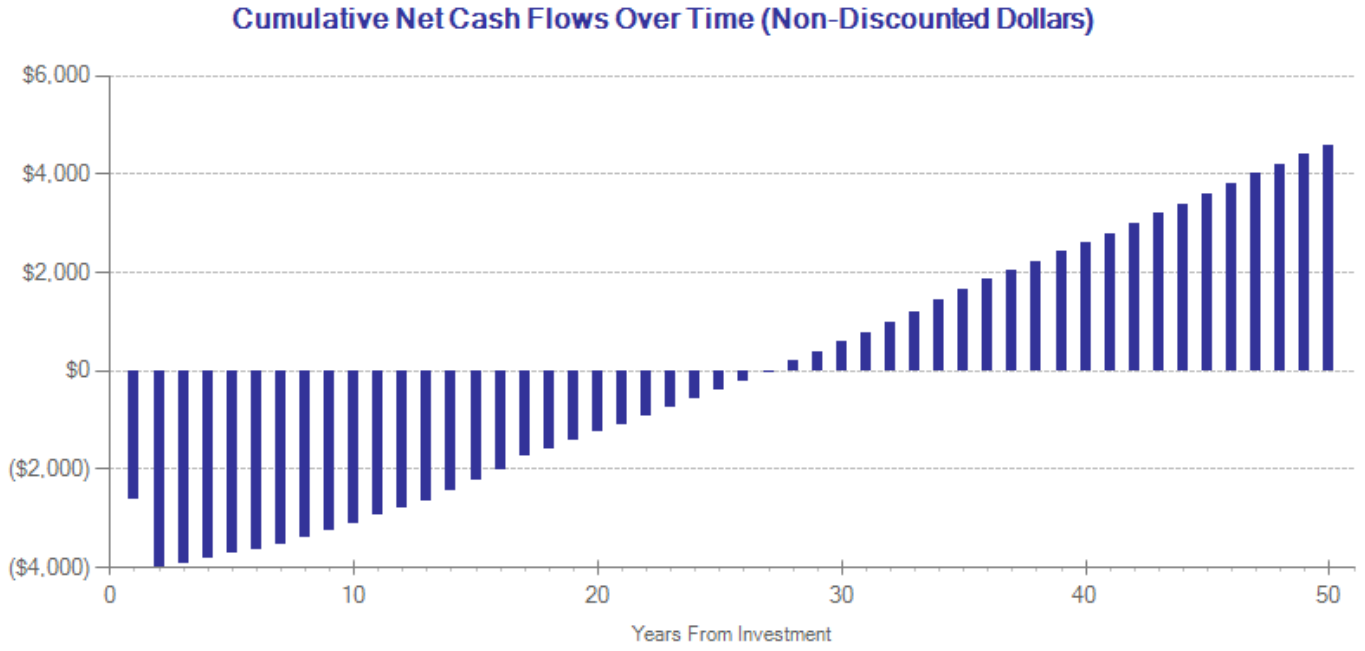
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$1,450	1.5	2003	Present value of net program costs (in 2013 dollars)	($2,684)
Comparison costs	$0	1.5	2003	Uncertainty (+ or - %)	10 %

Average annual cost provided by Parents as Teachers National Center in 2003. Average length of program estimated by WSIPP, based on weighted average of treatment length reported in the original research studies. WSIPP also communicated with Nicole Thomson at the National Center (July 2014), who provided assistance in gathering some details not reported in the original studies.

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
High school graduation	Primary	1	79	-0.018	0.926	-0.018	0.189	22	-0.018	0.189	22
Repeat teen birth	Primary	1	77	0.089	0.678	0.089	0.215	22	0.089	0.215	22
Test scores	Secondary	5	625	0.086	0.271	0.086	0.084	4	0.018	0.092	17
Child abuse and neglect	Secondary	1	149	-0.378	0.482	-0.378	0.537	3	-0.378	0.537	13
High school grad via test scores	Secondary	n/a	0	n/a	n/a	0.006	0.028	17	0.006	0.028	17

Citations Used in the Meta-Analysis

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Other home visiting programs for at-risk mothers and children

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

Program Description: This broad grouping of programs focuses on mothers considered to be at risk for parenting problems, based on factors such as maternal age, marital status and education, low household income, lack of social supports, or in some programs, mothers testing positive for drugs at the child's birth. Depending on the program, the content of the home visits consists of instruction in child development and health, referrals for service, or social and emotional support. Some programs provide additional services, such as preschool. This group of programs also includes a subset that is specifically targeted toward preventing repeat pregnancy and birth in the adolescent years.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$3,299	Benefit to cost ratio	$0.96
Taxpayers	$3,333	Benefits minus costs	($212)
Other (1)	$1,587	Probability of a positive net present value	47 %
Other (2)	($2,686)		
Total	$5,533		
Costs	($5,746)		
Benefits minus cost	($212)		

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	$1	$1	$0	$2
Labor market earnings (major depression)	$582	$248	$0	$0	$830
Health care (major depression)	$31	$95	$117	$48	$290
Public assistance	($472)	$1,495	$0	$0	$1,023
Subtotals	$141	$1,838	$118	$48	$2,146
From secondary participant					
Crime	$0	$76	$203	$38	$318
Labor market earnings (test scores)	$2,736	$1,167	$1,358	$0	$5,262
Child abuse and neglect	$437	$20	$0	$10	$468
Out-of-home placement	$0	$73	$0	$37	$110
K-12 special education	$0	$32	$0	$16	$48
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$1
Health care (educational attainment)	($16)	$126	($93)	$63	$80
Subtotals	$3,158	$1,495	$1,469	$165	$6,286
Adjustment for deadweight cost of program	$0	$0	$0	($2,899)	($2,899)
Totals	$3,299	$3,333	$1,587	($2,686)	$5,533

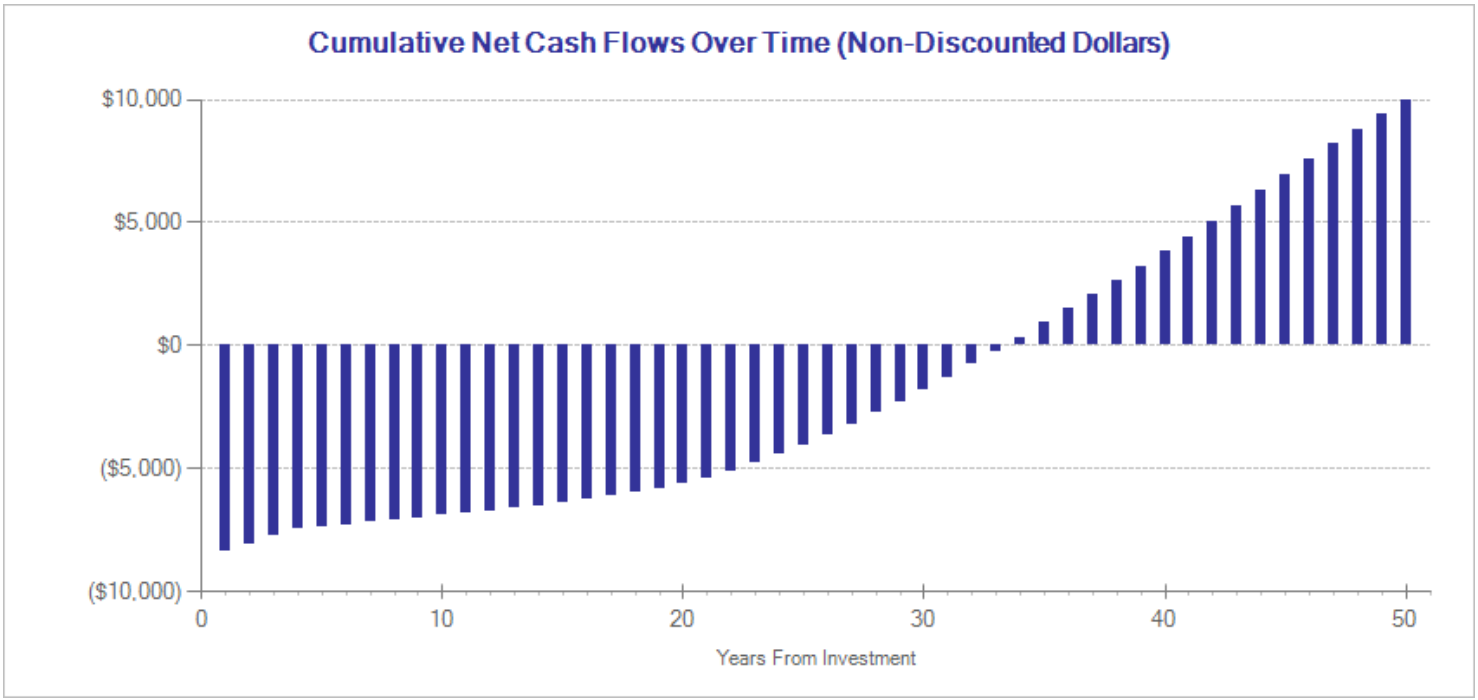
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$5,368	1	2008	Present value of net program costs (in 2013 dollars)	($5,746)
Comparison costs	$0	1	2008	Uncertainty (+ or - %)	10 %

WSIPP analysis, based on costs published in Black, M.M., H. Dubowitz, J. Hutcheson, J. Berenson-Howard, and R.H. Starr Jr. (1995) "A randomized clinical trial of home intervention for children with failure to thrive." Pediatrics 95(6): 807-814; Dawson, P., Van Doorninck, W.J., Robinson, J.L. (1989) Effects of home-based, informal social support on child health. Developmental and Behavioral Pediatrics 10(2):63-67; Ernst, C.C., T.M. Grant, A.P. Streissguth, and P.D alcohol and drug-abusing mothers: II. Three-year findings from the. Sampson. (1999) "Intervention with high risk Seattle model of paraprofessional advocacy." Journal of Community Psychology 27(1): 19-38; and Hardy, J.B. and Streett, R. (1989) "Family support and parenting education in the home: An effective extension of clinic-based preventive health care Institute analysis, based on costs published in Black, M.M., H. Dubowitz, J. Hutcheson, J. Berenson-Howard, and R.H. Starr Jr. (1995) "A randomized clinical trial of home intervention for children with failure to thrive." Pediatrics 95(6): 807-814; Dawson, P., Van Doorninck, W.J., Robinson, J.L. (1989) Effects of home-based, informal social support on child health. Developmental and Behavioral Pediatrics 10(2):63-67; Ernst, C.C., T.M. Grant, A.P. Streissguth, and P.D alcohol and drug-abusing mothers: II. Three-year findings from the. Sampson. (1999) "Intervention with high risk Seattle model of paraprofessional advocacy." Journal of Community Psychology 27(1): 19-38; and Hardy, J.B. and Streett, R. (1989) "Family support and parenting education in the home: An effective extension of clinic-based preventive health care services for poor children." Journal of Pediatrics 115: 927-931.

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
Child abuse and neglect	Secondary	11	667	-0.448	0.041	-0.253	0.135	10	-0.253	0.135	17
Test scores	Secondary	6	153	0.325	0.009	0.253	0.122	4	0.053	0.134	17
Major depressive disorder	Primary	4	249	-0.062	0.508	-0.062	0.094	24	-0.032	0.115	29
Out-of-home placement	Secondary	6	330	-0.107	0.636	-0.107	0.226	8	-0.107	0.226	17
Repeat teen pregnancy	Primary	6	576	0.071	0.371	0.079	0.080	19	0.079	0.080	19
Repeat teen birth	Primary	6	650	-0.111	0.434	-0.111	0.141	19	-0.111	0.141	19
High school graduation	Primary	1	392	0.062	0.504	0.062	0.093	22	0.062	0.093	22
High school grad via test scores	Secondary	n/a	0	n/a	n/a	0.017	0.041	18	0.017	0.041	18
Public assistance	Primary	1	184	-0.041	0.761	-0.041	0.135	22	-0.041	0.135	22

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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		Summary statistics	
Participants	$0	Benefit to cost ratio	$0.21
Taxpayers	$51	Benefits minus costs	($255)
Other (1)	$155	Probability of a positive net present value	47 %
Other (2)	($137)		
Total	$68		
Costs	($323)		
Benefits minus cost	($255)		

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

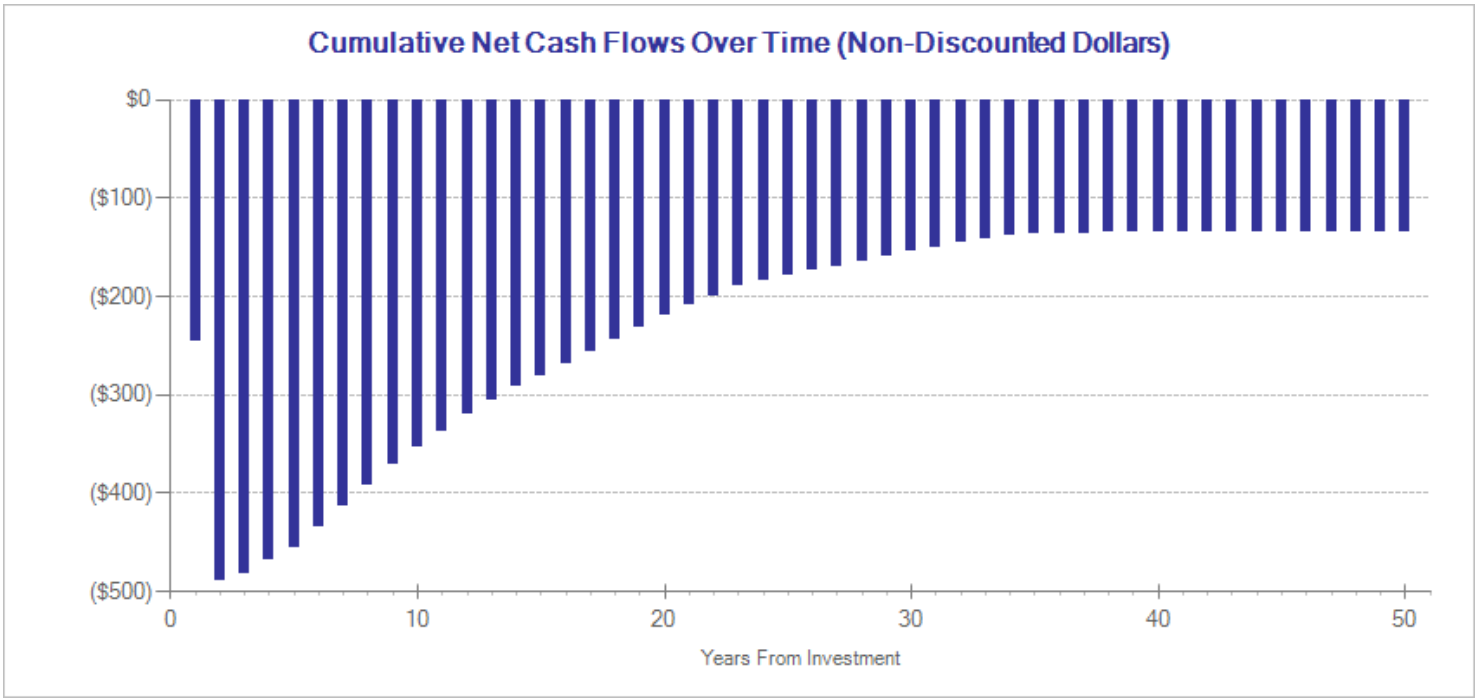
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

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Healthy Families America

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

Program Description: Healthy Families America (http://www.healthyfamiliesamerica.org) is a network of programs that grew out of the Hawaii Healthy Start program. At-risk mothers are identified and enrolled either during pregnancy or shortly after the birth of a child. The intervention involves home visits by trained paraprofessionals who provide information on parenting and child development, parenting classes, and case management.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$1,938	Benefit to cost ratio	$0.51
Taxpayers	$2,092	Benefits minus costs	($2,305)
Other (1)	$306	Probability of a positive net present value	46 %
Other (2)	($1,942)		
Total	$2,394		
Costs	($4,698)		
Benefits minus cost	($2,305)		

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	$10	$27	$5	$42
Labor market earnings (illicit drug abuse/dependence)	($32)	($14)	$0	($1)	($47)
Health care (illicit drug abuse/dependence)	($5)	($7)	($8)	($4)	($24)
Health care (major depression)	$32	$98	$122	$49	$301
Public assistance	($194)	$616	$0	$0	$421
Labor market earnings (problem alcohol use)	$1,518	$647	$0	$2	$2,167
Property loss (problem alcohol use)	$3	$0	$5	$0	$8
Subtotals	$1,321	$1,350	$146	$51	$2,869
From secondary participant					
Crime	$0	$45	$120	$22	$187
Labor market earnings (test scores)	$50	$21	$27	$0	$98
Child abuse and neglect	$563	$177	$0	$88	$828
K-12 grade repetition	$0	$8	$0	$4	$12
K-12 special education	$0	$480	$0	$239	$720
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Health care (disruptive behavior disorder)	$3	$10	$13	$5	$31
Subtotals	$617	$742	$160	$358	$1,876
Adjustment for deadweight cost of program	$0	$0	$0	($2,351)	($2,351)
Totals	$1,938	$2,092	$306	($1,942)	$2,394

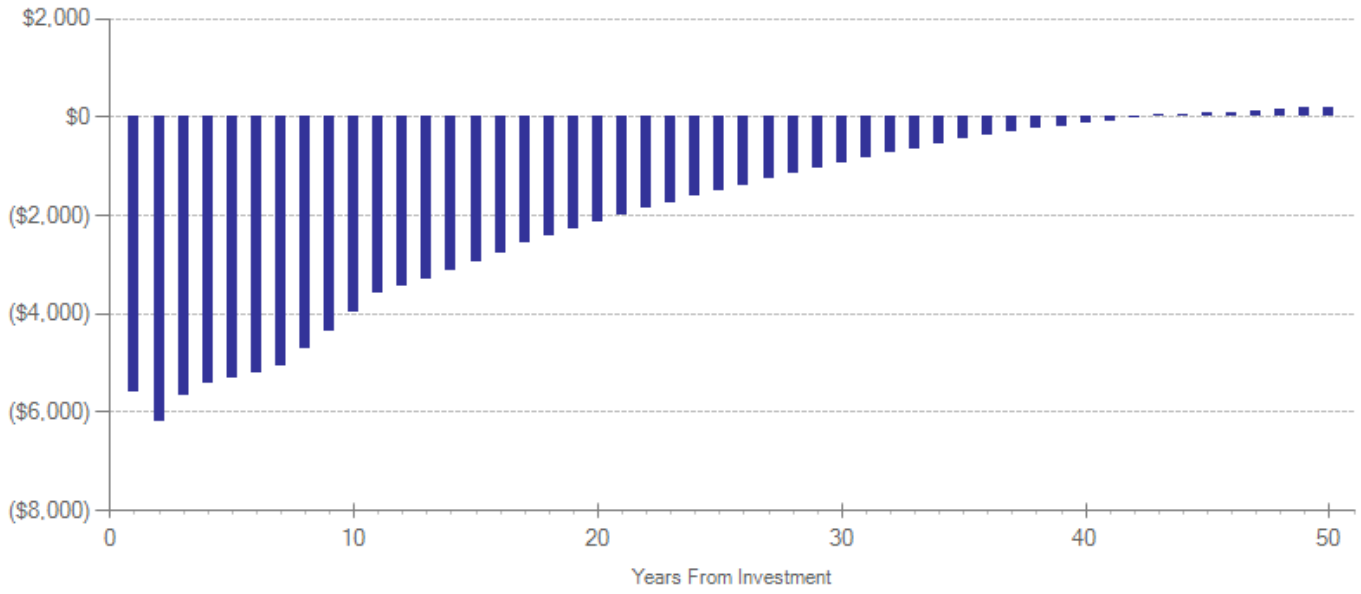
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	$3,348	1.18	2004	Present value of net program costs (in 2013 dollars)	($4,698)
Comparison costs	$0	1	2004	Uncertainty (+ or - %)	10 %

Average annual cost per family from HFA survey of sites, FY2004 (available from: http://www.healthyfamiliesamerica.org/network_resources/hfa_state_of_state_systems.pdf). Average length of service provided by Prevent Child Abuse America, conversation in September, 2004.

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
Public assistance	Primary	3	998	-0.016	0.864	-0.016	0.047	25	-0.016	0.047	35
Major depressive disorder	Primary	3	817	-0.069	0.253	-0.069	0.061	25	-0.036	0.075	27
Child abuse and neglect	Secondary	7	3143	-0.135	0.313	-0.135	0.133	2	-0.135	0.133	12
K-12 grade repetition	Secondary	1	452	-0.015	0.903	-0.015	0.122	7	-0.015	0.122	17
K-12 special education	Secondary	1	452	-0.216	0.062	-0.216	0.116	7	-0.216	0.116	17
Test scores	Secondary	4	770	0.013	0.898	0.013	0.098	4	0.003	0.108	17
Internalizing symptoms	Secondary	2	720	-0.160	0.271	-0.160	0.145	3	-0.117	0.122	5
Illicit drug abuse or dependence	Primary	1	373	0.021	0.895	0.021	0.163	25	0.021	0.163	35
High school grad via test scores	Secondary	n/a	0	n/a	n/a	0.002	0.013	18	0.002	0.013	18
Externalizing behavior symptoms	Secondary	2	578	-0.065	0.607	-0.065	0.125	5	-0.031	0.066	8
Problem alcohol use	Primary	1	373	-0.166	0.335	-0.166	0.172	25	-0.023	0.258	27

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Parent Child Home Program

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

Program Description: The Parent-Child Home Program (http://www.parent-child.org/) is targeted at two- and three- year olds whose parents have a limited education or who have other obstacles to educational success. The program involves twice weekly, half-hour visits from trained paraprofessionals over a period of two years. Each week, the visitor brings a new toy or book which she uses to demonstrate verbal interaction techniques and encourage learning through play.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$1,544	Benefit to cost ratio	$0.21
Taxpayers	$1,394	Benefits minus costs	($4,458)
Other (1)	$727	Probability of a positive net present value	33 %
Other (2)	($2,455)		
Total	$1,210		
Costs	($5,668)		
Benefits minus cost	($4,458)		

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	$0	$1	$0	$1
Labor market earnings (test scores)	$1,552	$662	$775	$0	$2,990
K-12 grade repetition	$0	$59	$0	$30	$89
K-12 special education	$0	$606	$0	$303	$909
Health care (educational attainment)	($8)	$66	($49)	$33	$42
Adjustment for deadweight cost of program	$0	$0	$0	($2,821)	($2,821)
Totals	$1,544	$1,394	$727	($2,455)	$1,210

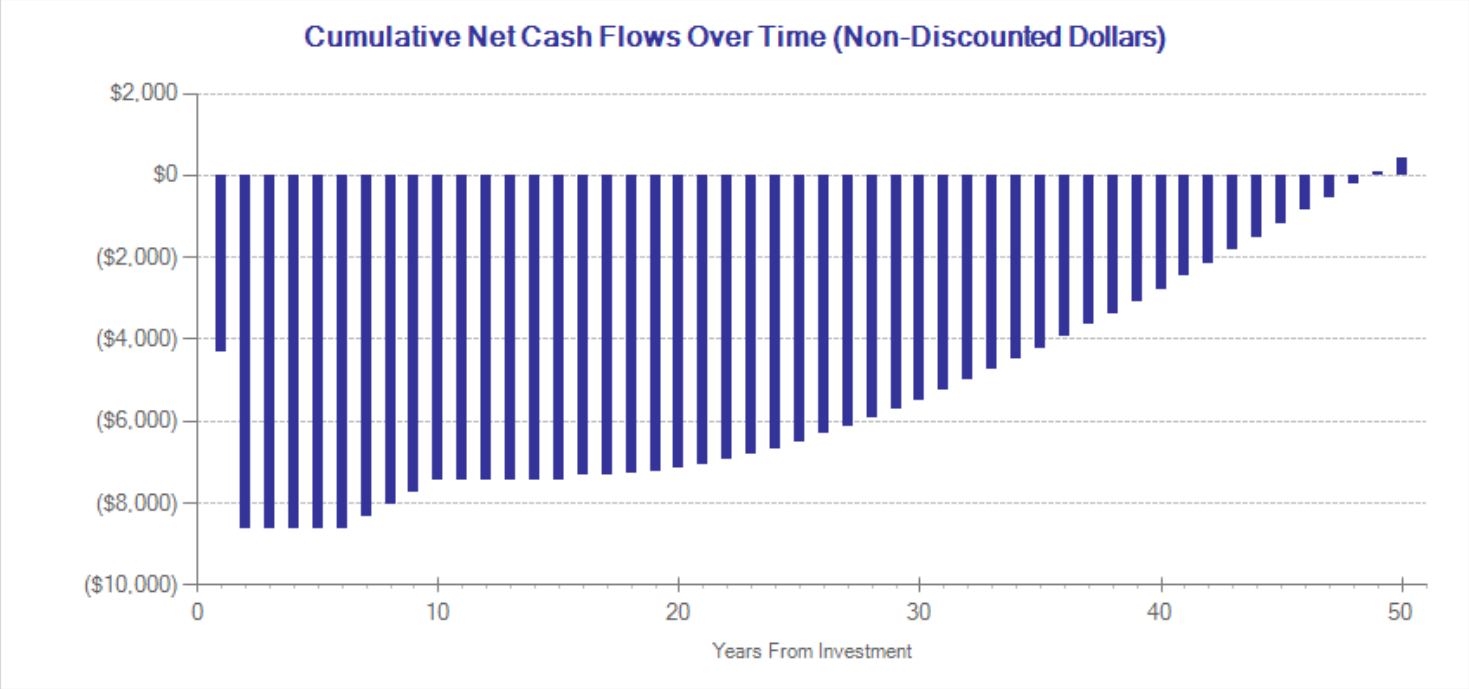
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$2,800	2	2011	Present value of net program costs (in 2013 dollars)	($5,668)
Comparison costs	$0	1	2011	Uncertainty (+ or - %)	10 %

Average annual cost per family provided by The Parent-Child Home Program's National Center, June, 2011.

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
Test scores	Primary	4	211	0.224	0.162	0.138	0.121	4	0.029	0.133	17
K-12 special education	Primary	1	85	-0.626	0.021	-0.225	0.272	8	-0.225	0.272	17
K-12 grade repetition	Primary	1	74	-0.285	0.421	-0.103	0.354	8	-0.103	0.354	17
High school grad via test scores	Primary	n/a	0	n/a	n/a	0.009	0.041	17	0.009	0.041	17

Citations Used in the Meta-Analysis

Levenstein, P., O'Hara, J., & Madden, J. (1983). The Mother-Child Home Program of the Verbal Interaction Project. In The Consortium for Longitudinal Studies (Contributors), *As the twig is bent . . .: Lasting effects of preschool programs* (pp. 237-263). Hillsdale, NJ: Lawrence Erlbaum Associates.

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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		Summary statistics	
Participants	$11,544	Benefit to cost ratio	$782.07
Taxpayers	$5,650	Benefits minus costs	$30,760
Other (1)	$684	Probability of a positive net present value	100 %
Other (2)	$12,922		
Total	$30,799		
Costs	($39)		
Benefits minus cost	$30,760		

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

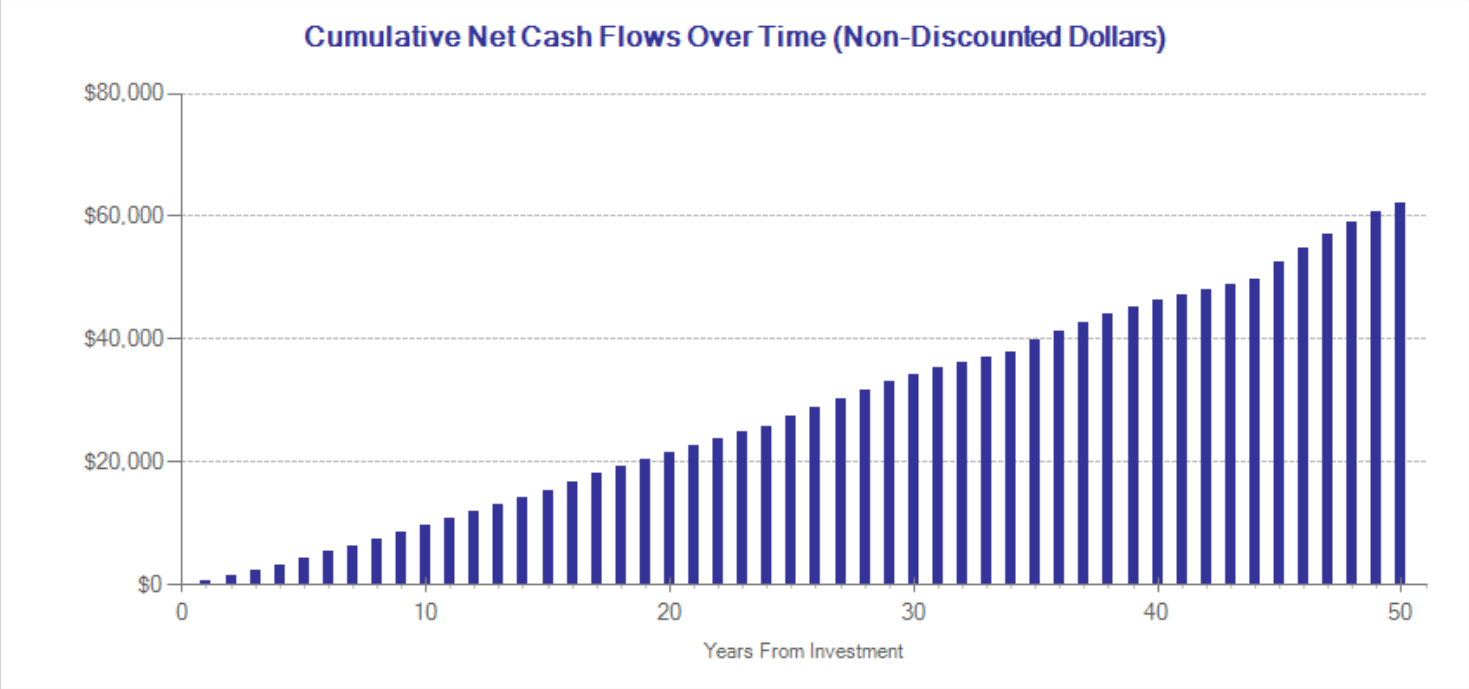
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$40	1	2012	Present value of net program costs (in 2013 dollars)	($39)
Comparison costs	$1	1	2012	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.

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Haug, S., Meyer, C., & John, U. (2011). Efficacy of an internet program for smoking cessation during and after inpatient rehabilitation treatment: a quasi-randomized controlled trial. *Addictive Behaviors, 36*(12), 1369-1372.

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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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		Summary statistics	
Participants	$6,565	Benefit to cost ratio	$351.58
Taxpayers	$3,208	Benefits minus costs	$18,018
Other (1)	$384	Probability of a positive net present value	100 %
Other (2)	$7,912		
Total	$18,069		
Costs	($51)		
Benefits minus cost	$18,018		

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

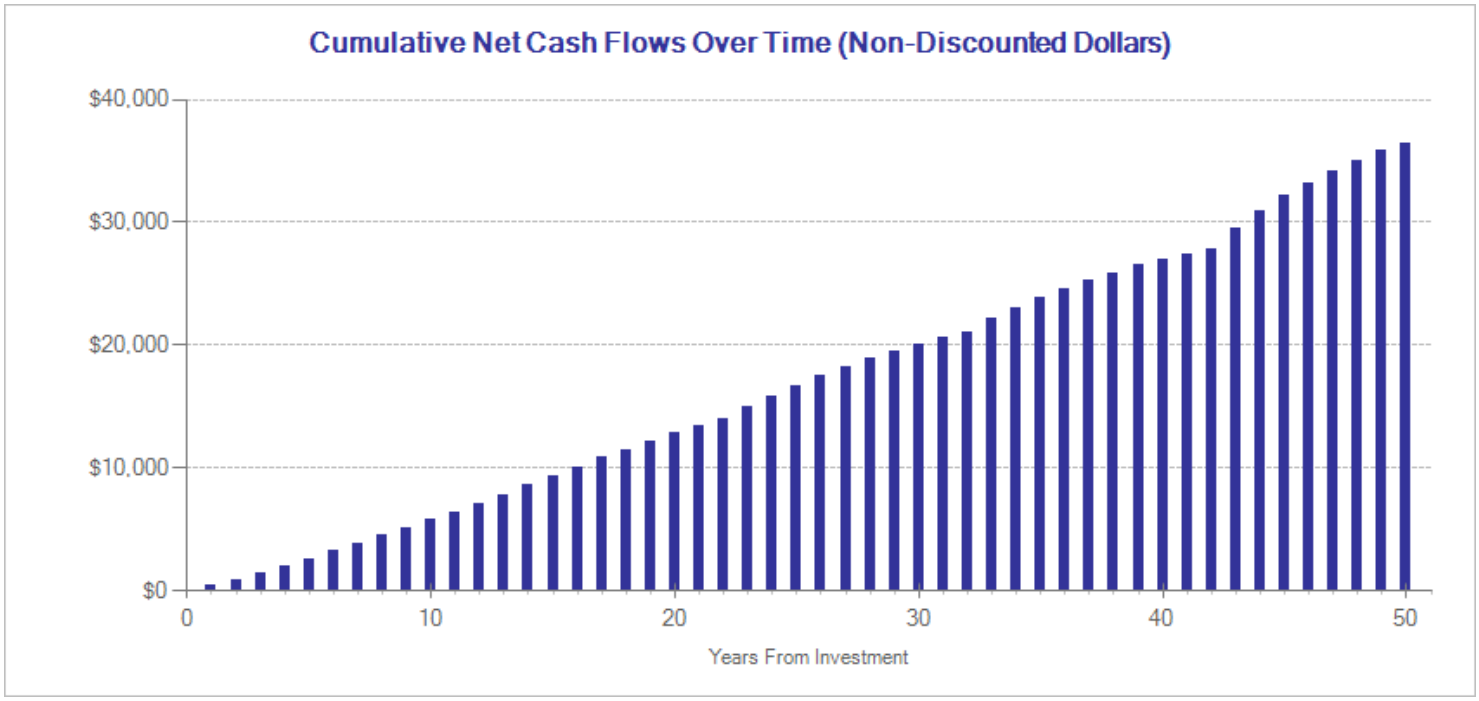
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$52	1	2014	Present value of net program costs (in 2013 dollars)	($51)
Comparison costs	$0	1	2014	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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Free, C., Knight, R., Robertson, S., Whittaker, R., Edwards, P., Zhou, W., Rodgers, A., Cairns, J., Kenward, M.G., & Roberts, I. (2011). Smoking cessation support delivered via mobile phone text messaging (txt2stop): a single-blind, randomised trial. *Lancet, 378* (9785), 49-55.

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.

Haug, S., Schaub, M.P., Venzin, V., Meyer, C., & John, U. (2013). Efficacy of a text message-based smoking cessation intervention for young people: a cluster randomized controlled trial. *Journal of Medical Internet Research, 14* (809), 1-8.

Naughton, F., Prevost, A.T., Gilbert, H., & Sutton, S. (2012). Randomized controlled trial evaluation of a tailored leaflet and SMS text message self-help intervention for pregnant smokers (MiQuit). *Nicotine & Tobacco Research, 14* (5), 569-577.

Rodgers, A., Corbett, T., Bramley, D., Riddell, T., Wills, M., Lin, R.B., & Jones, M. (2005). Do u smoke after txt? Results of a randomised trial of smoking cessation using mobile phone text messaging. *Tobacco Control, 14* (4), 255-261.

Ybarra, M., Korchmaros, J., Bosi, A.T.B., & Emri, S. (2012). A text messaging-based smoking cessation program for adult smokers: Randomized controlled trial. *Journal of Medical Internet Research, 14* (6), e172.

Quantum Opportunities Program

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

Program Description: The Quantum Opportunities Program provides disadvantaged high school students education, service, and development activities, as well as financial incentives (stipends) for youths' continuing participation. Mentoring is one component of the services provided. The program begins in ninth grade and continues through students' high school graduation.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$24,874	Benefit to cost ratio	$1.64
Taxpayers	$17,932	Benefits minus costs	$16,370
Other (1)	$11,509	Probability of a positive net present value	63 %
Other (2)	($11,513)		
Total	$42,802		
Costs	($26,432)		
Benefits minus cost	$16,370		

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	$56	$874	$23	$952
Labor market earnings (hs grad)	$26,181	$11,167	$12,938	$0	$50,287
Public assistance	($1,051)	$3,331	$0	$0	$2,281
Health care (educational attainment)	($418)	$3,270	($2,418)	$1,633	$2,067
Subtotals	$24,713	$17,824	$11,394	$1,656	$55,587
From secondary participant					
Crime	$0	$18	$51	$9	$77
Labor market earnings (hs grad)	$155	$66	$77	$0	$299
Child abuse and neglect	$8	$3	$0	$1	$12
Out-of-home placement	$0	$1	$0	$0	$1
K-12 grade repetition	$0	$3	$0	$1	$4
Health care (educational attainment)	($2)	$18	($14)	$9	$12
Subtotals	$161	$108	$114	$21	$405
Adjustment for deadweight cost of program	$0	$0	$0	($13,190)	($13,190)
Totals	$24,874	$17,932	$11,509	($11,513)	$42,802

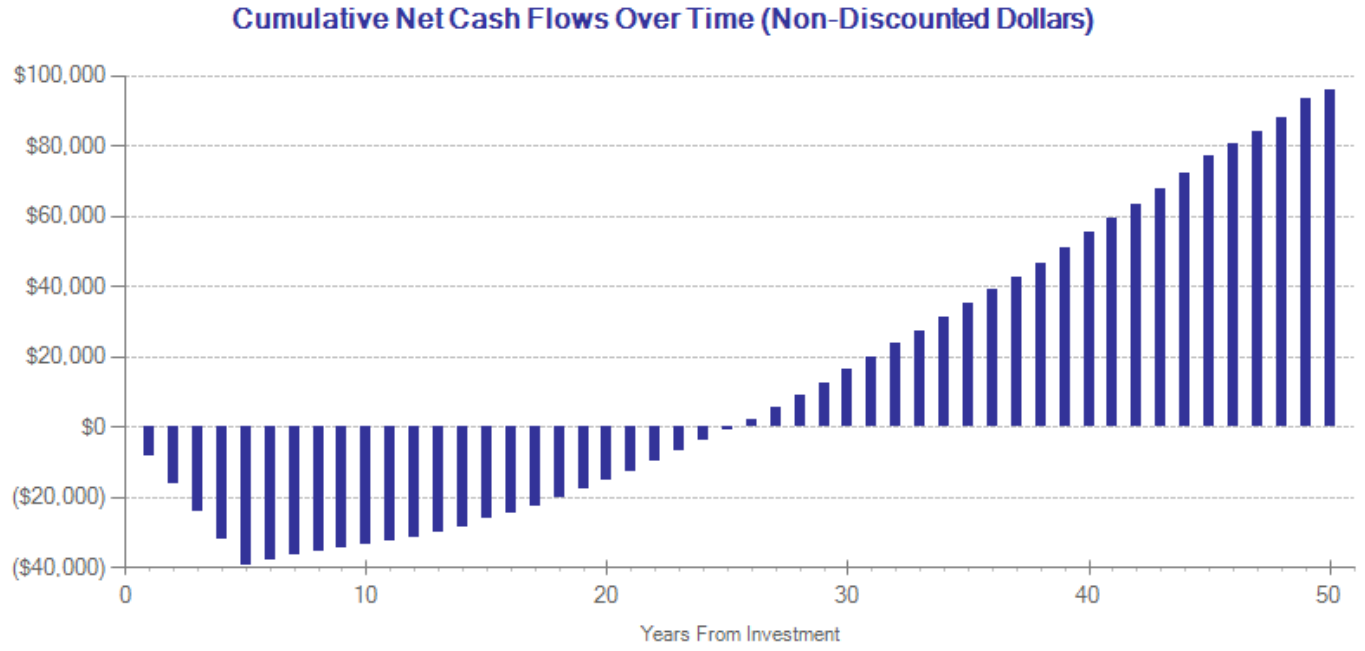
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$5,000	5	2006	Present value of net program costs (in 2013 dollars)	($26,432)
Comparison costs	$0	1	2006	Uncertainty (+ or - %)	30 %

Average cost per youth is $25,000 for five years. We put a 30% uncertainty estimate around this figure because the average costs vary widely by site. Maxfield, M., Schirm, A., & Rodriguez-Planas, N. (2003). The Quantum Opportunity Program demonstration: Implementation and short-term impacts (Document No. PR03-18). Princeton, NJ: Mathematica Policy Research, p. 12.

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
High school graduation	Primary	3	724	0.324	0.022	0.299	0.141	18	0.299	0.141	18
Crime	Primary	2	636	-0.337	0.434	-0.255	0.431	20	0.376	0.610	24
Teen births under age 18	Primary	2	668	-0.137	0.561	-0.138	0.242	18	-0.138	0.242	18
Public assistance	Primary	3	724	-0.112	0.539	-0.112	0.182	24	-0.112	0.182	34
Teen births (second generation)	Secondary	2	668	-0.137	0.561	-0.138	0.242	18	-0.138	0.242	18

Citations Used in the Meta-Analysis

Hahn, A., Leavitt, T., & Aaron, P. (1994). *Evaluation of the Quantum Opportunities Program (QOP): Did the program work? A report on the post secondary outcomes and cost effectiveness of the QOP program (1989-1993).* Waltham, MA: Brandeis University, Center for Human Resources.

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Maxfield, M., Schirm, A., & Rodriguez-Planas, N. (2003). *The Quantum Opportunity Program demonstration: Implementation and short-term impacts* (Document No. PR03-18). Princeton, NJ: Mathematica Policy Research.

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Mentoring for students: community-based (taxpayer costs only)

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 for (in no particular order) 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		Summary statistics	
Participants	$6,930	Benefit to cost ratio	$9.24
Taxpayers	$3,493	Benefits minus costs	$10,364
Other (1)	$1,587	Probability of a positive net present value	67 %
Other (2)	($383)		
Total	$11,626		
Costs	($1,262)		
Benefits minus cost	$10,364		

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	($401)	($1,244)	($201)	($1,846)
Labor market earnings (hs grad)	$7,042	$3,003	$3,486	$0	$13,531
Property loss (alcohol abuse/dependence)	$2	$0	$3	$0	$5
Health care (educational attainment)	($114)	$890	($658)	$449	$567
Adjustment for deadweight cost of program	$0	$0	$0	($632)	($632)
Totals	$6,930	$3,493	$1,587	($383)	$11,626

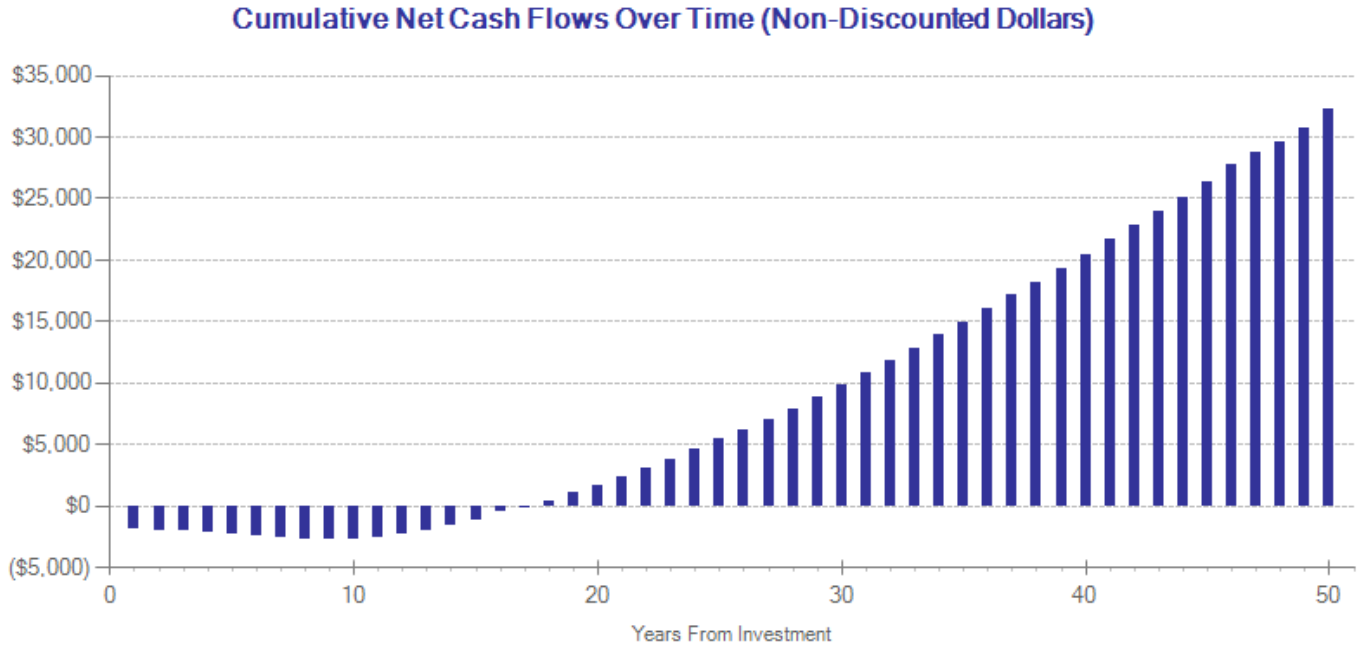
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	$1,088	1	2005	Present value of net program costs (in 2013 dollars)	($1,262)
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. Cost estimates exclude volunteer time and 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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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.

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

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		Summary statistics	
Participants	$6,946	Benefit to cost ratio	$3.36
Taxpayers	$3,513	Benefits minus costs	$7,501
Other (1)	$1,587	Probability of a positive net present value	60 %
Other (2)	($1,353)		
Total	$10,694		
Costs	($3,193)		
Benefits minus cost	$7,501		

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

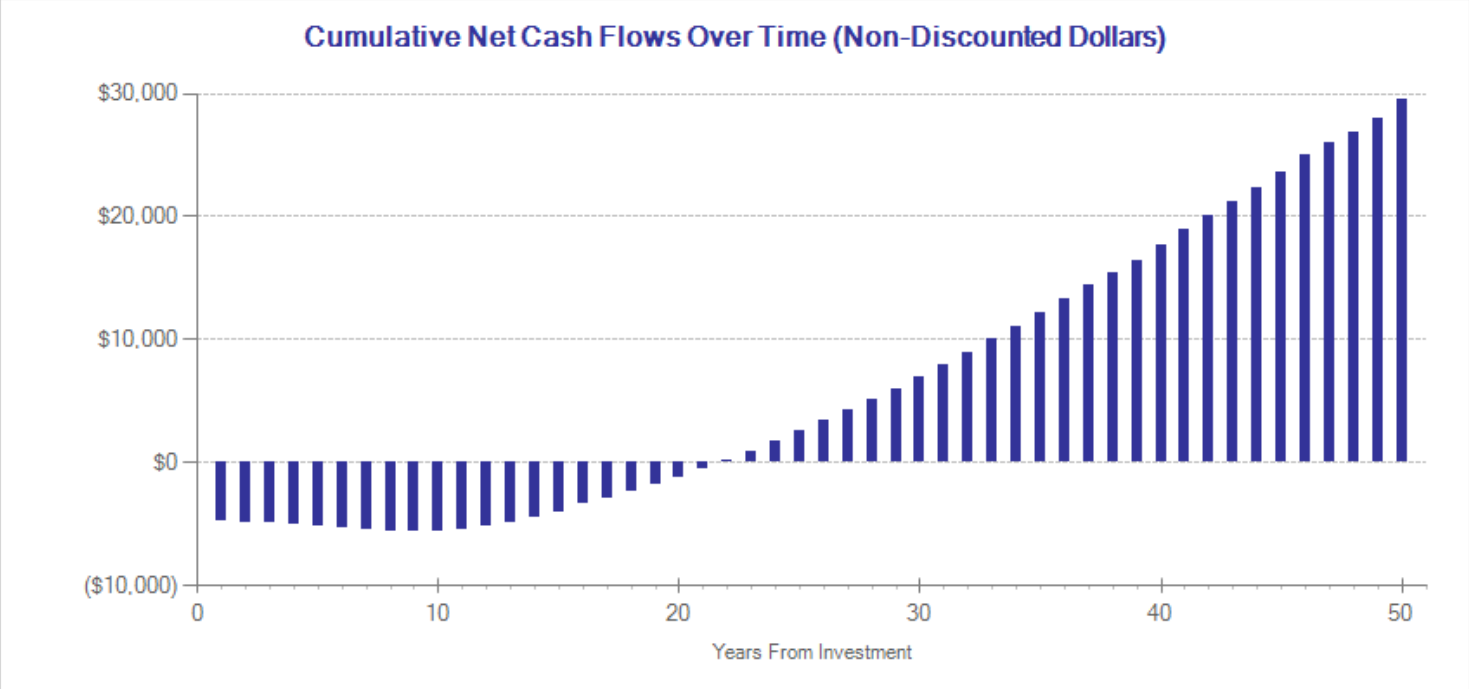
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

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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.

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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		Summary statistics	
Participants	$1,994	Benefit to cost ratio	$8.55
Taxpayers	$1,049	Benefits minus costs	$3,761
Other (1)	$1,364	Probability of a positive net present value	97 %
Other (2)	($147)		
Total	$4,261		
Costs	($499)		
Benefits minus cost	$3,761		

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

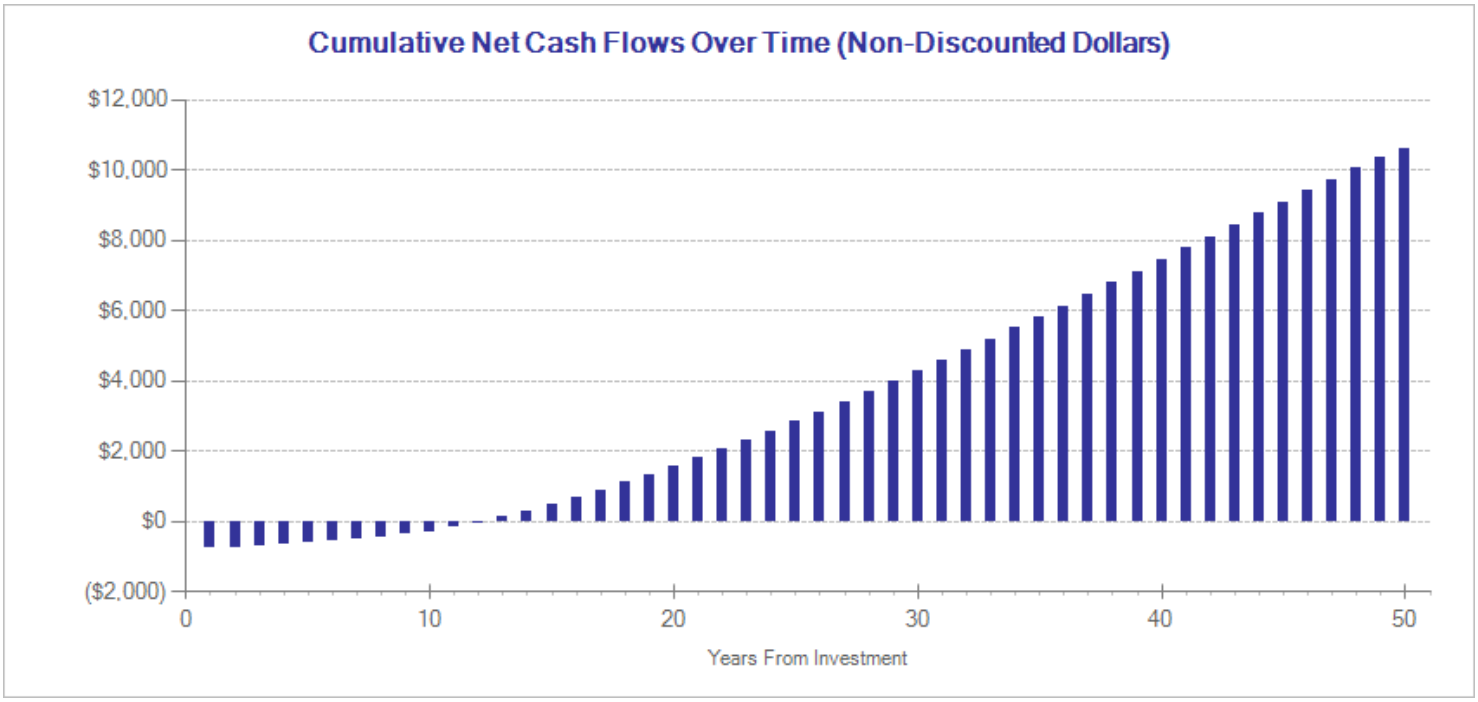
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

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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		Summary statistics	
Participants	$691	Benefit to cost ratio	$3.25
Taxpayers	$561	Benefits minus costs	$1,253
Other (1)	$726	Probability of a positive net present value	85 %
Other (2)	($151)		
Total	$1,826		
Costs	($573)		
Benefits minus cost	$1,253		

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

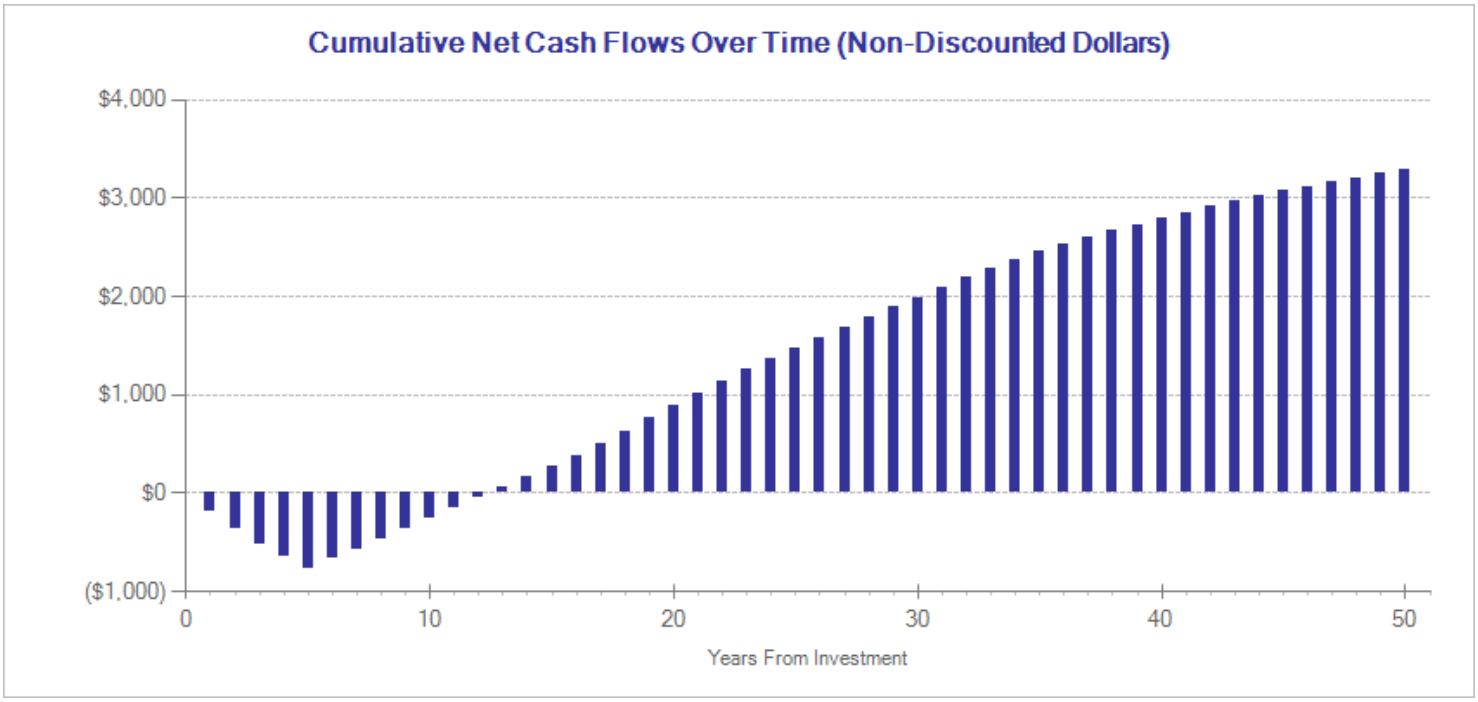
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$103	5	2004	Present value of net program costs (in 2013 dollars)	($573)
Comparison costs	$0	1	2004	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		Summary statistics	
Participants	$357	Benefit to cost ratio	$3.74
Taxpayers	$187	Benefits minus costs	$507
Other (1)	$222	Probability of a positive net present value	73 %
Other (2)	($74)		
Total	$692		
Costs	($185)		
Benefits minus cost	$507		

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

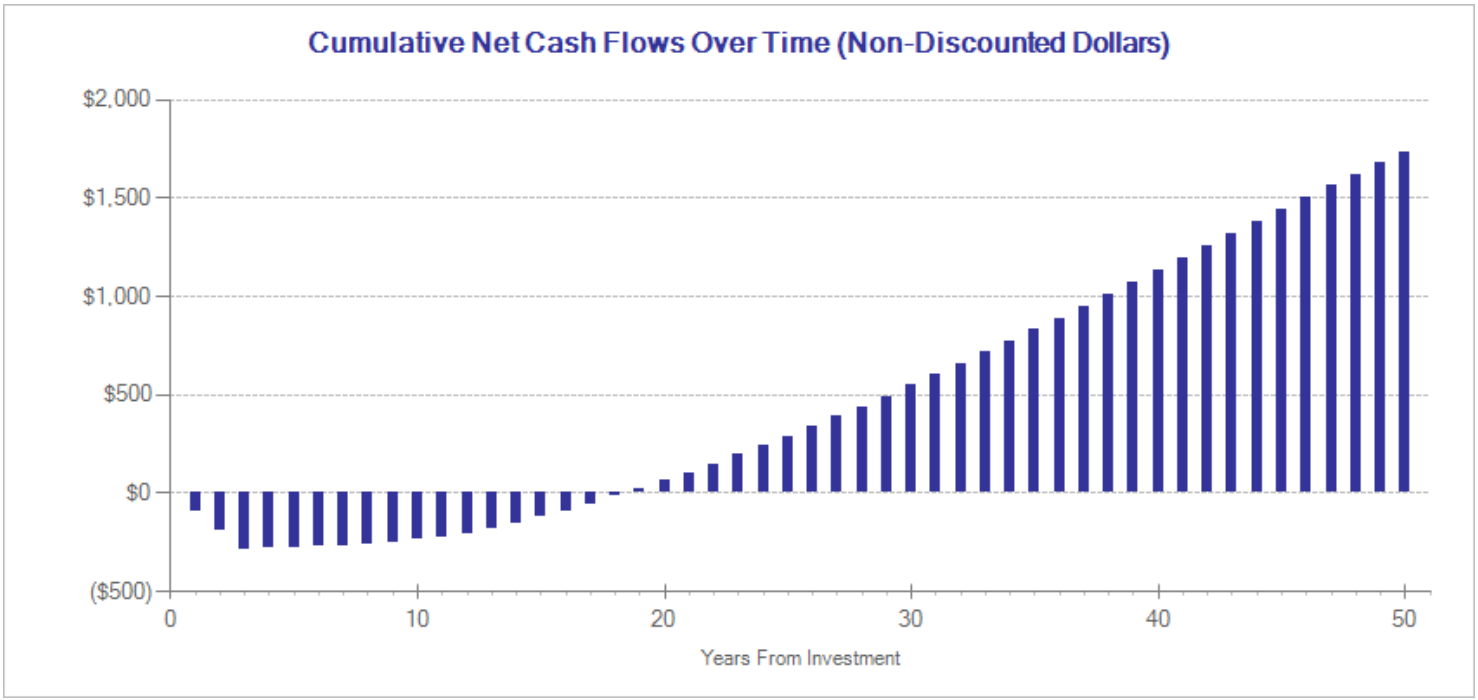
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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

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Children's Aid Society--Carrera

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

Program Description: Children's Aid Society – Carrera Project provides after-school activities five days a week for teens 13 and older. Program activities include Job Club (students receive stipends and employment experience), academic assistance (available every day), classes in family life and sexuality, an arts component, and individual sports one could continue throughout life. In addition, the program provides mental health care, medical care, and full dental care.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$6,906	Benefit to cost ratio	$0.52
Taxpayers	$4,059	Benefits minus costs	($6,909)
Other (1)	$3,337	Probability of a positive net present value	38 %
Other (2)	($6,736)		
Total	$7,565		
Costs	($14,474)		
Benefits minus cost	($6,909)		

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	$166	$522	$81	$770
Labor market earnings (hs grad)	$6,948	$2,964	$3,426	$0	$13,338
Public assistance	($1)	$2	$0	$0	$1
Health care (educational attainment)	($113)	$882	($653)	$441	$557
Subtotals	$6,835	$4,014	$3,295	$523	$14,666
From secondary participant					
Crime	$0	$5	$14	$3	$21
Labor market earnings (hs grad)	$69	$29	$34	$0	$132
Child abuse and neglect	$3	$1	$0	$1	$5
Out-of-home placement	$0	$0	$0	$0	$0
K-12 grade repetition	$0	$1	$0	$1	$2
Health care (educational attainment)	($1)	$8	($6)	$4	$5
Subtotals	$71	$45	$42	$8	$166
Adjustment for deadweight cost of program	$0	$0	$0	($7,267)	($7,267)
Totals	$6,906	$4,059	$3,337	($6,736)	$7,565

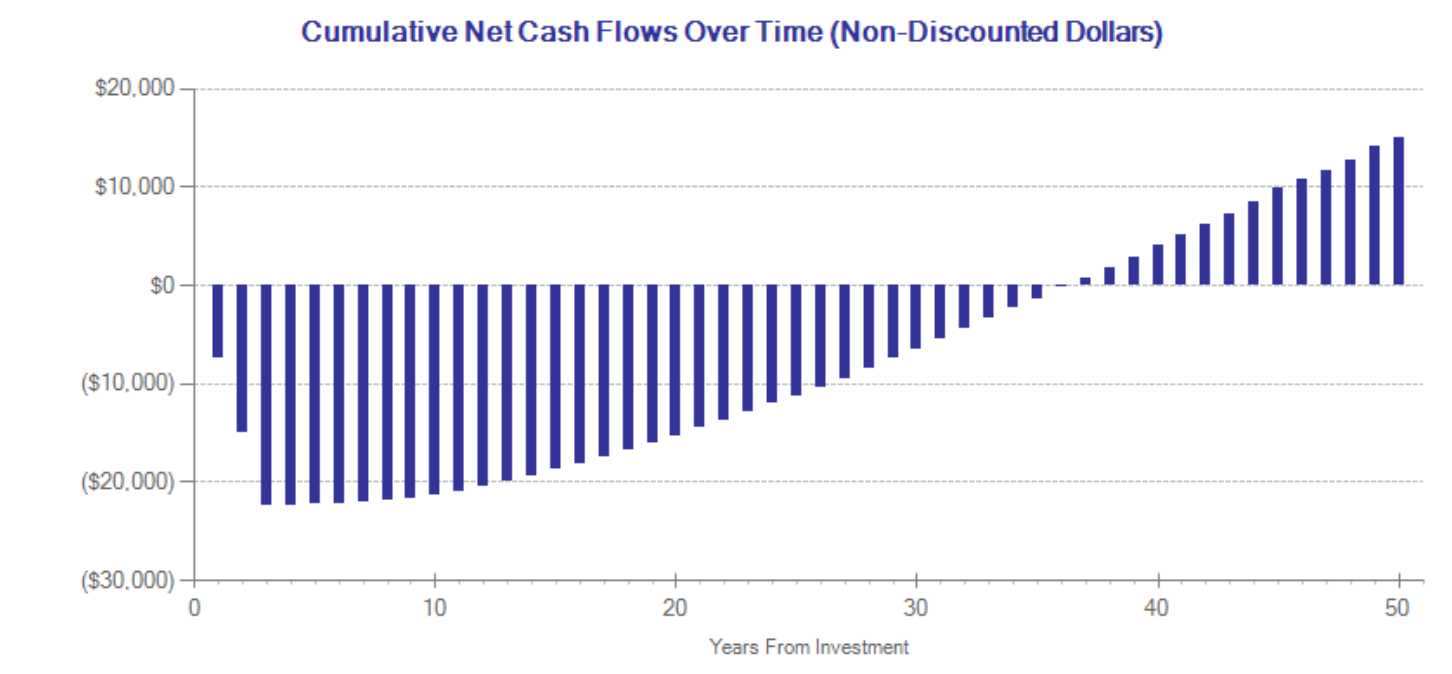
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$4,000	3	2002	Present value of net program costs (in 2013 dollars)	($14,474)
Comparison costs	$0	1	2002	Uncertainty (+ or - %)	10 %

Philliber S et al. Preventing Pregnancy and Improving Health Care Access Among Teenagers: An Evaluation of the Children's Aid Society-Carrera Program, 2002, Perspectives on Sexual and Reproductive Health, 34(5) page 251.

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
High school graduation	Primary	1	143	0.078	0.728	0.078	0.225	18	0.078	0.225	18
Crime	Primary	1	485	-0.035	0.867	-0.035	0.207	17	-0.035	0.207	27
Initiation of sexual activity	Primary	1	242	-0.227	0.287	-0.227	0.213	17	-0.227	0.213	18
Teen pregnancy (under age 18)	Primary	1	242	-0.314	0.141	-0.314	0.213	18	-0.314	0.213	18
Alcohol use in high school	Primary	1	485	-0.121	0.552	-0.121	0.204	17	-0.121	0.204	18
Teen births under age 18	Primary	1	242	-0.055	0.797	-0.055	0.213	18	-0.055	0.213	18
Teen births (second generation)	Secondary	1	242	-0.055	0.797	-0.055	0.213	18	-0.055	0.213	18

Citations Used in the Meta-Analysis

Philliber, S., Kaye, J., & Herrling, S. (2001). *The national evaluation of the Children's Aid Society Carrera-Model program to prevent teen pregnancy.* Accord, NY: Philliber Research Associates.

Philliber, S., Kaye, J. W., Herrling, S., & West, E. (2002). Preventing pregnancy and improving health care access among teenagers: An evaluation of the Children's Aid Society-Carrera program. *Perspectives on Sexual and Reproductive Health, 34*(5), 244-251.

CASASTART

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

Program Description: Formerly known as Children at Risk, CASASTART targets youth aged 11 to 13 in high-risk neighborhoods. Using case management, after-school activities, and law enforcement, the program attempts to decrease individual, family, and community risk factors while promoting positive behavior such as school performance and prosocial activities.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$523	Benefit to cost ratio	($0.54)
Taxpayers	$212	Benefits minus costs	($10,679)
Other (1)	($1,013)	Probability of a positive net present value	12 %
Other (2)	($3,464)		
Total	($3,742)		
Costs	($6,937)		
Benefits minus cost	($10,679)		

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	($293)	($996)	($149)	($1,438)
Labor market earnings (hs grad)	($629)	($268)	($312)	$0	($1,209)
K-12 grade repetition	$0	$146	$0	$73	$219
Labor market earnings (alcohol abuse/dependence)	$1,096	$467	$0	$1	$1,564
Property loss (alcohol abuse/dependence)	$2	$0	$3	$0	$5
Health care (illicit drug abuse/dependence)	$43	$251	$225	$126	$645
Health care (educational attainment)	$12	($92)	$67	($45)	($58)
Adjustment for deadweight cost of program	$0	$0	$0	($3,469)	($3,469)
Totals	$523	$212	($1,013)	($3,464)	($3,742)

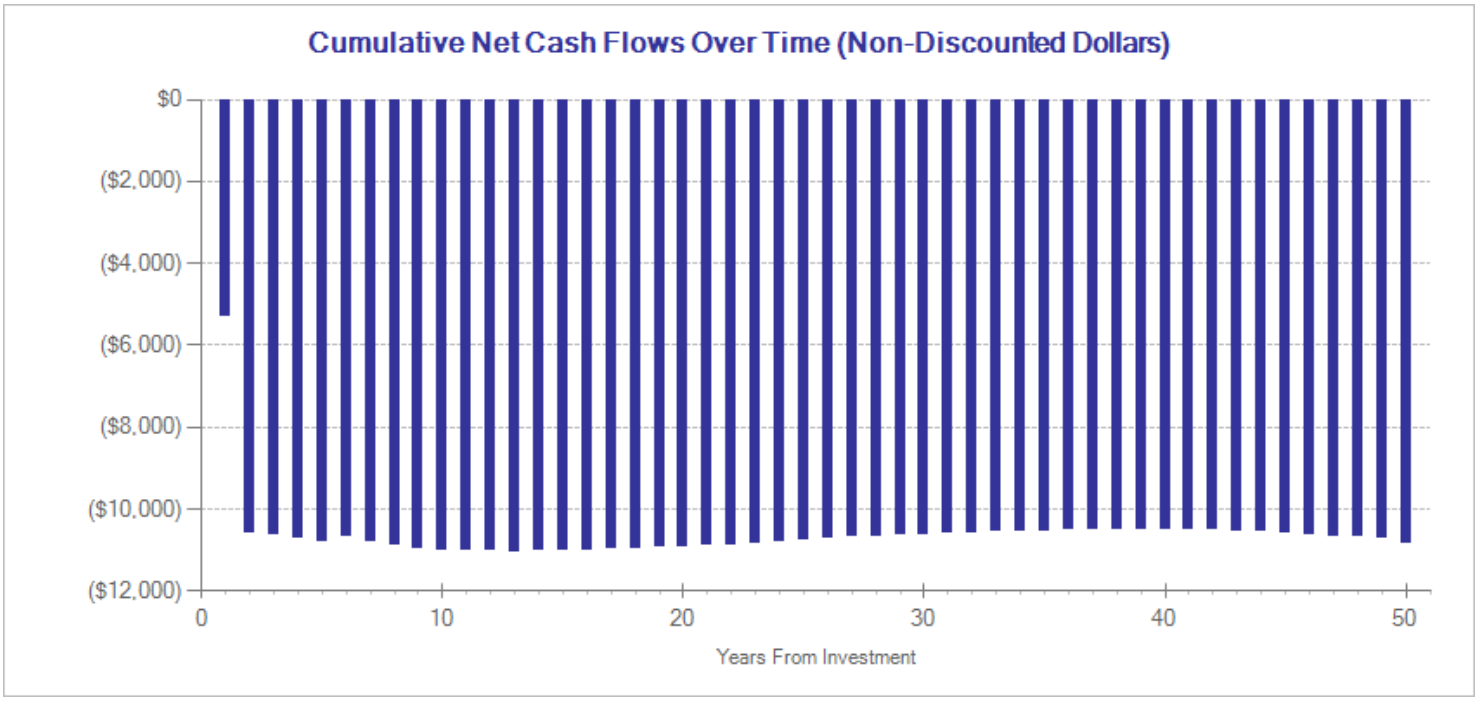
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$2,825	2	2002	Present value of net program costs (in 2013 dollars)	($6,937)
Comparison costs	$0	2	2002	Uncertainty (+ or - %)	10 %

$2,825 per year for two years (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
Illicit drug use before end of middle school	Primary	1	264	-0.295	0.183	-0.295	0.222	14	-0.295	0.222	17
Alcohol use before end of middle school	Primary	1	144	-0.141	0.502	-0.141	0.210	14	-0.141	0.210	17
Illicit drug use	Primary	2	408	-0.053	0.803	-0.053	0.213	14	-0.053	0.213	24
Crime	Primary	2	408	0.040	0.841	0.040	0.199	14	0.040	0.199	24
K-12 grade repetition	Primary	1	264	-0.175	0.310	-0.175	0.172	14	-0.175	0.172	17
Truancy	Primary	1	144	-0.384	0.092	0.384	0.228	14	0.384	0.228	17

Citations Used in the Meta-Analysis

Harrell, A., Cavanagh, S., & Sridharan, S. (1999). *Evaluation of the Children At Risk Program: Results 1 year after the end of the program (Research in Brief).* Washington, DC: National Institute of Justice. Retrieved from ERIC database. (ED438341)

Mihalic, S., Huizinga, D., Ladika, A., Knight, K., & Dyer, C. (2011). *Bibliography: CASASTART final report* (Award Number 58328). Princeton, NJ: The Robert Wood Johnson Foundation.

Fast Track prevention program

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

Program Description: This is a comprehensive prevention program, delivered over the course of 10 years, that seeks to reduce multiple risk factors in children's lives (e.g., school, family). The program consists of various developmentally appropriate interventions at different ages, with the most intensive intervention taking place at younger ages.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$1,156	Benefit to cost ratio	($0.41)
Taxpayers	$1,273	Benefits minus costs	($84,412)
Other (1)	$2,920	Probability of a positive net present value	0 %
Other (2)	($29,749)		
Total	($24,400)		
Costs	($60,013)		
Benefits minus cost	($84,412)		

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	$735	$2,292	$373	$3,400
Labor market earnings (hs grad)	$1,140	$486	$565	$0	$2,191
K-12 grade repetition	$0	$1	$0	$1	$2
Health care (ADHD)	$16	$51	$63	$25	$155
Adjustment for deadweight cost of program	$0	$0	$0	($30,148)	($30,148)
Totals	$1,156	$1,273	$2,920	($29,749)	($24,400)

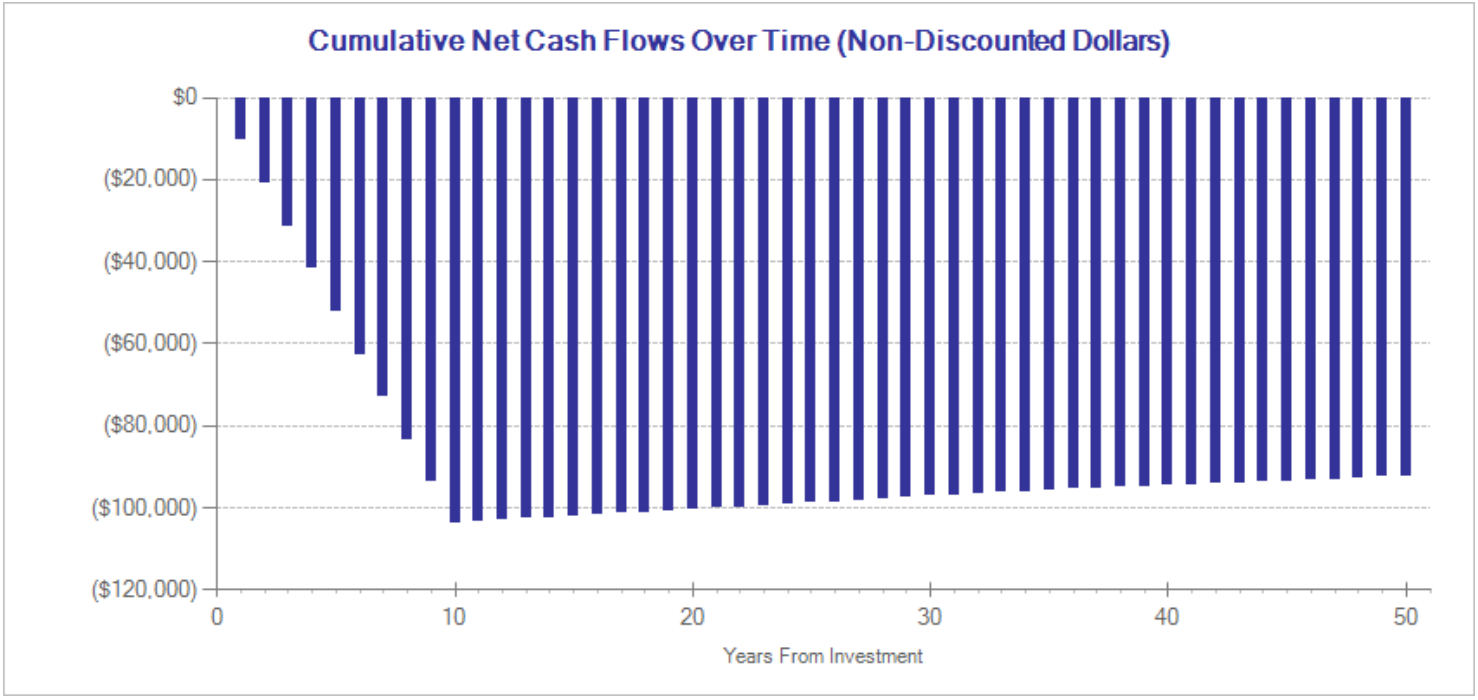
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$5,828	10	2004	Present value of net program costs (in 2013 dollars)	($60,013)
Comparison costs	$0	10	2004	Uncertainty (+ or - %)	10 %

Costs derived from estimate reported in Foster, E.M., Jones, D.E., & the Conduct Problems Prevention Research Group (2006). Can a costly intervention be cost-effective? An analysis of violence prevention. Archives of General Psychiatry, 63(11), 1284-1291.

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
Attention deficit hyperactivity disorder symptoms	Primary	1	445	-0.151	0.440	-0.151	0.195	15	-0.018	0.136	18
Disruptive behavior disorder symptoms	Primary	1	445	-0.198	0.431	-0.198	0.251	15	-0.028	0.162	18
Crime	Primary	1	445	-0.173	0.122	-0.173	0.112	15	-0.099	0.149	18
Hospitalization (general)	Primary	1	445	-0.177	0.234	-0.177	0.149	19	-0.177	0.149	29
Hospitalization (psychiatric)	Primary	1	445	0.006	0.983	0.006	0.284	19	0.006	0.284	29

Citations Used in the Meta-Analysis

Conduct Problems Prevention Research Group. (2007). Fast track randomized controlled trial to prevent externalizing psychiatric disorders: Findings from grades 3 to 9. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(10), 1250-1262.

Conduct Problems Prevention Research Group. (2010). Fast Track intervention effects on youth arrests and delinquency. *Journal of Experimental Criminology, 6*(2), 131-157.

Conduct Problems Prevention Research Group. (2011). The effects of the Fast Track preventive intervention on the development of conduct disorder across childhood. *Child Development, 82*(1), 331-345.

Jones, D., Godwin, J., Dodge, K. A., Bierman, K. L., Coie, J. D., Greenberg, M. T., . . . Pinderhughes, E. E. (2010). Impact of the fast track prevention program on health services use by conduct-problem youth. *Pediatrics, 125*(1), e130-e136.

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		Summary statistics	
Participants	$3,942	Benefit to cost ratio	$158.44
Taxpayers	$2,017	Benefits minus costs	$33,225
Other (1)	$316	Probability of a positive net present value	98 %
Other (2)	$27,161		
Total	$33,436		
Costs	($211)		
Benefits minus cost	$33,225		

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

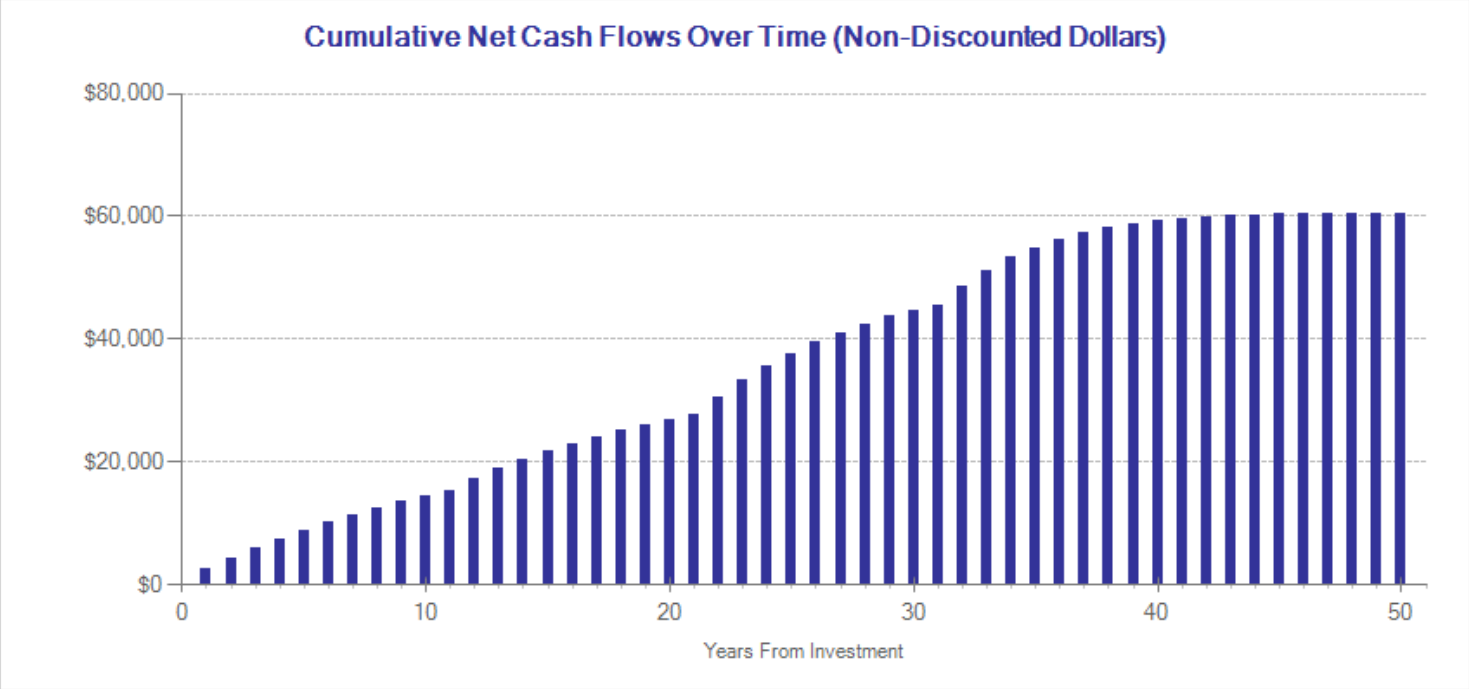
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$214	1	2014	Present value of net program costs (in 2013 dollars)	($211)
Comparison costs	$0	1	2014	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.

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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.

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		Summary statistics	
Participants	$2,855	Benefit to cost ratio	$75.68
Taxpayers	$1,390	Benefits minus costs	$9,574
Other (1)	$162	Probability of a positive net present value	100 %
Other (2)	$5,295		
Total	$9,702		
Costs	($128)		
Benefits minus cost	$9,574		

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

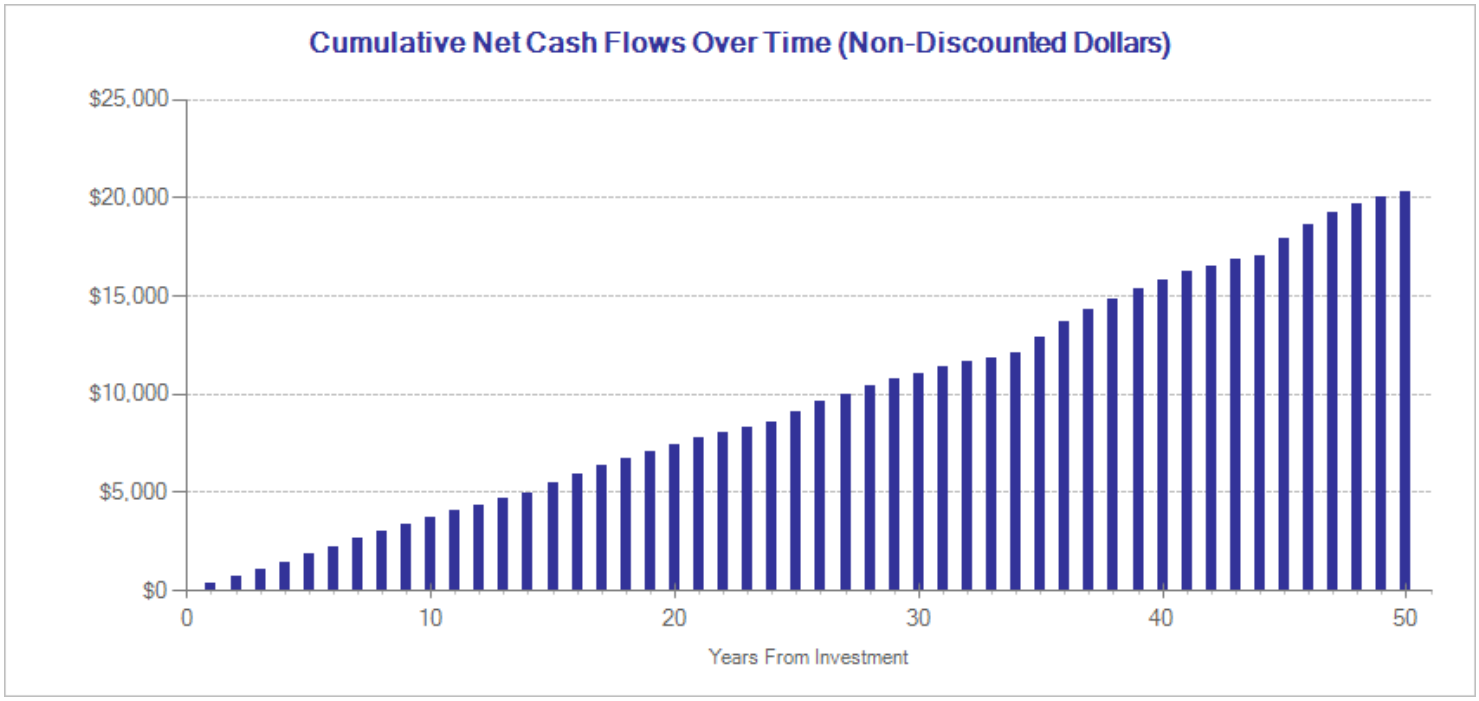
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “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	Summary statistics	
Program costs	$214	1	2014	Present value of net program costs (in 2013 dollars)	($128)
Comparison costs	$84	1	2014	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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Smith, P.M., Cameron, R., McDonald, P.W., Kawash, B., Madill, C., & Brown, K.S. (2004). Telephone counseling for population-based smoking cessation. *American Journal of Health Behavior, 28*(3), 231-241.

Zhu, S.H., Stretch, V., Balabanis M., Rosbrook, B., Sadler, G., & Pierce, J.P. (1996). Telephone counseling for smoking cessation: Effects of single-session and multiple-session interventions. *Journal of Consulting and Clinical Psychology, 64*(1), 202-211.

Zhu, S.H., Cummins, S.E., Wong, S., Gamst, A.C., Tedeschi, G.J., & Reyes-Nocon, J. (2012). The effects of a multilingual telephone quitline for Asian smokers: a randomized controlled trial. *Journal of the National Cancer Institute, 104,*(4), 299-310.

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		Summary statistics	
Participants	$1,535	Benefit to cost ratio	$125.82
Taxpayers	$813	Benefits minus costs	$3,371
Other (1)	$980	Probability of a positive net present value	99 %
Other (2)	$70		
Total	$3,398		
Costs	($27)		
Benefits minus cost	$3,371		

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

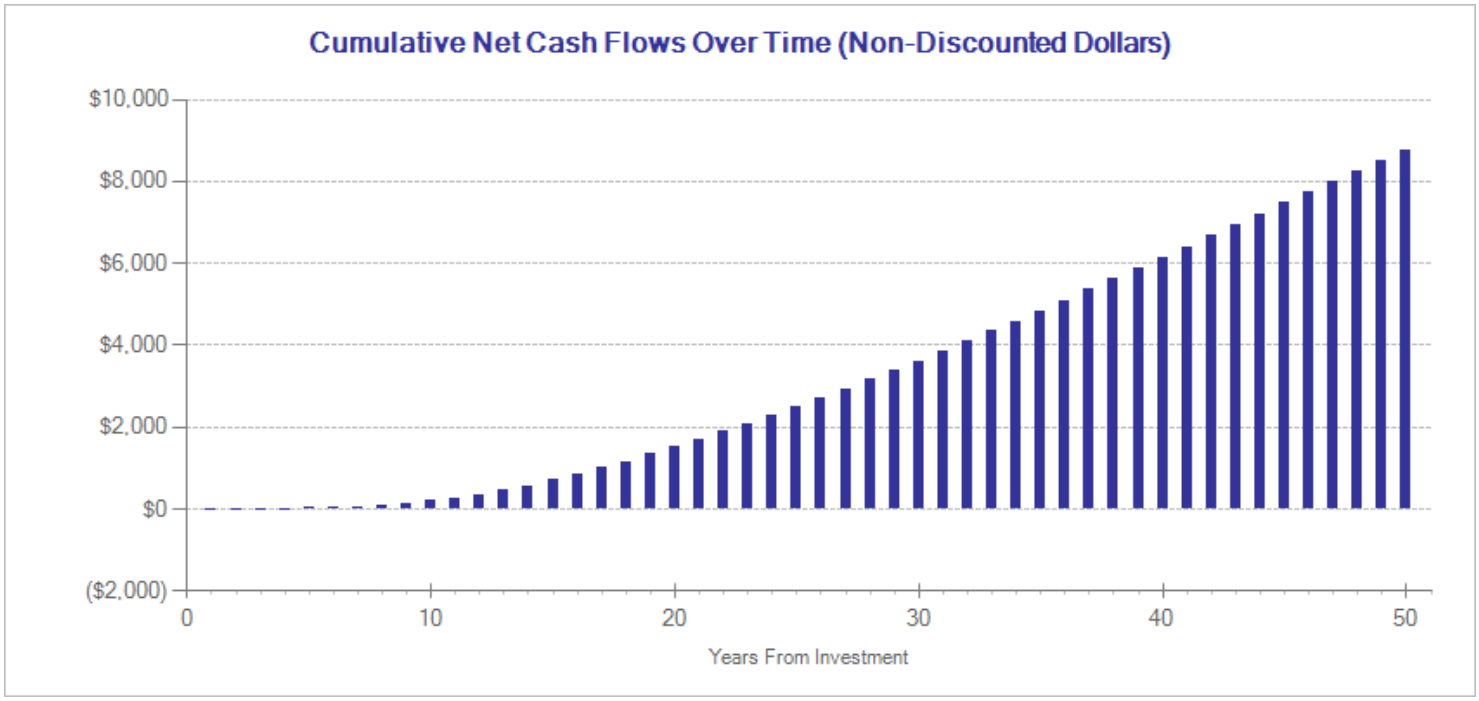
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$27	1	2012	Present value of net program costs (in 2013 dollars)	($27)
Comparison costs	$0	1	2012	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

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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		Summary statistics	
Participants	$1,325	Benefit to cost ratio	$399.16
Taxpayers	$697	Benefits minus costs	$2,288
Other (1)	$125	Probability of a positive net present value	100 %
Other (2)	$147		
Total	$2,293		
Costs	($6)		
Benefits minus cost	$2,288		

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

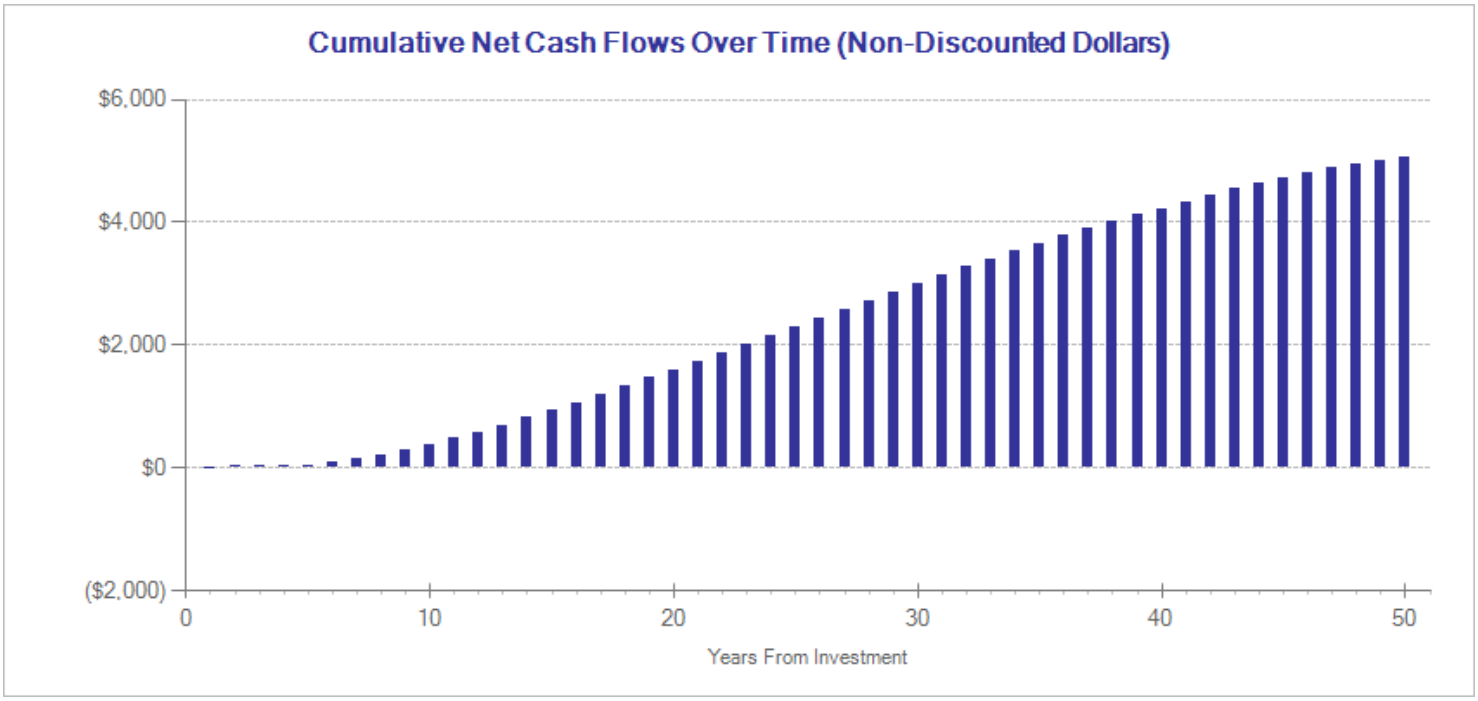
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$5	1	2001	Present value of net program costs (in 2013 dollars)	($6)
Comparison costs	$0	1	2001	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		Summary statistics	
Participants	$1,083	Benefit to cost ratio	$55.38
Taxpayers	$530	Benefits minus costs	$1,865
Other (1)	$64	Probability of a positive net present value	89 %
Other (2)	$223		
Total	$1,899		
Costs	($35)		
Benefits minus cost	$1,865		

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

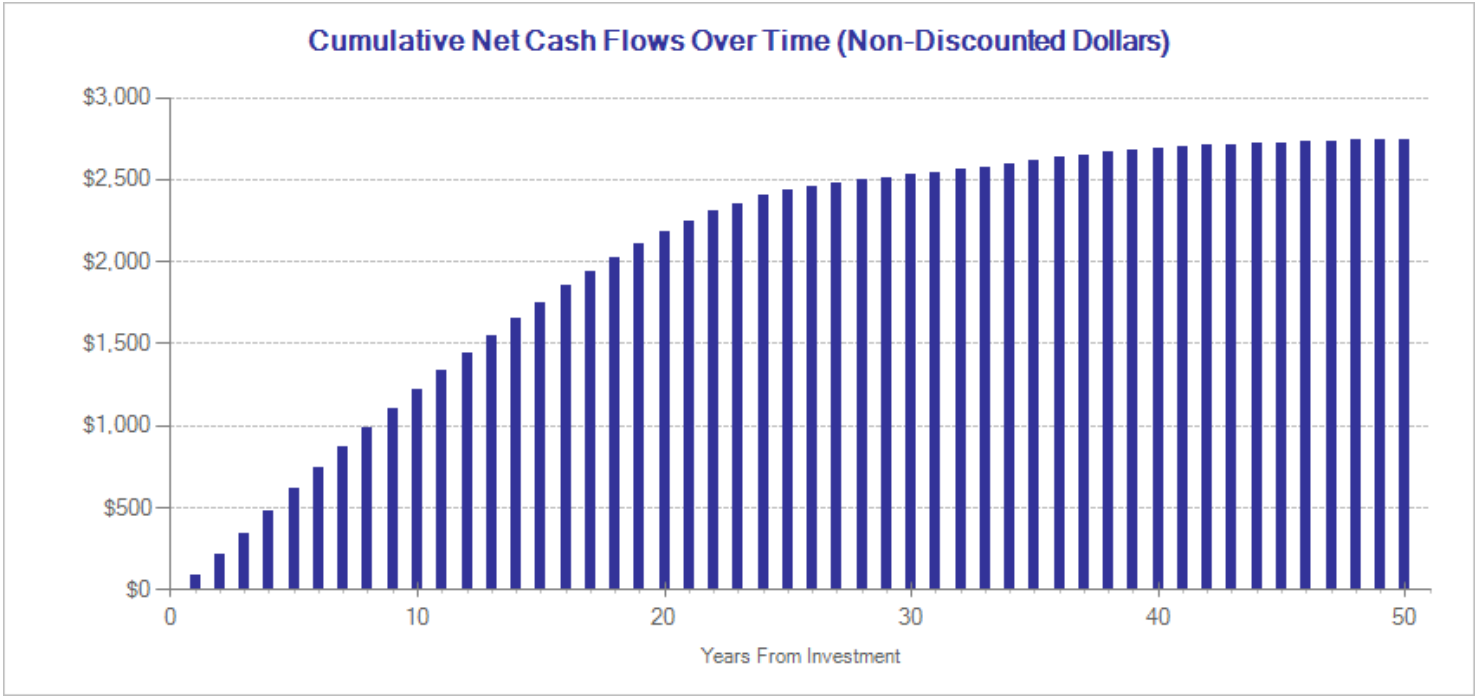
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	Summary statistics	
Program costs	$34	1	2012	Present value of net program costs (in 2013 dollars)	($35)
Comparison costs	$0	1	2012	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
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.

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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.

Triple P Positive Parenting Program (System)

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

Program Description: Triple P – Positive Parenting Program (all levels) is a universal prevention program that aims to increase the skills and confidence of parents in order to prevent the development of serious behavioral and emotional problems in their children. Triple P has five levels of intensity. The base level is a media campaign that aims to increase awareness of parenting resources and inform parents about solutions to common behavioral problems. Levels two and three are primary health care interventions for children with mild behavioral difficulties, whereas levels four and five are more intensive individual- or class-based parenting programs for families of children with more challenging behavior problems. The evaluation in this study was a population-based trial that provided all levels of the program.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	$249	Benefit to cost ratio	$3.22
Taxpayers	$154	Benefits minus costs	$322
Other (1)	$85	Probability of a positive net present value	99 %
Other (2)	($19)		
Total	$469		
Costs	($147)		
Benefits minus cost	$322		

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	$10	$29	$5	$44
Labor market earnings (hs grad)	$108	$46	$53	$0	$208
Child abuse and neglect	$139	$6	$0	$3	$149
Out-of-home placement	$0	$85	$0	$43	$128
K-12 special education	$0	$4	$0	$2	$6
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Health care (illicit drug abuse/dependence)	$2	$3	$3	$1	$8
Adjustment for deadweight cost of program	$0	$0	$0	($74)	($74)
Totals	$249	$154	$85	($19)	$469

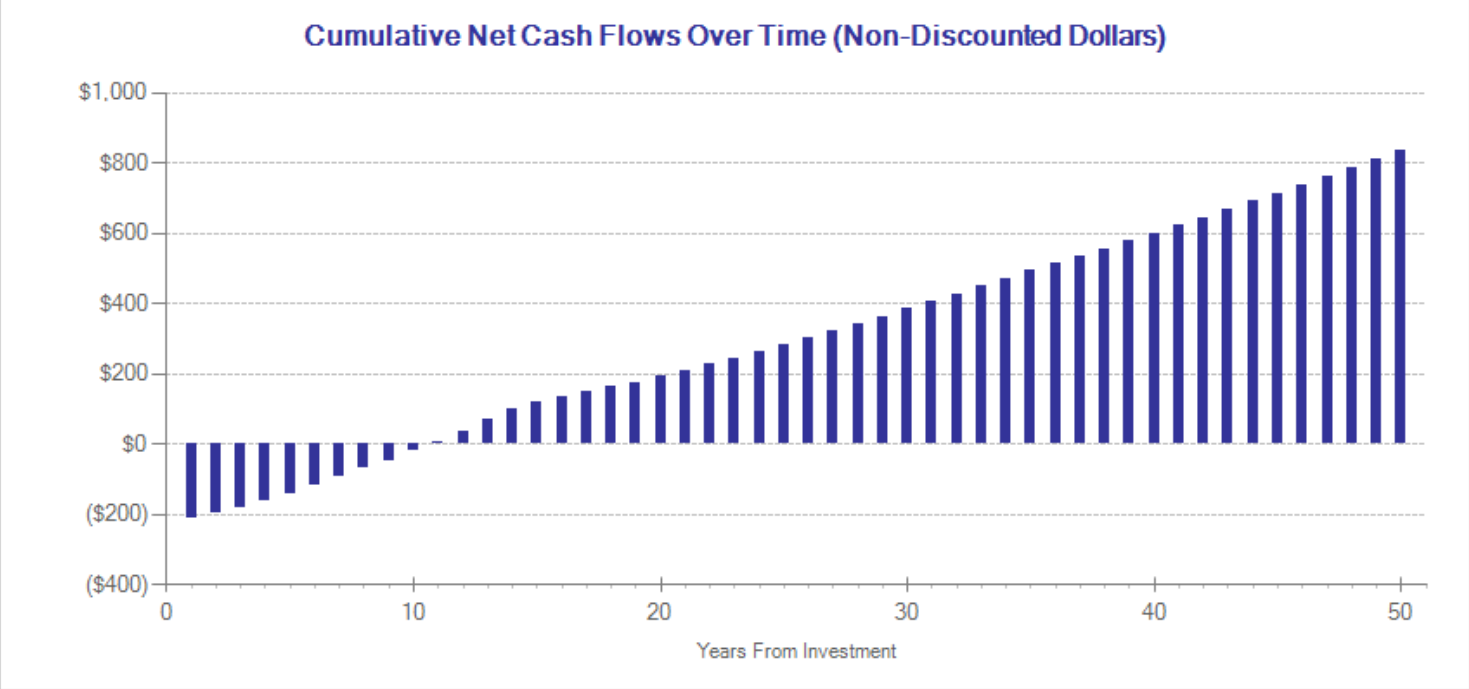
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "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	$137	1	2008	Present value of net program costs (in 2013 dollars)	($147)
Comparison costs	$0	1	2008	Uncertainty (+ or - %)	20 %

Training costs estimated from Foster, E. M., Prinz, R. J., Sanders, M. R., & Shapiro, C. J. (2008). The costs of a public health infrastructure for delivering parenting and family support. Children and Youth Services Review, 30(5), 493-501; parenting program costs estimated by multiplying average Washington cost per family by 10 percent of the population assumed to receive the parenting program, distributed over 100 percent of the population.

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
Child abuse and neglect	Primary	1	95650	-0.138	0.001	-0.050	0.024	6	-0.050	0.024	17
Out-of-home placement	Primary	1	95650	-0.311	0.001	-0.112	0.015	6	-0.112	0.015	17

Citations Used in the Meta-Analysis

Prinz, R. J., Sanders, M. R., Shapiro, C. J., Whitaker, D. J., & Lutzker, J. R. (2009). Population-based prevention of child maltreatment: The U.S. Triple P system population trial. *Prevention Science, 10*(1), 1-12.

School programs for physical activity to prevent obesity

Literature review updated April 2012.

Program Description: Programs in school that aim to increase children's physical activity and reduce sedentary behaviors include increasing knowledge about the benefits of physical activity; incorporating physical activity in the classroom with short periods of movement, exercise, dance, etc., interspersed between academic lessons; or increased time, frequency, and/or intensity of the physical education curriculum. Typically these programs are taught by classroom or physical education teachers who receive brief (< 1 day) training to deliver the intervention. The evaluations usually compare these programs to the standard health education and physical activity curriculum, which also provide opportunities to exercise and contain content on the importance of physical activity.

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
Body mass index (BMI)	Primary	12	3038	-0.068	0.049	-0.056	0.027	12	-0.056	0.027	22

Citations Used in the Meta-Analysis

Donnelly, J. E., Greene, J. L., Gibson, C. A., Smith, B. K., Washburn, R. A., Sullivan, D. K., . . . Williams, S. L. (2009). Physical Activity Across the Curriculum (PAAC): A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. *Preventive Medicine, 49*(4), 336-341.

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Sollerhed, A.-C., & Ejlertsson, G. (2008). Physical benefits of expanded physical education in primary school: findings from a 3-year intervention study in Sweden. *Scandinavian Journal of Medicine & Science in Sports, 18*(1), 102-107.

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School programs for healthy eating & physical activity to prevent obesity

Literature review updated April 2012.

Program Description: Programs that focus on healthy eating and physical activity emphasize the balance between energy consumed and energy expended to stay healthy. These programs emphasize well-balanced meals, avoidance of energy-dense, low-nutrient foods and beverages, and the importance of daily physical activity and decreased sedentary behaviors (TV, computer games, etc.). The programs may also focus on self-awareness (e.g. exercise logs) and behavioral skills. These programs are typically taught by classroom or physical education teachers and compared to the standard health curriculum. In some school-based programs, integrated school-wide strategies to alter the school environment to support healthy eating and physical activity are used; such strategies include improving the nutritional content of cafeteria food or school vending machines, banning advertising of energy-dense products in school space, improving exercise facilities and play equipment, promoting events like “bike to school” days, and changing school policies (e.g. not selling candy for fundraising).

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
Body mass index (BMI)	Primary	20	8522	-0.035	0.368	-0.010	0.027	11	-0.010	0.027	21

Citations Used in the Meta-Analysis

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School programs for healthy eating to prevent obesity

Literature review updated April 2012.

Program Description: School-based programs for healthy eating include those that discourage children from consuming sweetened carbonated drinks and more comprehensive curricula that increase children's knowledge about healthy food choices, including the USDA's recommended food groups for a well-balanced meal: whole grains, lean proteins, and low-fat dairy. Some programs try to build self-monitoring skills such as keeping a food diary or recognizing cues that prompt intake of less healthy foods. In some programs, educational materials are sent to parents; typically, this content is part of the overall health education curriculum and taught by classroom teachers who have received brief training in nutrition guidelines and strategies for healthy eating for children. In the evaluation of these programs they are usually compared to the standard health education curriculum, which may also contain content on healthy eating.

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
Body mass index (BMI)	Primary	3	1922	-0.107	0.002	-0.091	0.034	9	-0.091	0.034	19

Citations Used in the Meta-Analysis

James, J., Thomas, P., & Kerr, D. (2007). Preventing childhood obesity: Two year follow-up results from the Christchurch obesity prevention programme in schools (CHOPPS). *British Medical Journal, 335*(7623), 762-764.

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Muckelbauer, R., Libuda, L., Clausen, K., Reinehr, T., & Kersting, M. (2009). A simple dietary intervention in the school setting decreased incidence of overweight in children. *Obesity Facts, 2*(5), 282-285.

Postponing Sexual Involvement (c)

Literature review updated April 2012.

Program Description: Postponing Sexual Involvement (PSI) is a two-stage program typically offered to 8th and 9th grade students. The program consists of five classes on human sexuality taught by a classroom teacher, followed by five classes on refusal skills taught by trained peer educators (11th- and 12-grade students).

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
Initiation of sexual activity	Primary	5	3381	-0.207	0.091	-0.001	0.038	14	-0.001	0.038	24

Citations Used in the Meta-Analysis

Aarons, S. J., Jenkins, R. R., Raine, T. R., El-Khorazaty, M. N., Woodward, K. M., Williams, R. L., . . . Wingrove, B. K. (2000). Postponing sexual intercourse among urban junior high school students-a randomized controlled evaluation. *Journal of Adolescent Health, 27*(4), 236-247.

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School-based sexual education

Literature review updated April 2012.

Program Description: School-based sex education curricula provide information about and instruct students in skills for sexual abstinence; many programs also provide students information about birth control and ways to protect against sexually transmitted diseases (STD). We did not include programs that focused only on HIV or STD risk reduction because we focused on the prevention of teen pregnancy. We analyzed 14 studies of abstinence-only programs and comprehensive sexual health programs and found no significant differences (p=.65) in effects on teens initiating sexual activity; only comprehensive programs measured pregnancy outcomes. Usually the programs lasted less than 2 months, however, a few were offered over 2 school years. Students were typically middle-school to early high school age and most programs were lead by teachers who received training in the curriculum. An exception was abstinence-only programs, which were usually offered by trained outside facilitators and trained student peer-leaders. Programs evaluated included Draw the Line/Respect the Line (Coyle 2004), Safer Choices (Coyle 2001), Reducing the Risk (Barth 1992), Sexual Health and Relationships (Henderson 2007), Promoting Health Among Teens comprehensive education (Jermmott 2010), Project Taking Charge (Jorgenson 1991), McMasters Teen Program (Mitchell-DiCenso 1997), Randomized Intervention Trial of Pupil Led Sex Education (Stephenson 2008), It's Your Game: Keep It Real (Tortolero 2009), Managing Pressures Before Marriage (Blake 2001), For Keeps (Borawski 2005), Skills and Knowledge for AIDS and Pregnancy Prevention (Kirby 1997), and abstinence education (Treholm 2007).

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
Teen pregnancy (under age 18)	Primary	4	6130	0.011	0.859	-0.005	0.059	17	-0.005	0.059	27
Initiation of sexual activity	Primary	8	8550	-0.099	0.153	-0.073	0.066	15	-0.073	0.066	25

Citations Used in the Meta-Analysis

Barth, R. P., Leland, N., Kirby, D., & Fetro, J. V. (1992). Enhancing social and cognitive skills. In B. C. Miller, J. J. Card, R. L. Paikoff, & J. L. Peterson (Eds.), *Preventing adolescent pregnancy: Model programs and evaluations* (pp. 53-82). Thousand Oaks, CA: Sage.

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School-based service learning

Literature review updated April 2012.

Program Description: School-based service learning programs promote integration of service-learning in the school curriculum and deliver services to the community. Students are involved in community field experiences in nursing homes, senior centers, and child centers, among other locations. This program is coupled with classroom discussions of their experiences to reinforce social and critical skills and help students develop as individuals and as engaged citizens. Health education and/or social studies may be included in the curriculum. Typically, these programs target higher risk student populations.

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
Teen pregnancy (under age 18)	Primary	3	680	-0.228	0.287	-0.228	0.214	16	-0.228	0.214	26

Citations Used in the Meta-Analysis

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Child FIRST

Literature review updated July 2014.

Program Description: Child FIRST (Child and Family Interagency, Resource, Support, and Training), is a home-based parent–child intervention. The intervention targets young children with social-emotional problems and aims to decrease emotional and learning problems, as well as child abuse and neglect. The program provides a two-person team of home visitors (a mental health clinician and a care coordinator) to regularly visit the family in their home, provide therapeutic services, and coordination with other services in the community.

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
Child abuse and neglect	Secondary	1	58	-0.447	0.030	-0.251	0.206	5	-0.251	0.206	15
Internalizing symptoms	Secondary	1	58	-0.244	0.189	-0.137	0.186	3	-0.100	0.150	5
Externalizing behavior symptoms	Secondary	1	58	-0.540	0.004	-0.302	0.188	3	-0.144	0.115	6
Major depressive disorder	Primary	1	58	-0.501	0.008	-0.281	0.188	29	-0.146	0.531	31

Citations Used in the Meta-Analysis

Lowell, D.I., Carter, A.S., Godoy, L., Paulicin, B., & Briggs-Gowan, M.J. (2011). A randomized controlled trial of Child FIRST: A comprehensive home-based intervention translating research into early childhood practice. *Child Development, 82*(1), 193-208.

Teen Outreach Program

Literature review updated April 2012.

Program Description: Teen Outreach Program (TOP) is a volunteer service learning program for high school students, aimed at high risk adolescents, and consisting of supervised community volunteer experience (e.g. in nursing homes, senior centers, child care centers) of between 20 to 40 hours per school year to increase students' social engagement with peers, teachers, and community adults. This is coupled with classroom discussions of the volunteer experience as well as other topics (15 percent or less on sexuality) with trained teachers/facilitators. Trained program staff coordinate the placements of students with community agencies.

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
Teen pregnancy (under age 18)	Primary	2	359	-0.554	0.008	-0.210	0.209	17	-0.210	0.209	27

Citations Used in the Meta-Analysis

Allen, J. P., Philliber, S., Herrling, S., & Kuperminc, G. P. (1997). Preventing teen pregnancy and academic failure: Experimental evaluation of a developmentally based approach. *Child Development, 64*(4), 729-742.

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Adolescent Sibling Pregnancy Prevention

Literature review updated April 2012.

Program Description: Adolescent Sibling Pregnancy Prevention Project was conducted in California to prevent pregnancy among adolescents with a pregnant or parenting teenage sibling, a group identified as high risk of early pregnancy. The intervention is delivered by non-profit social service agencies, school districts, and public health departments to youth 11 to 17 years old. There is no prescribed intervention except for a once-a-month face-to-face meeting with the youth and a case manager; most locations offer a variety of activities.

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
Initiation of sexual activity	Primary	1	607	-0.282	0.001	-0.282	0.058	14	-0.282	0.058	24
Teen pregnancy (under age 18)	Primary	1	731	-0.188	0.001	-0.188	0.052	14	-0.188	0.052	24
Truancy	Primary	1	731	-0.045	0.393	-0.045	0.052	14	-0.045	0.052	24

Citations Used in the Meta-Analysis

East, P., Kiernan, E., & Chavez, G. (2003). An evaluation of California's Adolescent Sibling Pregnancy Prevention Program. *Perspectives on Sexual and Reproductive Health, 35*(2), 62-70.

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.

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Oral health: Community water fluoridation

Literature review updated October 2014.

Program Description: Water contains naturally occurring fluoride at varying levels. Community water fluoridation refers to the addition of a fluoride compound to the public water supply to achieve a total fluoride level of 0.7-1.2 mg/L.

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
Tooth decay	Primary	2	1052	-0.569	0.010	-0.569	0.222	14	n/a	n/a	n/a

Citations Used in the Meta-Analysis

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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

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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

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