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 June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$8,571	Benefit to cost ratio	$23.84
Participants	$14,283	Benefits minus costs	$26,733
Others	$5,039	Chance the program will produce benefits greater than the costs	74 %
Indirect	$11		
Total benefits	$27,904		
Net program cost	($1,171)		
Benefits minus cost	$26,733		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$80	$192	$40	$313
Labor market earnings associated with high school graduation	$18,869	$8,569	$8,677	$0	$36,114
Labor market earnings associated with test scores	($2,639)	($1,198)	($1,170)	$0	($5,007)
Health care associated with educational attainment	($559)	$2,042	($2,232)	$1,018	$269
Costs of higher education	($1,388)	($922)	($428)	($461)	($3,200)
Adjustment for deadweight cost of program	$0	$0	$0	($586)	($586)
Totals	$14,283	$8,571	$5,039	$11	$27,904

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

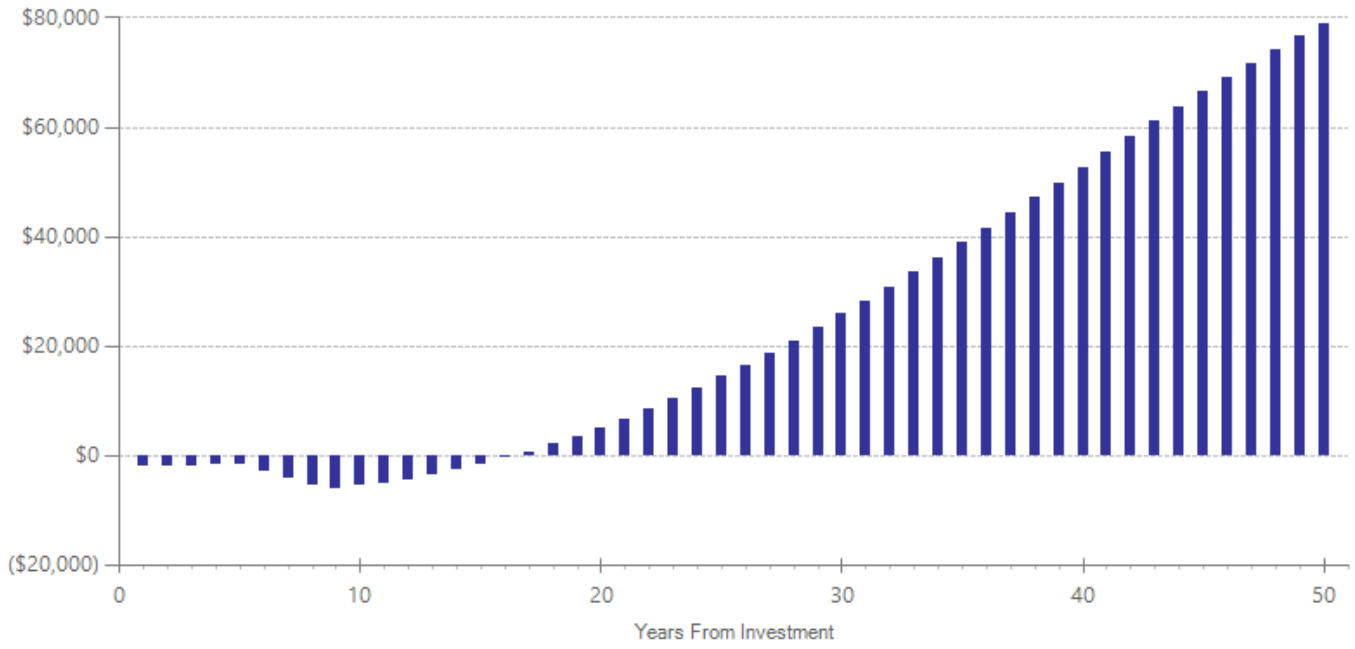
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$987	2005	Present value of net program costs (in 2015 dollars)	($1,171)
Comparison costs	$0	2005	Cost range (+ or -)	10 %

The effects of this program represent one year of mentoring. Per-participant 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	2	1694	-0.013	0.049	14	-0.013	0.049	14	-0.013	0.787
High school graduation	1	66	0.262	0.265	18	0.262	0.265	18	0.689	0.029
Illicit drug use before end of middle school	1	531	0.109	0.145	14	0.109	0.145	14	0.109	0.321
Grade point average	5	2009	0.024	0.032	14	0.024	0.032	14	0.026	0.409
School attendance	4	1771	0.074	0.038	14	0.074	0.038	14	0.121	0.063
Office discipline referrals	2	547	-0.256	0.123	14	-0.256	0.123	14	-0.509	0.137
Test scores	3	3489	-0.034	0.029	14	-0.029	0.032	17	-0.034	0.243

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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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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 June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$8,312
Participants	$13,814
Others	$4,805
Indirect	($324)
Total benefits	$26,607
Net program cost	($1,825)
Benefits minus cost	$24,782

Benefit to cost ratio	$14.58
Benefits minus costs	$24,782
Chance the program will produce benefits greater than the costs	72 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$73	$175	$36	$284
Labor market earnings associated with high school graduation	$18,430	$8,369	$8,436	$0	$35,235
Labor market earnings associated with test scores	($2,719)	($1,235)	($1,206)	$0	($5,159)
Health care associated with educational attainment	($547)	$2,001	($2,184)	$999	$270
Costs of higher education	($1,350)	($897)	($416)	($447)	($3,110)
Adjustment for deadweight cost of program	$0	$0	$0	($912)	($912)
Totals	$13,814	$8,312	$4,805	($324)	$26,607

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

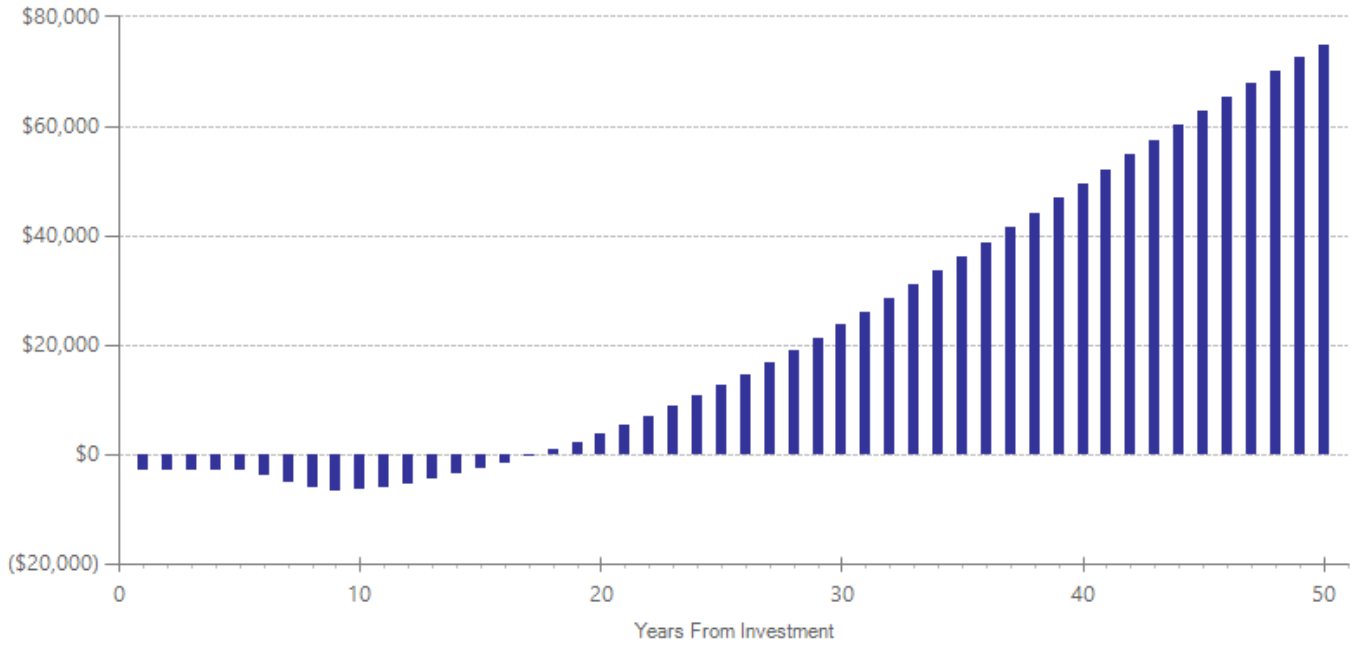
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$1,539	2005	Present value of net program costs (in 2015 dollars)	($1,825)
Comparison costs	$0	2005	Cost range (+ or -)	10 %

The effects of this program represent one year of mentoring. Per-participant 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	2	1694	-0.013	0.049	14	-0.013	0.049	14	-0.013	0.787
High school graduation	1	66	0.262	0.265	18	0.262	0.265	18	0.689	0.029
Illicit drug use before end of middle school	1	531	0.109	0.145	14	0.109	0.145	14	0.109	0.321
Grade point average	5	2009	0.024	0.032	14	0.024	0.032	14	0.026	0.409
School attendance	4	1771	0.074	0.038	14	0.074	0.038	14	0.121	0.063
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Test scores	3	3489	-0.034	0.029	14	-0.029	0.032	17	-0.034	0.243

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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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.

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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.

School-based programs to increase physical activity

Benefit-cost estimates updated June 2016. Literature review updated November 2015.

Program Description: These programs added additional physical activity to the elementary or middle school day through guided activities led by the classroom teacher or physical education teacher. They did not replace standard physical education classes or recess. The format of these interventions varied but most programs incorporated physical activity into the standard classroom curriculum. Some programs included instruction on the importance of physical activity and/or nutrition in addition to the time that students were engaged physical activity time. The intervention length ranged from two months to six school years.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$3,695	Benefit to cost ratio	$32.94
Participants	$8,204	Benefits minus costs	$14,832
Others	$3,680	Chance the program will produce benefits greater than the costs	67 %
Indirect	($284)		
Total benefits	$15,296		
Net program cost	($464)		
Benefits minus cost	$14,832		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with test scores	$8,355	$3,794	$3,718	$0	$15,867
Health care associated with obesity	($2)	$0	$9	$0	$7
Costs of higher education	($149)	($99)	($46)	($50)	($344)
Adjustment for deadweight cost of program	$0	$0	$0	($234)	($233)
Totals	$8,204	$3,695	$3,680	($284)	$15,296

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

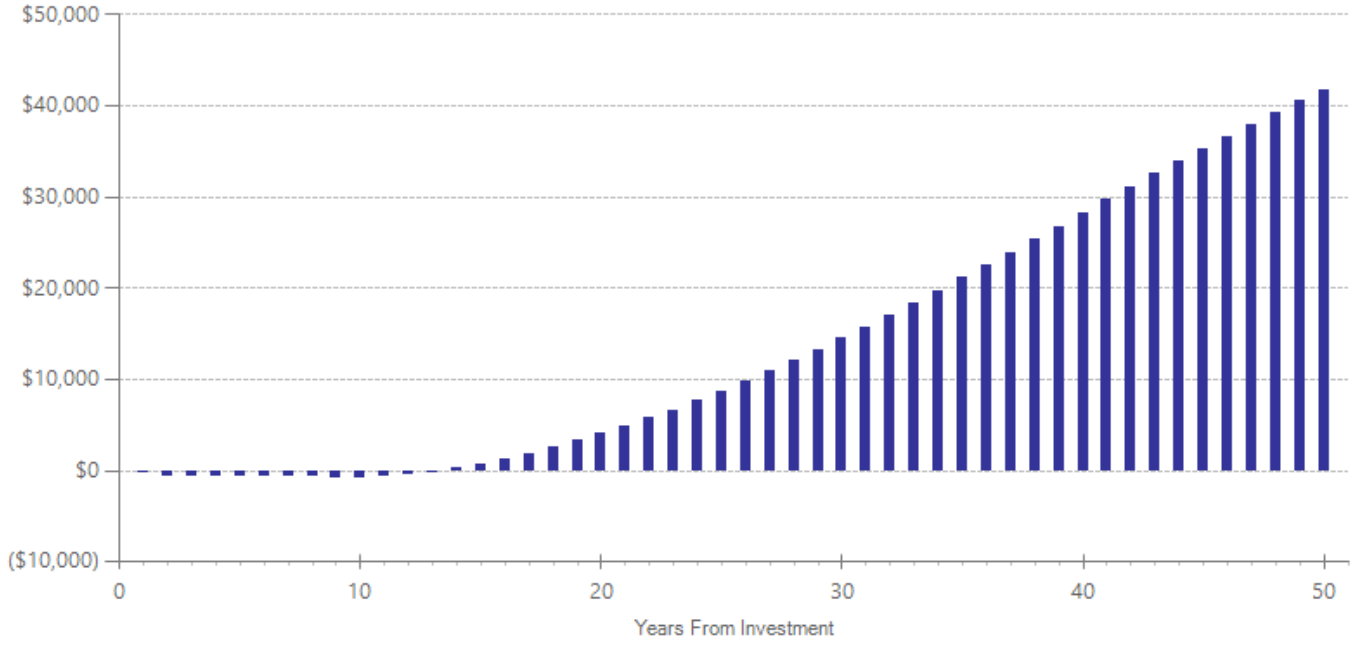
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$235	2014	Present value of net program costs (in 2015 dollars)	($464)
Comparison costs	$0	2014	Cost range (+ or -)	20 %

The programs in this analysis added 146 additional hours of physical activity and required an average of seven hours of professional development per teacher. We assume that these costs are spread over two years. The annual per-student cost of the intervention was calculated by adding the teacher time required to incorporate this additional physical activity into the school day and the average number of hours of teacher training required and dividing this sum by the average K-8th grade class size in Washington State (26.55 students). The per-student staff hours were multiplied by the average hourly salary and benefits for elementary school teachers in Washington State.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	17	5767	-0.020	0.024	12	0.000	0.101	14	-0.020	0.859
Test scores	3	528	0.123	0.187	12	0.095	0.205	17	0.123	0.510

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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Seattle Social Development Project

Benefit-cost estimates updated June 2016. Literature review updated April 2012.

Program Description: The Seattle Social Development Project (SSDP) targets youth in 1st to 6th grades 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 provides a curriculum focused on child skill development in communication, negotiation, conflict resolution, and refusal skills to students in 1st grade. Parents are trained in behavior management, academic support, and skills to reduce risks for drug use.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$5,096	Benefit to cost ratio	$4.27
Participants	$8,468	Benefits minus costs	$12,148
Others	$3,701	Chance the program will produce	
Indirect	($1,406)	benefits greater than the costs	66 %
Total benefits	$15,860		
Net program cost	($3,712)		
Benefits minus cost	$12,148		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$334	$743	$167	$1,244
Labor market earnings associated with high school graduation	$9,221	$4,187	$4,226	$0	$17,635
K-12 grade repetition	$0	$147	$0	$73	$220
Public assistance	($1)	$3	$0	$1	$3
Health care associated with educational attainment	($274)	$1,001	($1,094)	$501	$134
Costs of higher education	($498)	($589)	($186)	($294)	($1,567)
Subtotals	$8,448	$5,084	$3,689	$447	$17,668
From secondary participant					
Labor market earnings associated with high school graduation	$23	$10	$10	$0	$43
K-12 grade repetition	$0	$0	$0	$0	$0
Health care associated with educational attainment	($1)	$2	$2	$1	$5
Costs of higher education	($1)	($1)	$0	$0	($3)
Subtotals	$21	$12	$12	$1	$46
Adjustment for deadweight cost of program	$0	$0	$0	($1,855)	($1,855)
Totals	$8,468	$5,096	$3,701	($1,406)	$15,860

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

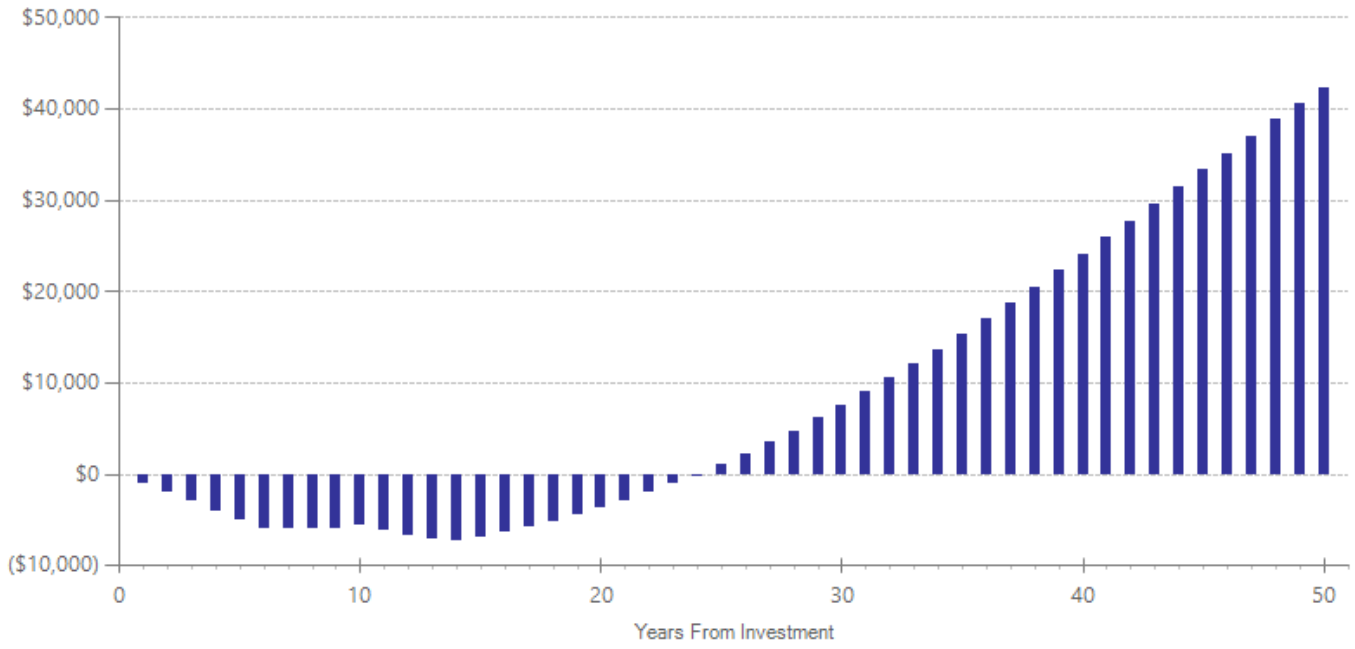
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$499	1999	Present value of net program costs (in 2015 dollars)	($3,712)
Comparison costs	$0	1999	Cost range (+ or -)	10 %

The full per-participant cost to deliver the program over six years is taken from 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Crime	Primary	1	149	-0.081	0.154	19	-0.081	0.154	29	-0.214	0.182
High school graduation	Primary	1	149	0.097	0.152	19	0.097	0.152	19	-0.255	0.109
K-12 grade repetition	Primary	1	149	-0.135	0.161	16	-0.135	0.161	17	-0.355	0.042
Teen pregnancy (under age 18)	Primary	1	149	-0.127	0.153	19	-0.127	0.153	29	-0.335	0.040
Initiation of sexual activity	Primary	1	149	-0.146	0.166	19	-0.146	0.166	29	-0.385	0.015
Teen births under age 18	Primary	1	149	-0.114	0.192	19	-0.114	0.192	29	-0.300	0.148
Teen births (second generation)	Secondary	1	149	-0.114	0.192	19	-0.114	0.192	29	-0.300	0.148
Alcohol use in high school	Primary	1	149	-0.011	0.146	19	-0.011	0.146	19	-0.030	0.836

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

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Positive Action

Benefit-cost estimates updated June 2016. Literature review updated August 2015.

Program Description: Positive Action is one example of a school-wide positive behavior program, aimed at improving social and emotional learning and school climate. Positive Action consists of a detailed curriculum of approximately 140 short lessons throughout the school year in K-6th grades and 82 lessons in 7th-8th grades. School climate components of the program reinforce the classroom curriculum and include training and professional development for teachers, resource coordination, and incentives for positive behavior.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$3,012
Participants	$6,005
Others	$2,869
Indirect	($92)
Total benefits	$11,793
Net program cost	($440)
Benefits minus cost	$11,353

Benefit to cost ratio	$26.81
Benefits minus costs	$11,353
Chance the program will produce benefits greater than the costs	88 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$33	$71	$16	$120
Labor market earnings associated with test scores	$6,069	$2,756	$2,682	$0	$11,508
K-12 grade repetition	$0	$176	$0	$88	$264
Property loss associated with alcohol abuse or dependence	$2	$0	$4	$0	$6
Health care associated with anxiety disorder	$38	$116	$144	$58	$355
Costs of higher education	($106)	($70)	($33)	($35)	($243)
Adjustment for deadweight cost of program	$1	$0	$0	($219)	($217)
Totals	$6,005	$3,012	$2,869	($92)	$11,793

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

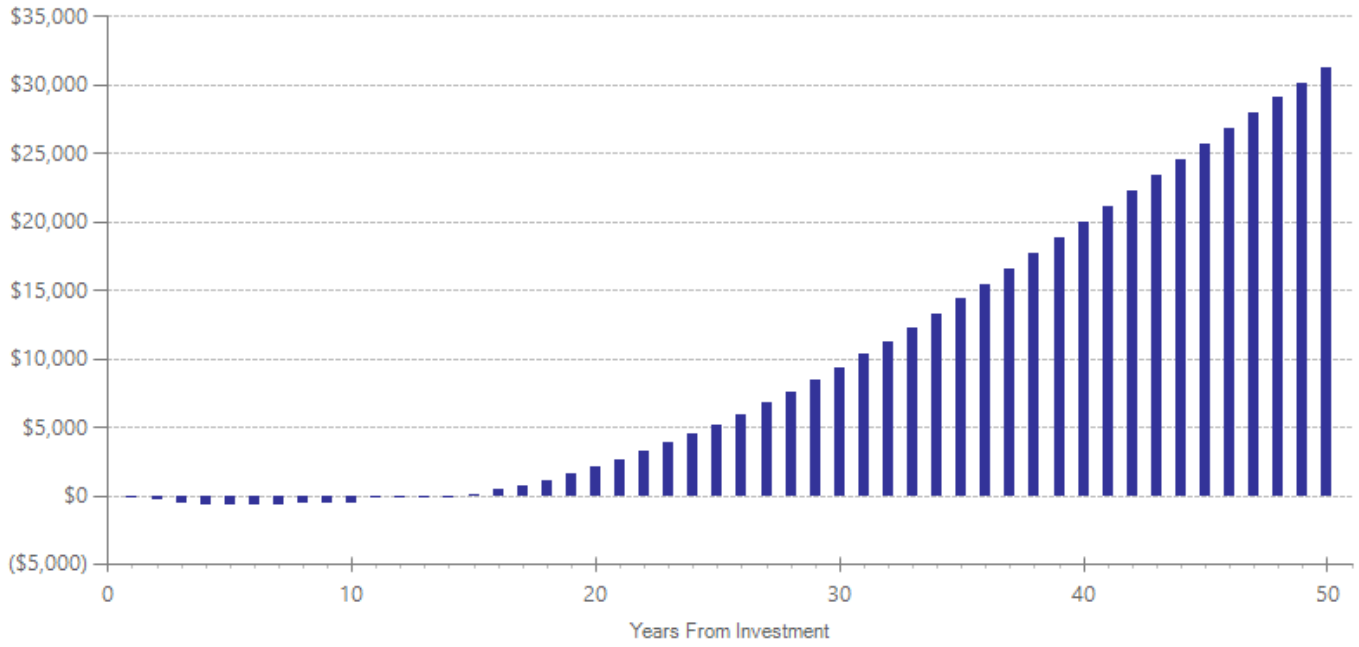
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$115	2014	Present value of net program costs (in 2015 dollars)	($440)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

The studies that we reviewed evaluated schools after an average of 3.5 years of implementing the Positive Action program. The cost includes the price of the Positive Action program kit for the first year (average cost of $425 for 30 students); a refresher kit for each subsequent year (average of $102.11 for 30 students for 2.5 years); teacher training at an average of $3,100 for 30 teachers; and a Positive Action school-wide climate kit costing $450 for a school with 30 classrooms (http://www.positiveaction.net/). We calculated the value of staff time using average Washington State compensation costs (including benefits) for teachers as reported by the Office of the Superintendent of Public Instruction. To calculate a per-student annual cost, we used the average number of students per classroom in Washington's prototypical school formula.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	2	1171	-0.144	0.059	11	-0.144	0.059	12	-0.341	0.002
Alcohol use before end of middle school	2	1171	-0.163	0.058	11	-0.163	0.058	12	-0.415	0.001
Illicit drug use before end of middle school	1	976	-0.293	0.065	11	-0.293	0.065	12	-0.771	0.001
Cannabis use before end of middle school	1	195	-0.132	0.147	15	-0.132	0.147	16	-0.348	0.026
Initiation of sexual activity	1	976	-0.395	0.066	11	-0.395	0.066	11	-1.039	0.001
Test scores	5	13991	0.104	0.055	11	0.075	0.060	17	0.309	0.046
School attendance	4	17656	0.310	0.163	10	0.310	0.163	11	0.526	0.001
Suspensions/expulsions	4	10429	-0.169	0.107	10	-0.169	0.107	11	-0.224	0.042
K-12 grade repetition	1	5754	-0.307	0.007	11	-0.307	0.007	17	-0.307	0.001
Obesity	1	195	-0.080	0.105	15	0.000	0.101	18	-0.210	0.047
Major depressive disorder	1	195	-0.053	0.206	15	0.000	0.059	16	-0.139	0.502
Anxiety disorder	1	195	-0.098	0.206	15	-0.045	0.025	16	-0.257	0.213

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Bavarian, N., Lewis, K.M., Acock, A., DuBois, D.L., Zi, Y., Vuchinich, S., . . . Flay, B.R. (under review). *Direct and mediated effects of a social-emotional learning and health promotion program on adolescent health outcomes: A matched-pair, cluster-randomized controlled trial.*

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Good Behavior Game

Benefit-cost estimates updated June 2016. 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. After teachers establish shared behavior expectations in their classroom, teams of students play the game throughout the day and may receive rewards by minimizing negative behaviors. The program is universal and can be applied to general populations of early elementary school children (1st and 2nd grades).

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$2,671
Participants	$4,308
Others	$3,099
Indirect	$264
Total benefits	$10,342
Net program cost	($161)
Benefits minus cost	$10,181

Benefit to cost ratio	$64.18
Benefits minus costs	$10,181
Chance the program will produce benefits greater than the costs	71 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$152	$326	$78	$555
Labor market earnings associated with high school graduation	$4,372	$1,985	$1,999	$0	$8,356
K-12 grade repetition	$0	$8	$0	$4	$12
K-12 special education	$0	$35	$0	$18	$53
Health care associated with smoking	$224	$687	$850	$345	$2,105
Property loss associated with alcohol abuse or dependence	$8	$0	$14	$0	$22
Costs of higher education	($295)	($196)	($91)	($99)	($681)
Adjustment for deadweight cost of program	$0	$0	$0	($81)	($81)
Totals	$4,308	$2,671	$3,099	$264	$10,342

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

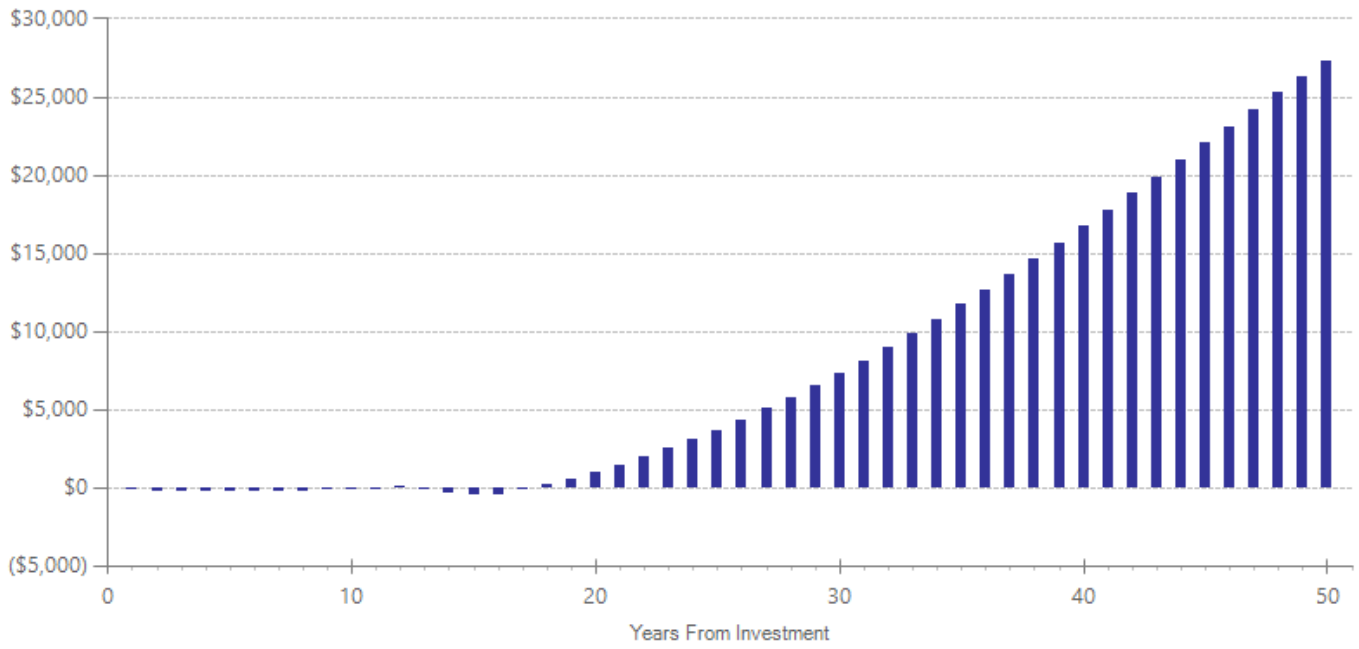
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$78	2011	Present value of net program costs (in 2015 dollars)	($161)
Comparison costs	$0	2011	Cost range (+ 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 cost estimate was provided by Jeanne Poduska, 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	1	239	-0.041	0.193	20	-0.041	0.193	30	-0.108	0.582
High school graduation	1	175	0.062	0.119	20	0.062	0.119	20	0.162	0.174
Smoking before end of middle school	2	540	-0.088	0.071	12	-0.088	0.071	15	-0.231	0.002
Regular smoking	1	175	-0.225	0.090	20	-0.225	0.090	30	-0.593	0.001
Alcohol abuse or dependence	1	176	-0.231	0.128	20	-0.231	0.128	30	-0.609	0.001
Major depressive disorder	2	399	-0.135	0.124	20	-0.070	0.152	22	-0.178	0.160
Illicit drug abuse or dependence	1	175	-0.115	0.089	20	-0.115	0.089	30	-0.304	0.001
Anxiety disorder	2	399	-0.192	0.165	20	-0.100	0.201	22	-0.192	0.242
Externalizing behavior symptoms	1	425	-0.437	0.084	12	-0.208	0.098	15	-0.437	0.001
Suicide attempts	1	178	-0.074	0.169	20	-0.074	0.169	25	-0.195	0.279
Antisocial personality disorder	1	179	-0.112	0.128	20	-0.112	0.128	25	-0.295	0.032

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Caring School Community (formerly Child Development Project)

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:			
Taxpayers	$2,572	Benefit to cost ratio	$8.17
Participants	$5,633	Benefits minus costs	$8,883
Others	$2,551	Chance the program will produce benefits greater than the costs	61 %
Indirect	($633)		
Total benefits	$10,123		
Net program cost	($1,240)		
Benefits minus cost	$8,883		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$14	$30	$7	$51
Labor market earnings associated with test scores	$5,727	$2,601	$2,527	$0	$10,854
Health care associated with alcohol abuse or dependence	$4	$24	$23	$12	$63
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$2
Costs of higher education	($99)	($66)	($31)	($33)	($228)
Adjustment for deadweight cost of program	$0	$0	$0	($619)	($619)
Totals	$5,633	$2,572	$2,551	($633)	$10,123

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

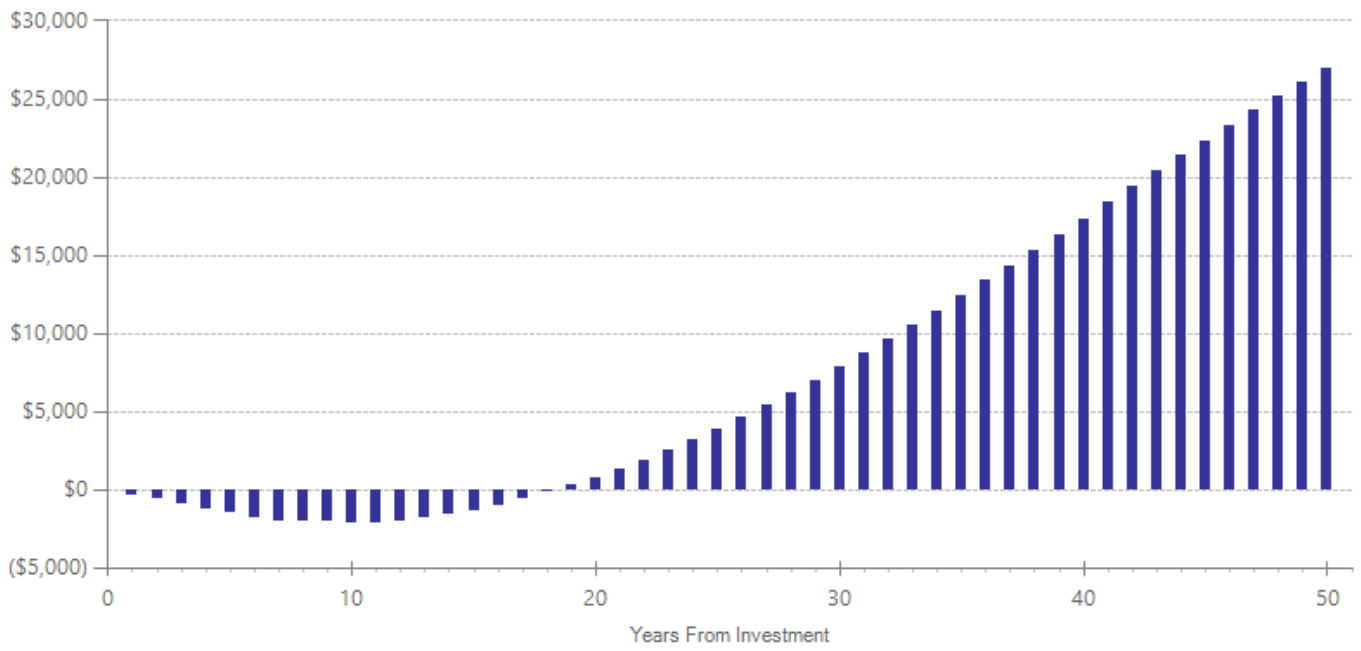
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$192	2013	Present value of net program costs (in 2015 dollars)	($1,240)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The per-student cost estimate assumes classroom teachers provide 56 hours of intervention over 75 sessions to classes of approximately 26 students. The estimate also includes training and materials costs obtained from the program developer (http://www.devstu.org/caring-school-community-whats-included).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Test scores	1	472	0.109	0.179	9	0.065	0.197	17	0.109	0.544
Smoking before end of middle school	1	800	-0.006	0.146	13	-0.006	0.146	15	-0.018	0.902
Cannabis use before end of middle school	1	800	-0.049	0.146	13	-0.049	0.146	15	-0.149	0.306
Alcohol use before end of middle school	1	800	-0.059	0.146	13	-0.059	0.146	15	-0.178	0.221

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Other school-wide positive behavior programs

Benefit-cost estimates updated June 2016. Literature review updated August 2015.

Program Description: The "positive behavior" program in this analysis is School-wide Positive Behavioral Interventions and Supports (SPBIS) (note: the Positive Action and Responsive Classroom programs are examined separately). This program encourages pro-social behavior for all students rather than using discipline to control problem behaviors among troubled students. The school-wide behavior program includes a specialized curriculum focusing on behavior expectations developed by school staff; professional development for teachers and staff; encouragement of and rewards for positive behaviors such as being on time and listening in the classroom; a consistent approach across classrooms to behavioral violations; and consistent collection of student discipline data.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$2,164	Benefit to cost ratio	$13.49
Participants	$4,489	Benefits minus costs	$7,644
Others	$1,873	Chance the program will produce benefits greater than the costs	77 %
Indirect	($270)		
Total benefits	$8,256		
Net program cost	($612)		
Benefits minus cost	$7,644		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with test scores	$4,603	$2,090	$2,036	$0	$8,729
Health care associated with educational attainment	($35)	$127	($139)	$64	$18
Costs of higher education	($80)	($53)	($25)	($27)	($185)
Adjustment for deadweight cost of program	$1	$0	$0	($307)	($305)
Totals	$4,489	$2,164	$1,873	($270)	$8,256

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

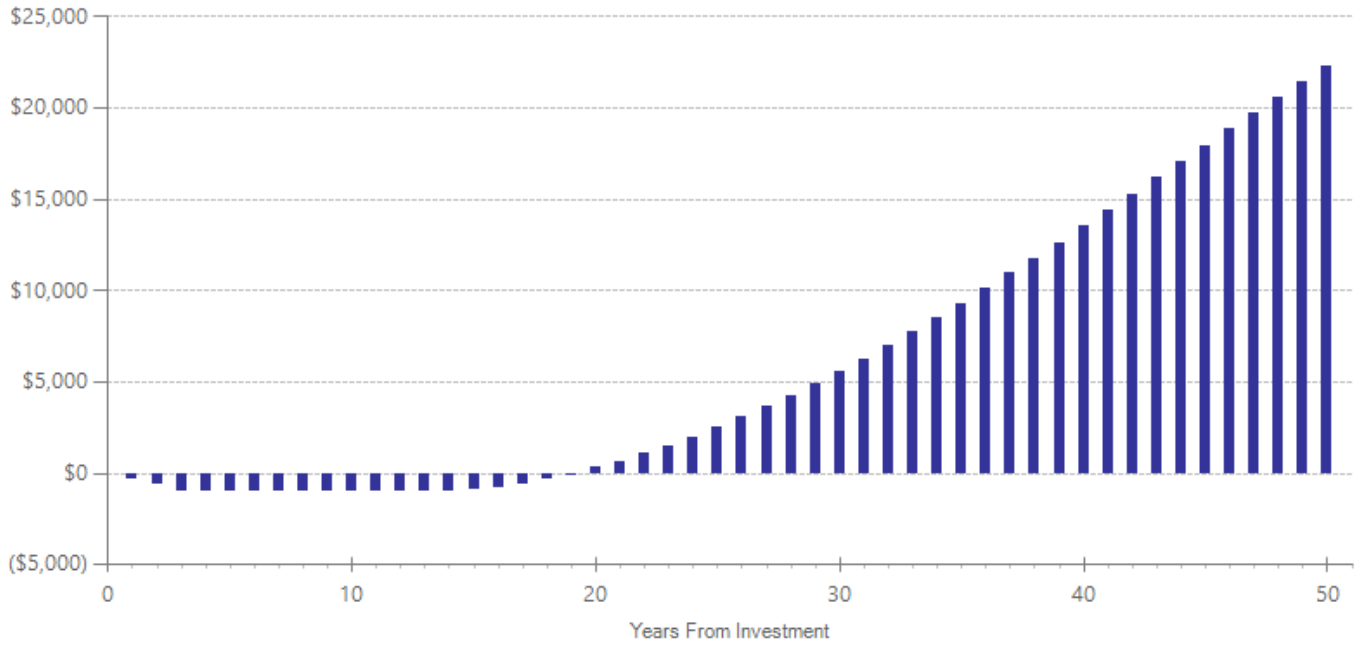
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$207	2013	Present value of net program costs (in 2015 dollars)	($612)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The effect in our meta-analysis reflects three years of program participation. Annual per-participant costs are based on a model for the total cost for implementation as described in Blonigen, B.A., Harbaugh, W.T., Singell, L.D., Horner, R.H., Irvin, L.K., & Smolkowski, K.S. (2008). Application of economic analysis to school-wide positive behavior support (SWPBS) programs. *Journal of Positive Behavior Interventions, 10*(1), 5-19. The cost estimate assumes district-wide implementation of a positive behavior program in ten schools. We calculated the value of staff time using average Washington State compensation costs (including benefits) as reported by the Office of the Superintendent of Public Instruction. To calculate a per-student annual cost, we used the average number of students per school in Washington's prototypical schools formula.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Test scores	1	14530	0.123	0.061	7	0.058	0.067	17	0.285	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Horner, R.H., Smolkowski, K., Todd, A.W., Esperanza, J., Sugai, G., Eber, L., & Nakasato, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions, 1*(3), 133-144.

Promoting Alternative Thinking Strategies (PATHS)

Benefit-cost estimates updated June 2016. Literature review updated June 2015.

Program Description: The Promoting Alternative Thinking Strategies (PATHS) curriculum is a classroom socioemotional learning program designed to improve self-control, emotional understanding, interpersonal relationships, and social problem-solving skills for grades K-6. The program is designed to be a multi-year, school-wide intervention to prevent serious emotional and behavioral problems. The PATHS curriculum provides scripts to guide lessons that classroom teachers or counselors teach two to three times a week.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$1,843
Participants	$4,104
Others	$1,818
Indirect	($204)
Total benefits	$7,560
Net program cost	($356)
Benefits minus cost	$7,204

Benefit to cost ratio	$21.24
Benefits minus costs	$7,204
Chance the program will produce benefits greater than the costs	63 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$0	$0	$0	$0
Labor market earnings associated with test scores	$4,177	$1,897	$1,840	$0	$7,913
K-12 grade repetition	$0	($5)	$0	($3)	($8)
K-12 special education	$0	$0	$0	$0	$0
Health care associated with disruptive behavior disorder	$0	$0	$0	$0	$0
Costs of higher education	$0	$0	$0	$0	$0
Adjustment for deadweight cost of program	($73)	($48)	($22)	($202)	($345)
Totals	$4,104	$1,843	$1,818	($204)	$7,560

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

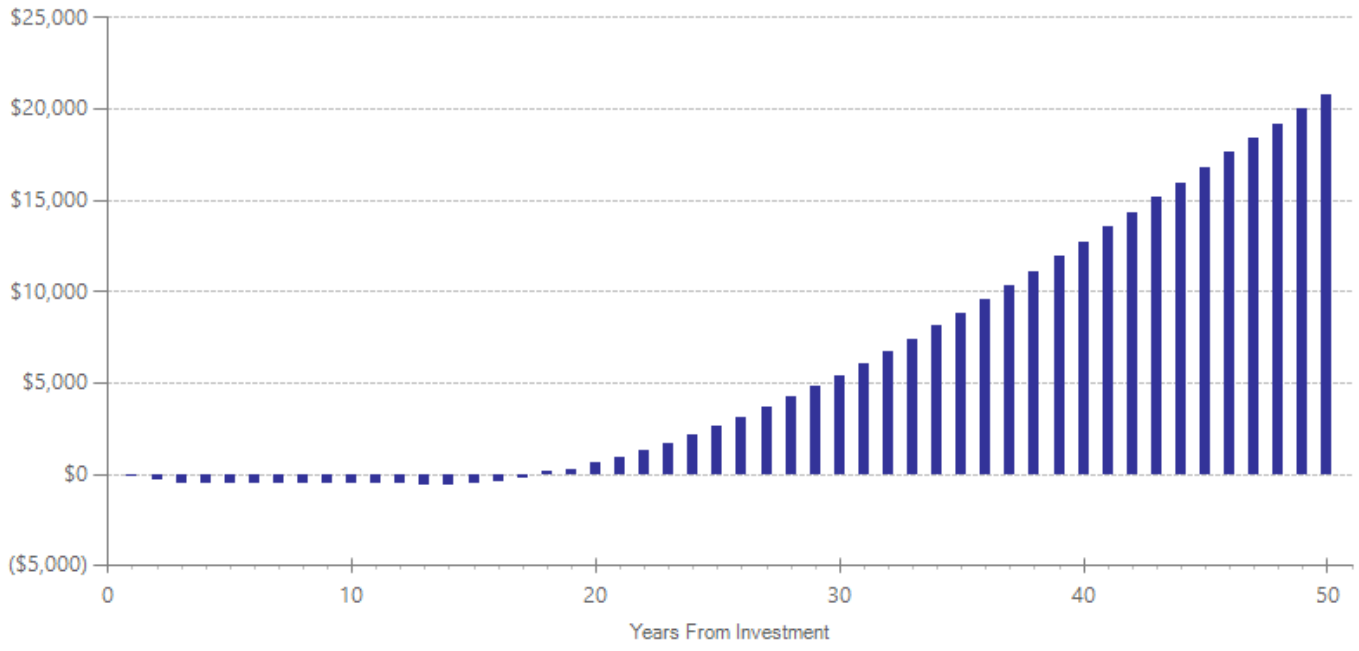
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$119	2012	Present value of net program costs (in 2015 dollars)	($356)
Comparison costs	$0	2012	Cost range (+ or -)	10 %

The effects of PATHS are based on three years of program participation on average. Our cost estimates are from numbers published by Blueprints for Violence Prevention (http://www.blueprintsprograms.com/program-costs/promoting-alternative-thinking-strategies-paths), based on implementation in a school with 500 students, 20 teachers, and a part-time coach (0.5 FTE, $30,000) in 2012. The ongoing training and support costs for the teachers and the coach are estimated to be $19,500. Curriculum and supplies for 20 classrooms are estimated to be $10,000.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Externalizing behavior symptoms	9	4149	0.033	0.026	6	0.001	0.219	9	0.029	0.281
Internalizing symptoms	7	3420	0.015	0.029	6	0.000	0.827	8	-0.007	0.896
Test scores	2	373	0.130	0.130	6	0.052	0.143	17	0.130	0.265

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Schonfeld, D.J., Adams, R.E., Fredstrom, B.K., Weissberg, R.P., Gilman, R., Voyce, C., Tomlin, R., ... Speese-Linehan, D. (2014). Cluster-randomized trial demonstrating impact on academic achievement of elementary social-emotional learning. *School Psychology Quarterly*.

Behavioral Monitoring and Reinforcement Program (BMRP)

Benefit-cost estimates updated June 2016. Literature review updated April 2012.

Program Description: Behavioral Monitoring and Reinforcement Program (BMRP) 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 7th 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 child's progress. Teachers submit weekly reports assessing students' punctuality, preparedness, and behavior in the classroom. The students are rewarded for good evaluations. Each week, three-to-five 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 Statistics Per Participant

Benefits to:

Taxpayers	$1,942	Benefit to cost ratio	$5.11
Participants	$1,985	Benefits minus costs	$5,448
Others	$2,630	Chance the program will produce benefits greater than the costs	63 %
Indirect	$218		
Total benefits	$6,775		
Net program cost	($1,327)		
Benefits minus cost	$5,448		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$809	$1,927	$403	$3,138
Labor market earnings associated with high school graduation	$2,203	$1,001	$1,008	$411	$4,623
Health care associated with educational attainment	($64)	$235	($257)	$117	$31
Costs of higher education	($154)	($103)	($48)	($51)	($355)
Adjustment for deadweight cost of program	$0	$0	$0	($662)	($661)
Totals	$1,985	$1,942	$2,630	$218	$6,775

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

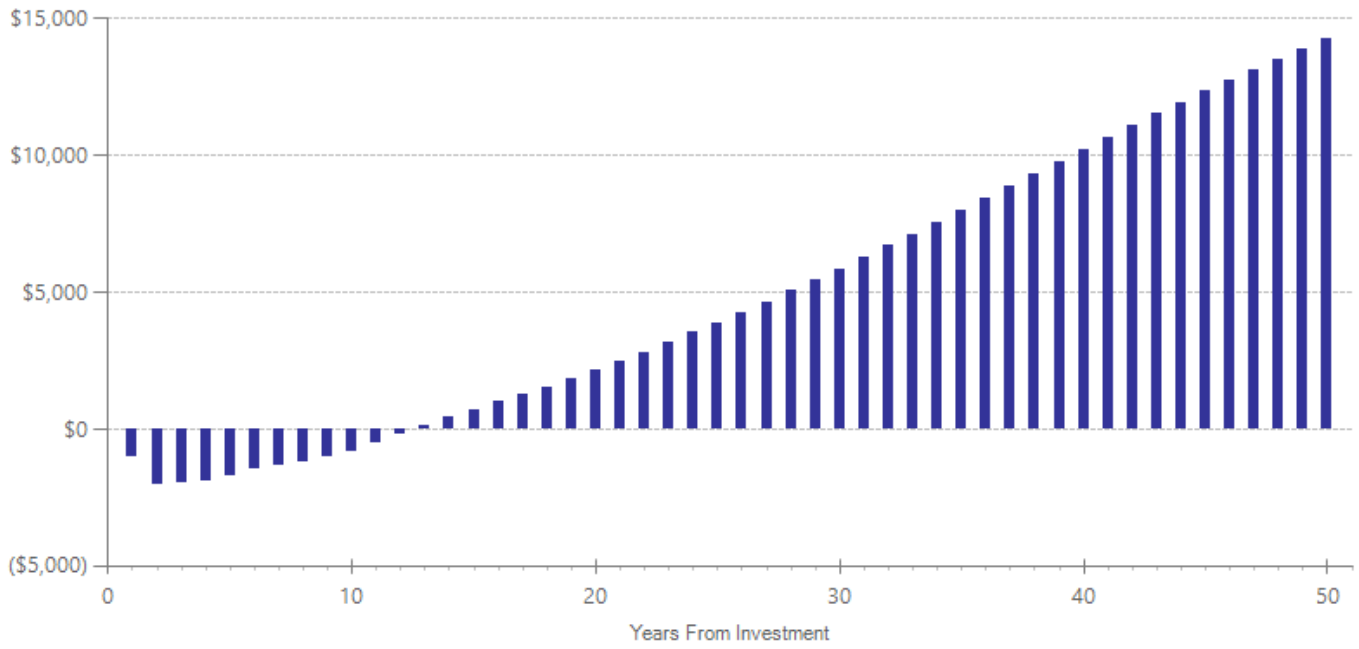
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$500	1999	Present value of net program costs (in 2015 dollars)	($1,327)
Comparison costs	$0	1999	Cost range (+ or -)	10 %

This program takes place over a two-year period. Per-participant cost source comes from Miller, T.R., & Hendrie, D. (2005). How should governments spend the drug prevention dollar: A buyer's guide. In: Stockwell, T., Gruenewald, P., Toumbourou, J., and Loxley, W., (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (pp. 415–431). Chichester, England: John Wiley & Sons., Table 7.3.2.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	1	30	-0.213	0.501	16	-0.213	0.501	26	-0.561	0.271
Employment	1	30	0.269	0.519	16	0.269	0.519	26	0.709	0.215
School attendance	3	34	0.343	0.244	16	0.343	0.244	16	0.903	0.001
Grade point average	3	34	0.299	0.244	16	0.299	0.244	16	0.786	0.002

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

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Citations Used in the Meta-Analysis

Bry, B.H., & George, F.E. (1979). Evaluating and improving prevention programs: A strategy from drug abuse. *Evaluation and Program Planning, 2*(2), 127-136.

Bry, B.H., & George, F.E. (1980). The preventive effects of early intervention on the attendance and grades of urban adolescents. *Professional Psychology, 11*(2), 252-260.

Bry, B.H. (1982). Reducing the incidence of adolescent problems through preventive intervention: One- and five-year follow-up. *American Journal of Community Psychology, 10*(3), 265-276.

School-based tobacco prevention programs

Benefit-cost estimates updated June 2016. Literature review updated December 2014.

Program Description: School-based tobacco prevention programs have curricula specifically designed for tobacco prevention and cessation. These programs aim to increase students' peer pressure resistance skills, instruct about the health and social consequences of tobacco use, and often teach students to decipher pro-tobacco media messaging. Two name-brand programs included in this meta-analysis were Project Towards No Tobacco Use and Project SHOUT (Students Helping Others Understand Tobacco). Both programs are targeted toward middle school students and are delivered in 12-18 classroom sessions.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$1,204
Participants	$2,076
Others	$1,350
Indirect	$90
Total benefits	$4,720
Net program cost	($63)
Benefits minus cost	$4,657

Benefit to cost ratio	$74.88
Benefits minus costs	$4,657
Chance the program will produce benefits greater than the costs	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with high school graduation	$2,117	$961	$972	$0	$4,050
Health care associated with smoking	$112	$344	$426	$172	$1,053
Costs of higher education	($153)	($101)	($47)	($51)	($352)
Adjustment for deadweight cost of program	$0	$0	$0	($32)	($31)
Totals	$2,076	$1,204	$1,350	$90	$4,720

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

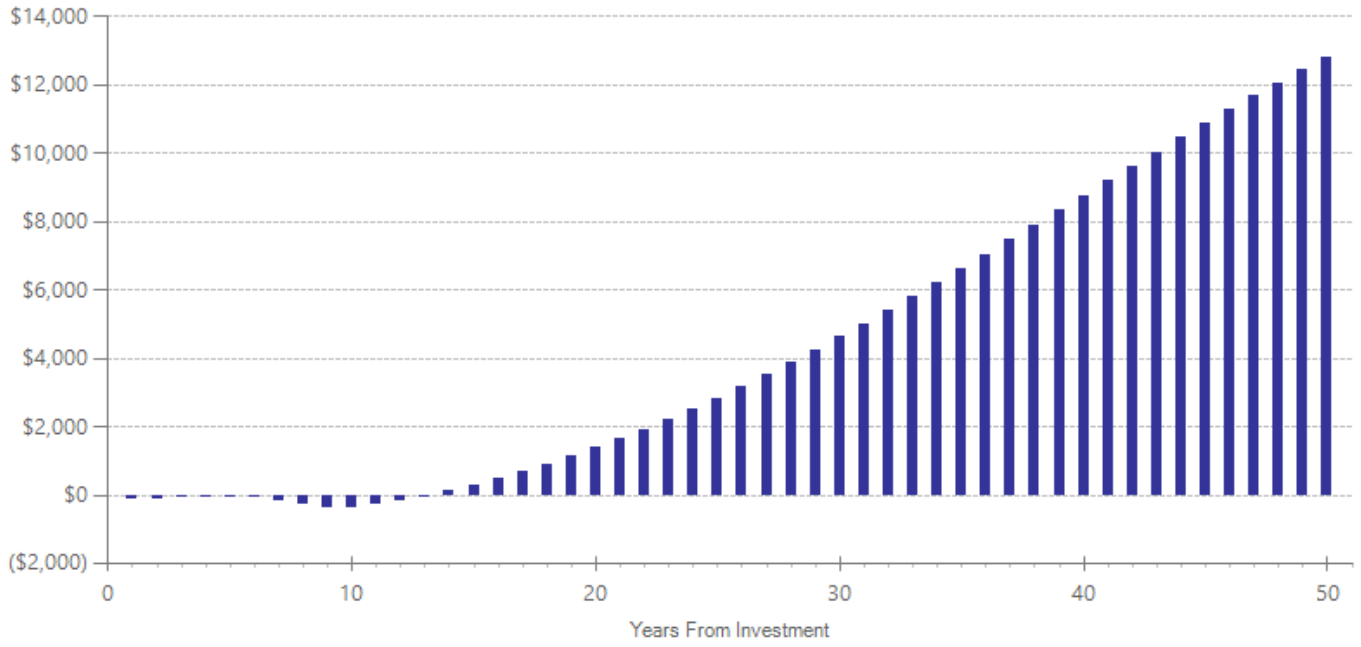
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$63	2014	Present value of net program costs (in 2015 dollars)	($63)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

Although these programs often spread delivery over two school years, with a set of core sessions in the first year and a set of "booster" sessions in the second, our costs assume all sessions are delivered in a single year. We constructed a per-student cost by first computing estimates for Project TNT and Project SHOUT, based on components reported by the National Registry of Evidence-based Programs and Practices (TNT: http://legacy.nreppadmin.net/ViewIntervention.aspx?id=157) and Sociometrics (SHOUT: http://www.socio.com/ysa08.php). We then computed a simple average of the cost of the two programs. Costs include materials, training, and teacher time for program delivery.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

Elder, J.P., Wildey, M., de Moor, C., Sallis, J.F., Eckhardt, L., Edwards, C., . . . Woodruff, S.I. (1993). The long-term prevention of tobacco use among junior high school students: Classroom and telephone interventions. *American Journal of Public Health, 83*(9), 1239-1244.

Model Smoking Prevention Program

Benefit-cost estimates updated June 2016. Literature review updated December 2014.

Program Description: The Model Smoking Prevention Program (MSPP, formerly known as the Minnesota Smoking Prevention Program) is a school-based tobacco prevention program for adolescents in 4th through 8th grades. MSPP addresses tobacco use by influencing the social and psychological factors that encourage the onset of smoking. The program includes six classroom sessions and involves students working in collaboration with peers to learning about the consequences of smoking and skills to resist smoking. A 30-minute training session for peer leaders is also included. Teachers act as facilitators following a one-day training.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$752	Benefit to cost ratio	$101.92
Participants	$1,373	Benefits minus costs	$3,242
Others	$837	Chance the program will produce benefits greater than the costs	92 %
Indirect	$311		
Total benefits	$3,274		
Net program cost	($32)		
Benefits minus cost	$3,242		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with high school graduation	$1,419	$644	$652	$274	$2,989
Health care associated with smoking	$57	$176	$218	$87	$538
Costs of higher education	($103)	($68)	($32)	($34)	($237)
Adjustment for deadweight cost of program	$0	$0	$0	($16)	($16)
Totals	$1,373	$752	$837	$311	$3,274

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

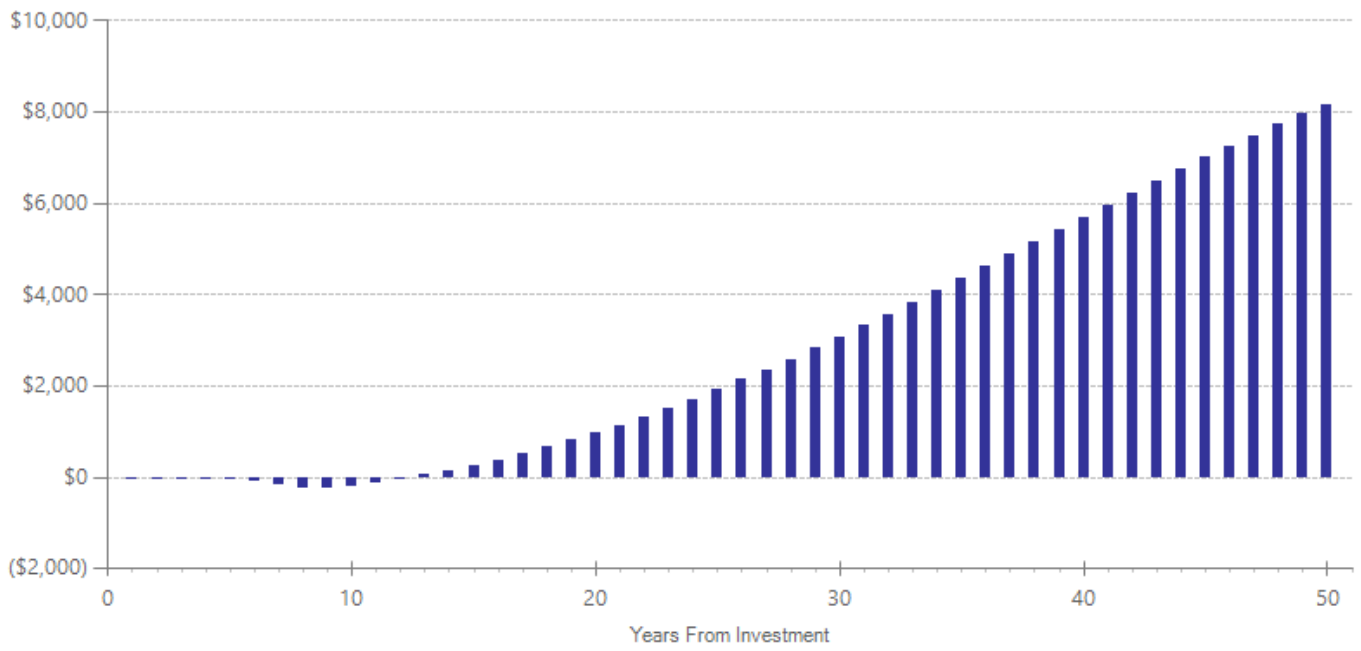
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$32	2013	Present value of net program costs (in 2015 dollars)	($32)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The curriculum materials cost $249 (2013 dollars) for each class, serving an estimated 30 participants. Our per-student estimate also includes teacher time for a one-day training. 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	3	6188	-0.226	0.153	13	-0.226	0.153	15	-0.308	0.038

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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

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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.

Project EX

Benefit-cost estimates updated June 2016. 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. Two versions of this program are included in the meta-analysis: One version implemented the program as a clinic within the school, while the other, Project EX-4, was implemented as a classroom-based intervention where 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 Statistics Per Participant

Benefits to:

Taxpayers	$760	Benefit to cost ratio	$50.61
Participants	$1,574	Benefits minus costs	$2,943
Others	$65	Chance the program will produce benefits greater than the costs	90 %
Indirect	$604		
Total benefits	$3,002		
Net program cost	($59)		
Benefits minus cost	$2,943		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with smoking	$1,556	$707	$0	$607	$2,870
Health care associated with smoking	$17	$53	$65	$27	$162
Adjustment for deadweight cost of program	$0	$0	$0	($30)	($30)
Totals	$1,574	$760	$65	$604	$3,002

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

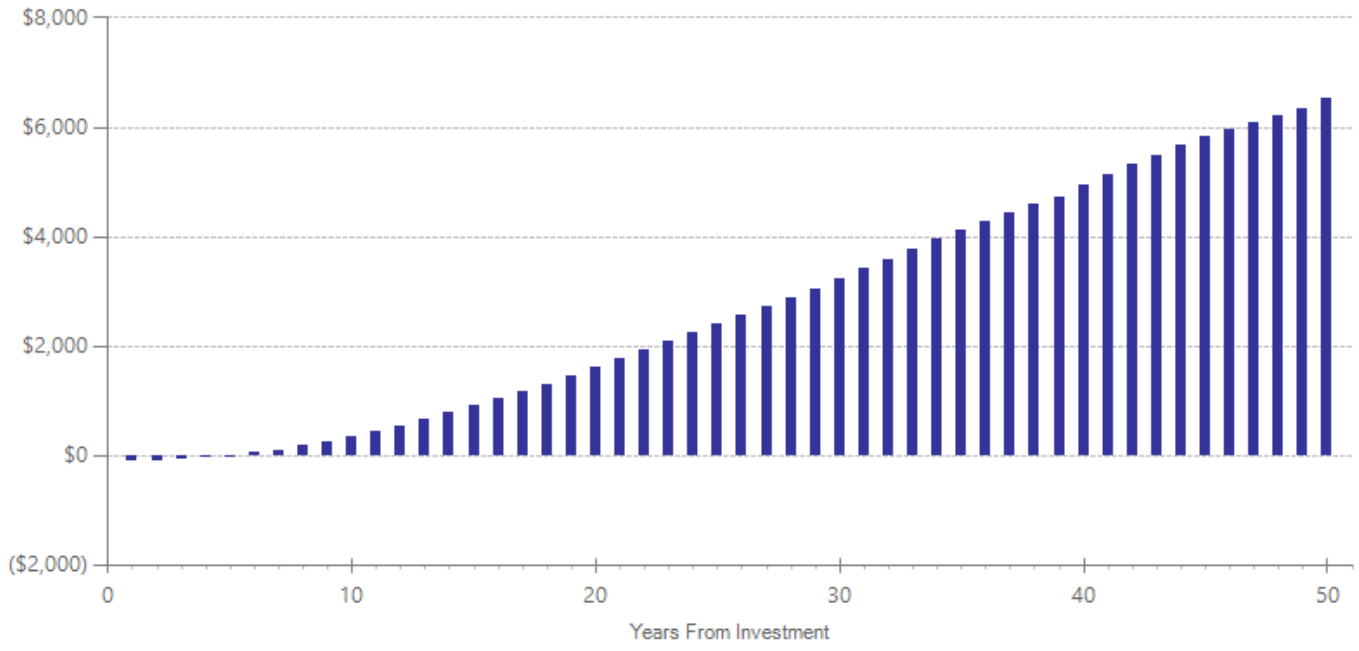
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$59	2014	Present value of net program costs (in 2015 dollars)	($59)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

This program is typically delivered over a six-week period. Costs were estimated from components reported by the National Registry of Evidence-based Programs and Practices (http://legacy.nreppadmin.net/ViewIntervention.aspx?id=47). These costs include workbooks for students, training for teachers, and teacher time for program delivery. The costs are specific to the clinic version of the program; we would expect costs to be slightly lower per student for the classroom version of the program.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Regular smoking	2	698	-0.178	0.128	17	-0.178	0.128	18	-0.466	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

All Stars

Benefit-cost estimates updated June 2016. 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 decision-making, goal setting, and peer pressure resistance skills training. The effect size and cost estimates reflect the Core & Plus implementation.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$632	Benefit to cost ratio	$26.07
Participants	$1,060	Benefits minus costs	$2,586
Others	$776	Chance the program will produce benefits greater than the costs	97 %
Indirect	$221		
Total benefits	$2,689		
Net program cost	($103)		
Benefits minus cost	$2,586		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$53	$124	$26	$203
Labor market earnings associated with high school graduation	$1,093	$496	$503	$204	$2,296
Health care associated with smoking	$44	$136	$168	$68	$417
Property loss associated with alcohol abuse or dependence	$2	$0	$5	$0	$7
Costs of higher education	($79)	($53)	($24)	($26)	($183)
Adjustment for deadweight cost of program	$0	$0	$0	($52)	($52)
Totals	$1,060	$632	$776	$221	$2,689

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

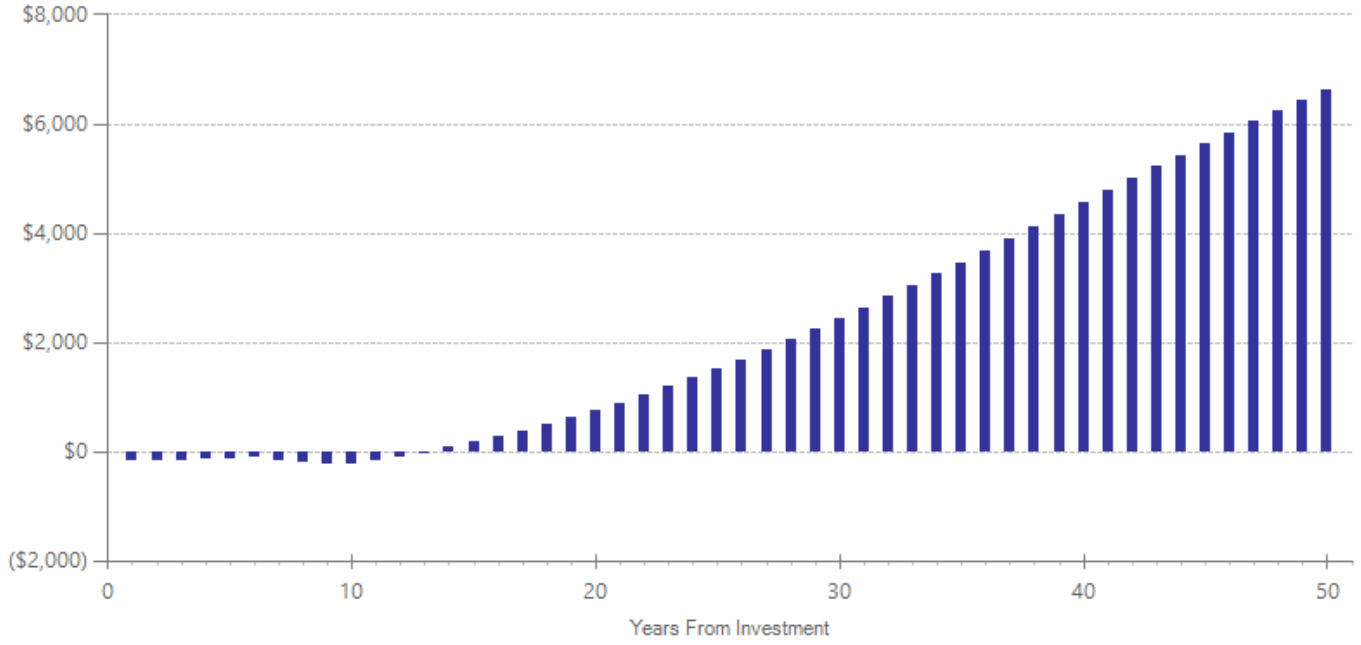
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$101	2013	Present value of net program costs (in 2015 dollars)	($103)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The cost estimate is based on information reported by the National Registry of Evidence-based Programs and Practices. (http://legacy.nreppadmin.net/ViewIntervention.aspx?id=28): Student materials ($33 per student) facilitator training and materials ($28 per student). We also include an estimate of the costs of teacher time needed for implementation based on the total teacher time required for 13 core sessions and 4.5 booster sessions, divided by the number of students per class, and multiplied by average Washington State teacher salaries ($40 per student). Cost estimates reported by NREPP are converted to reflect per-student (not per-program) costs where necessary.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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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.

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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.

Life Skills Training

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$410
Participants	$618
Others	$670
Indirect	$8
Total benefits	$1,706
Net program cost	($99)
Benefits minus cost	$1,607

Benefit to cost ratio	$17.25
Benefits minus costs	$1,607
Chance the program will produce benefits greater than the costs	66 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	($8)	($18)	($4)	($29)
Labor market earnings associated with high school graduation	$991	$450	$456	$0	$1,898
K-12 grade repetition	$0	$1	$0	$0	$1
Health care associated with smoking	$52	$161	$199	$80	$492
Labor market earnings associated with alcohol abuse or dependence	($355)	($161)	$0	($3)	($519)
Health care associated with alcohol abuse or dependence	($3)	($16)	($15)	($8)	($43)
Property loss associated with alcohol abuse or dependence	($1)	$0	($1)	$0	($2)
Costs of higher education	($72)	($48)	($22)	($24)	($165)
Adjustment for deadweight cost of program	$4	$31	$72	($34)	$73
Totals	$618	$410	$670	$8	$1,706

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

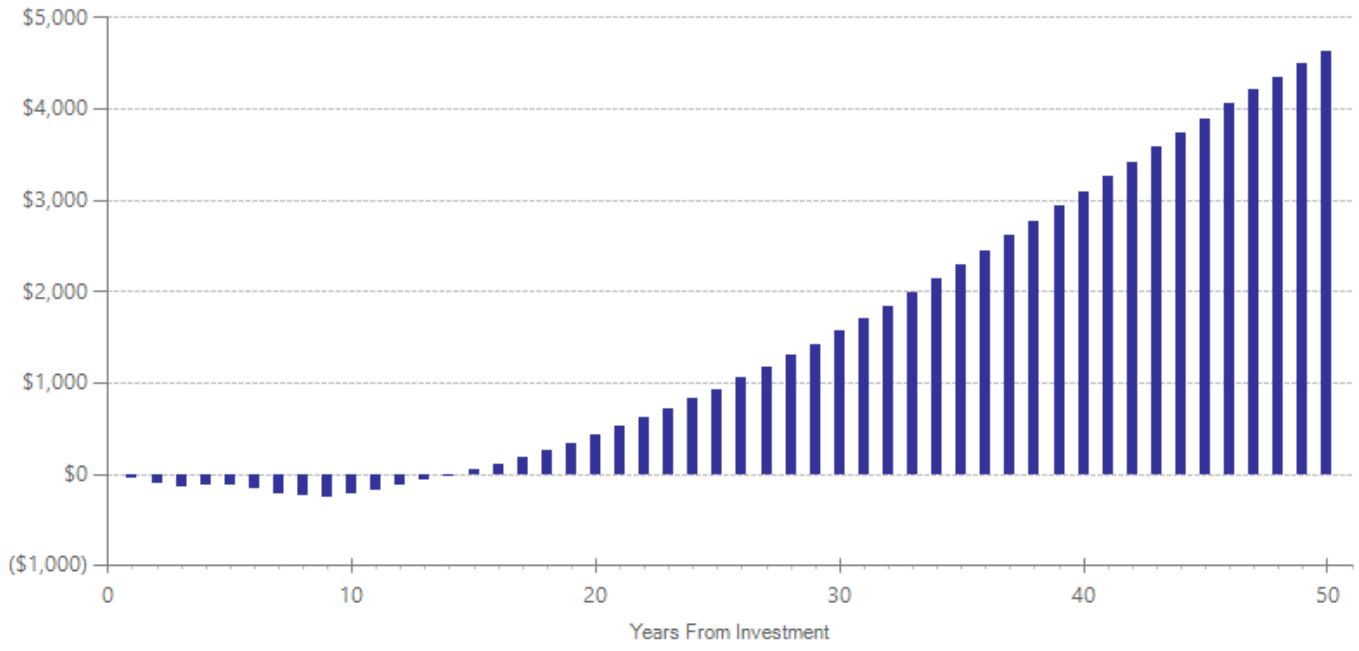
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$34	2013	Present value of net program costs (in 2015 dollars)	($99)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The cost estimate assumes teachers deliver 7.5 hours of the intervention over ten sessions per year (the program is typically implemented for three years) to approximately 26 students per class. The estimate includes cost for training and student materials based on data from Blueprints for Healthy Youth Development and the developer's website (http://www.blueprintsprograms.com/program-costs/lifeskills-training-lst; https://www.lifeskillstraining.com/2016-PHP-Price-List.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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	8	3617	-0.028	0.033	14	-0.028	0.033	15	-0.083	0.012
Cannabis use before end of middle school	4	3056	-0.014	0.033	14	-0.014	0.033	15	-0.041	0.217
Alcohol use before end of middle school	5	3150	-0.026	0.033	14	-0.026	0.033	15	-0.080	0.017
Internalizing symptoms	4	3092	-0.018	0.091	14	-0.013	0.071	16	-0.054	0.549
Alcohol use in high school	3	280	0.034	0.074	18	0.034	0.074	28	0.028	0.702
Smoking in high school	4	359	-0.076	0.073	18	-0.076	0.073	28	-0.128	0.129
Cannabis use in high school	3	280	0.000	0.077	18	0.000	0.077	28	-0.007	0.398
Youth binge drinking	2	1947	-0.059	0.116	15	-0.059	0.116	25	-0.241	0.421

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

SPORT

Benefit-cost estimates updated June 2016. 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 receive 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 Statistics Per Participant

Benefits to:

Taxpayers	$383
Participants	$622
Others	$466
Indirect	$27
Total benefits	$1,498
Net program cost	($39)
Benefits minus cost	$1,459

Benefit to cost ratio	$38.29
Benefits minus costs	$1,459
Chance the program will produce benefits greater than the costs	70 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$24	$58	$12	$94
Labor market earnings associated with high school graduation	$635	$289	$295	$0	$1,219
Health care associated with smoking	$33	$102	$126	$50	$312
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$3
Costs of higher education	($47)	($32)	($15)	($16)	($109)
Adjustment for deadweight cost of program	$0	$0	$0	($19)	($19)
Totals	$622	$383	$466	$27	$1,498

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

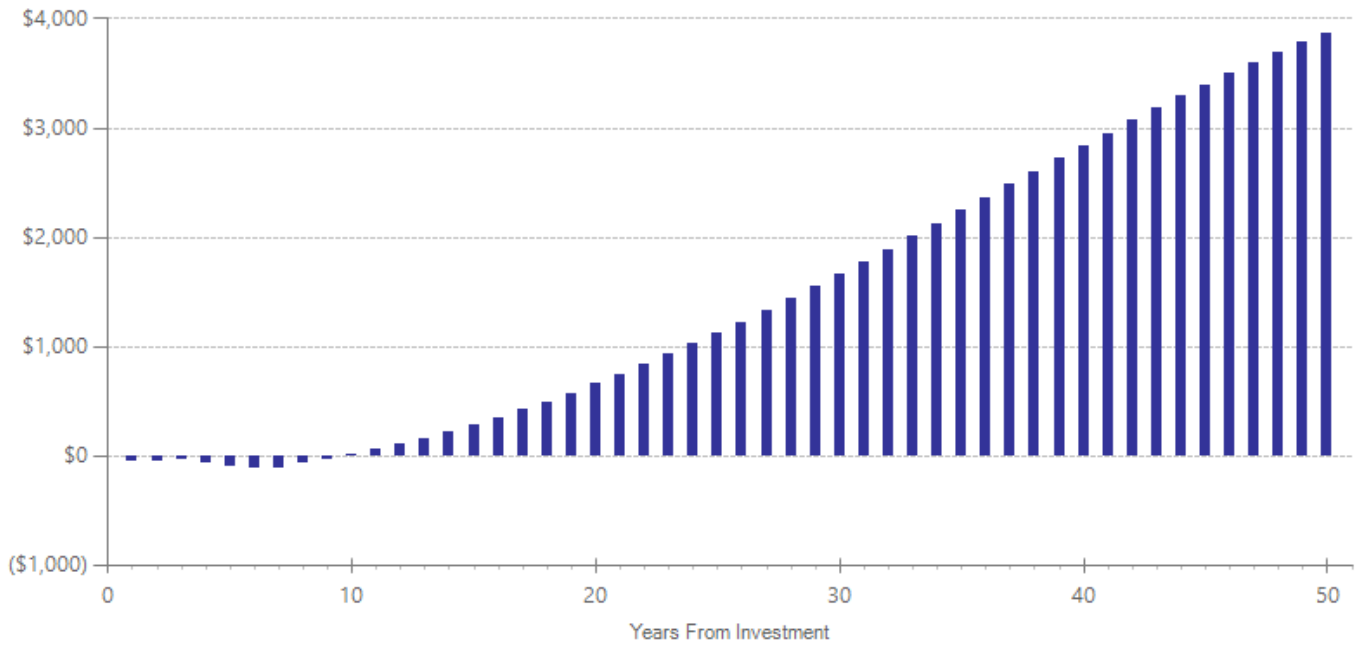
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$38	2013	Present value of net program costs (in 2015 dollars)	($39)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The per-student cost estimate assumes a specialist leads a single, 20-minute consultation and planning session. The estimate also includes training and material costs obtained from the program's 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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

Alcohol Literacy Challenge (for high school students)

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: Alcohol Literacy Challenge is a universal intervention for high school students and college students. In a single 60 to 90 minute group session, the intervention provides information about standard drinks, the range of alcohol expectancies, the difference between pharmacological effects and placebo effects, and efforts by alcohol companies to portray positive alcohol expectancies in advertisements. Part of the lesson involves watching video clips of commercials advertising alcohol. Students deconstruct the advertisements, identifying the positive alcohol expectancies conveyed and discussing the contradictions between those expectancies and alcohol's pharmacological and behavioral effects. In the high school version of ALC, students also divide into teams and assess the alcohol effects portrayed in alcohol-related video clips, earning points for correct answers.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$311	Benefit to cost ratio	$257.22
Participants	$607	Benefits minus costs	$991
Others	$55	Chance the program will produce benefits greater than the costs	59 %
Indirect	$22		
Total benefits	$995		
Net program cost	($4)		
Benefits minus cost	$991		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$12	$28	$6	$45
Labor market earnings associated with alcohol abuse or dependence	$606	$275	$0	$6	$886
Health care associated with alcohol abuse or dependence	$5	$28	$27	$14	$73
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$3
Costs of higher education	($5)	($3)	($1)	($2)	($10)
Adjustment for deadweight cost of program	$0	$0	$0	($2)	($2)
Totals	$607	$311	$55	$22	$995

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

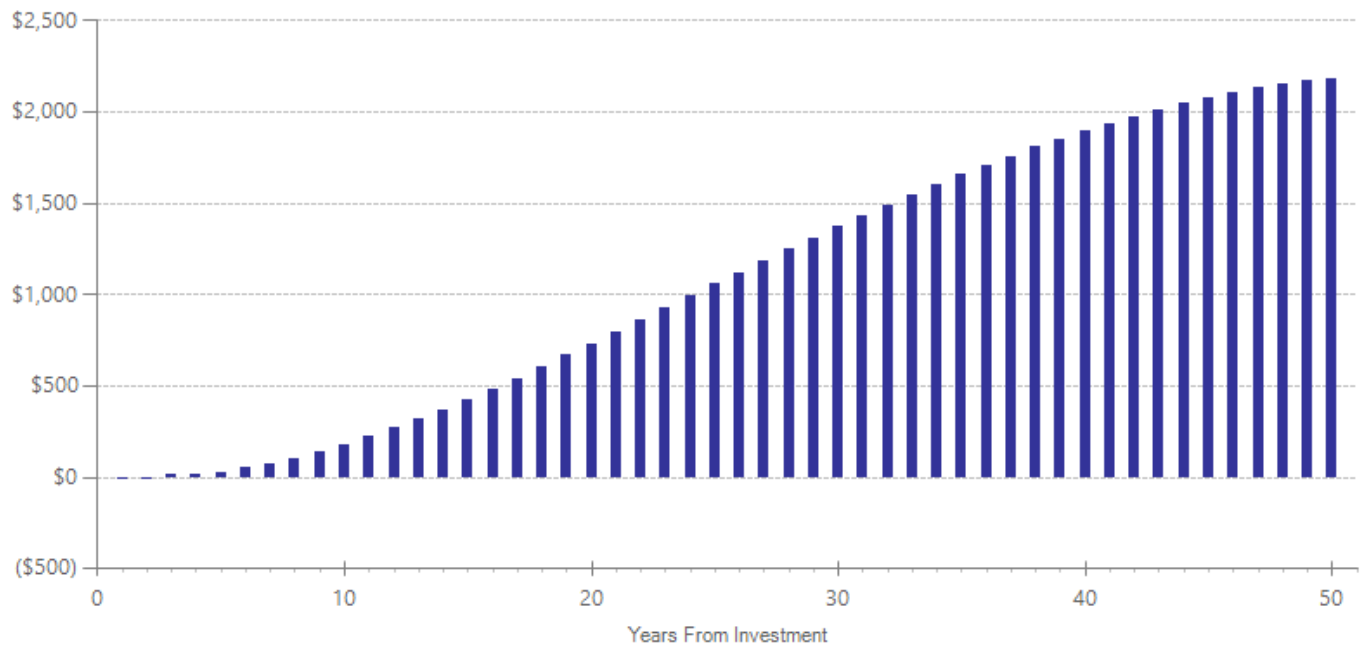
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$4	2014	Present value of net program costs (in 2015 dollars)	($4)
Comparison costs	$0	2014	Cost range (+ or -)	15 %

We estimate per participant cost assuming a training cost of $5000 plus $1500 for travel, that 5 school counselors would be trained at one time (training amortized over 3 years), and that one facilitator would provide the intervention to 200 students each year. An additional cost of $1 per student is required by the program license. More information is available at: http://medialiteracy.net/alcohol-literacy-challenge-curricula/

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	2	215	-0.050	0.237	18	-0.050	0.237	18	-0.151	0.526

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Sivasithamparam, J. (2011). *Evaluation of the expectancy challenge alcohol literacy curriculum (ECALC) for reducing alcohol use among high school students.* Orlando, Fla: University of Central Florida.

ATHENA (Athletes Targeting Healthy Exercise and Nutrition Alternatives)

Benefit-cost estimates updated June 2016. 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 emphasizes benefits of appropriate nutrition and health for sports. ATHENA also incorporates depression prevention content in the program. There is also a male-specific parallel program named ATLAS, although there are no rigorous evaluations of ATLAS to date.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$161	Benefit to cost ratio	$16.39
Participants	$280	Benefits minus costs	$583
Others	$182	Chance the program will produce benefits greater than the costs	56 %
Indirect	($3)		
Total benefits	$621		
Net program cost	($38)		
Benefits minus cost	$583		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with high school graduation	$287	$131	$133	$0	$551
Health care associated with smoking	$15	$45	$56	$23	$140
Costs of higher education	($22)	($15)	($7)	($7)	($51)
Adjustment for deadweight cost of program	$0	$0	$0	($19)	($19)
Totals	$280	$161	$182	($3)	$621

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

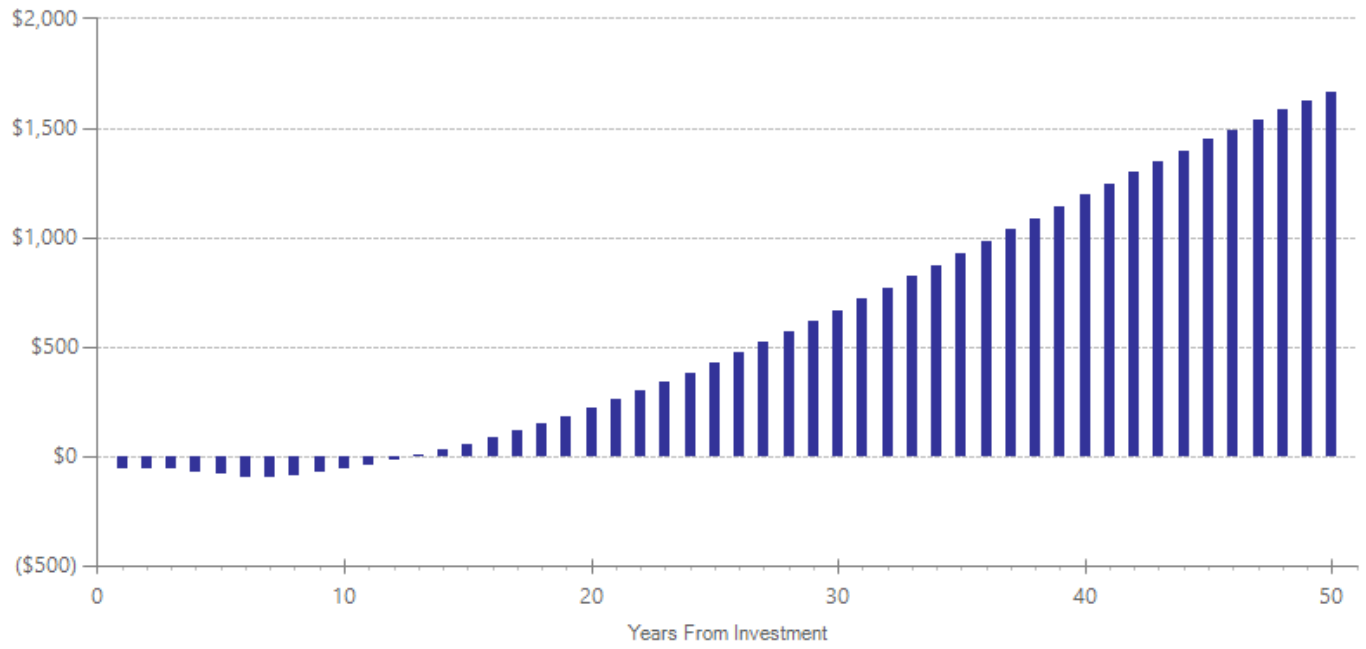
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$38	2014	Present value of net program costs (in 2015 dollars)	($38)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

This program is typically delivered over eight weekly sessions. Per-participant cost 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 on-site training, divided by the number of students receiving the materials 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

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WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

keepin' it REAL

Benefit-cost estimates updated June 2016. 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 playing, 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 Drug Abuse Resistance Education (D.A.R.E.) America.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$184	Benefit to cost ratio	$11.79
Participants	$350	Benefits minus costs	$525
Others	$51	Chance the program will produce benefits greater than the costs	62 %
Indirect	($11)		
Total benefits	$573		
Net program cost	($49)		
Benefits minus cost	$525		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$14	$34	$7	$55
Health care associated with smoking	$6	$17	$21	$8	$52
Labor market earnings associated with alcohol abuse or dependence	$359	$163	$0	$3	$526
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Costs of higher education	($16)	($10)	($5)	($5)	($36)
Adjustment for deadweight cost of program	$0	$0	$0	($24)	($24)
Totals	$350	$184	$51	($11)	$573

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

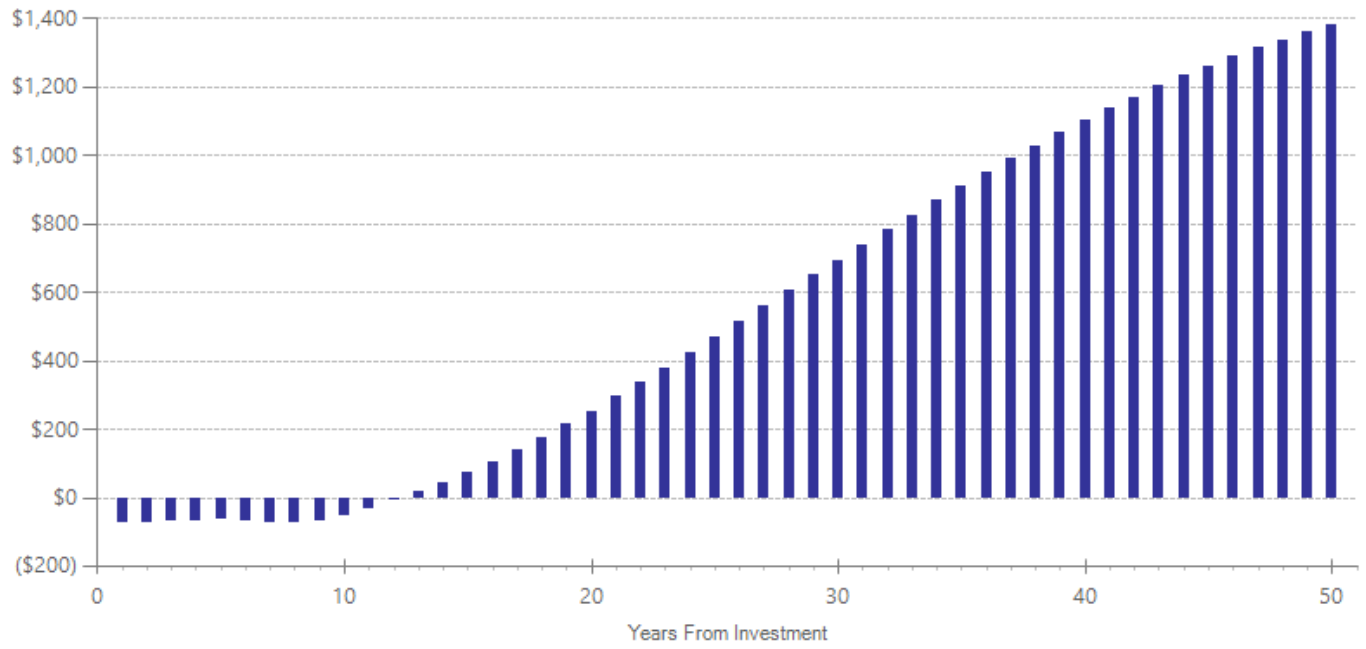
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$48	2014	Present value of net program costs (in 2015 dollars)	($49)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

The per-student cost estimate assumes teachers deliver 7.5 hours of instruction over ten sessions to classes of approximately 26 students. The estimate also includes training and implementation material costs obtained from the program's 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	2	2214	-0.017	0.124	15	-0.017	0.124	15	-0.053	0.671
Cannabis use before end of middle school	1	2051	-0.046	0.127	15	-0.046	0.127	15	-0.141	0.269
Alcohol use before end of middle school	2	2209	-0.046	0.124	15	-0.046	0.124	15	-0.140	0.258

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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*.

Too Good for Drugs

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$122	Benefit to cost ratio	$9.45
Participants	$203	Benefits minus costs	$447
Others	$150	Chance the program will produce benefits greater than the costs	91 %
Indirect	$25		
Total benefits	$500		
Net program cost	($53)		
Benefits minus cost	$447		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$11	$26	$6	$43
Labor market earnings associated with high school graduation	$209	$95	$95	$38	$437
Health care associated with smoking	$8	$26	$32	$13	$80
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Costs of higher education	($15)	($10)	($5)	($5)	($34)
Adjustment for deadweight cost of program	$0	$0	$0	($27)	($27)
Totals	$203	$122	$150	$25	$500

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

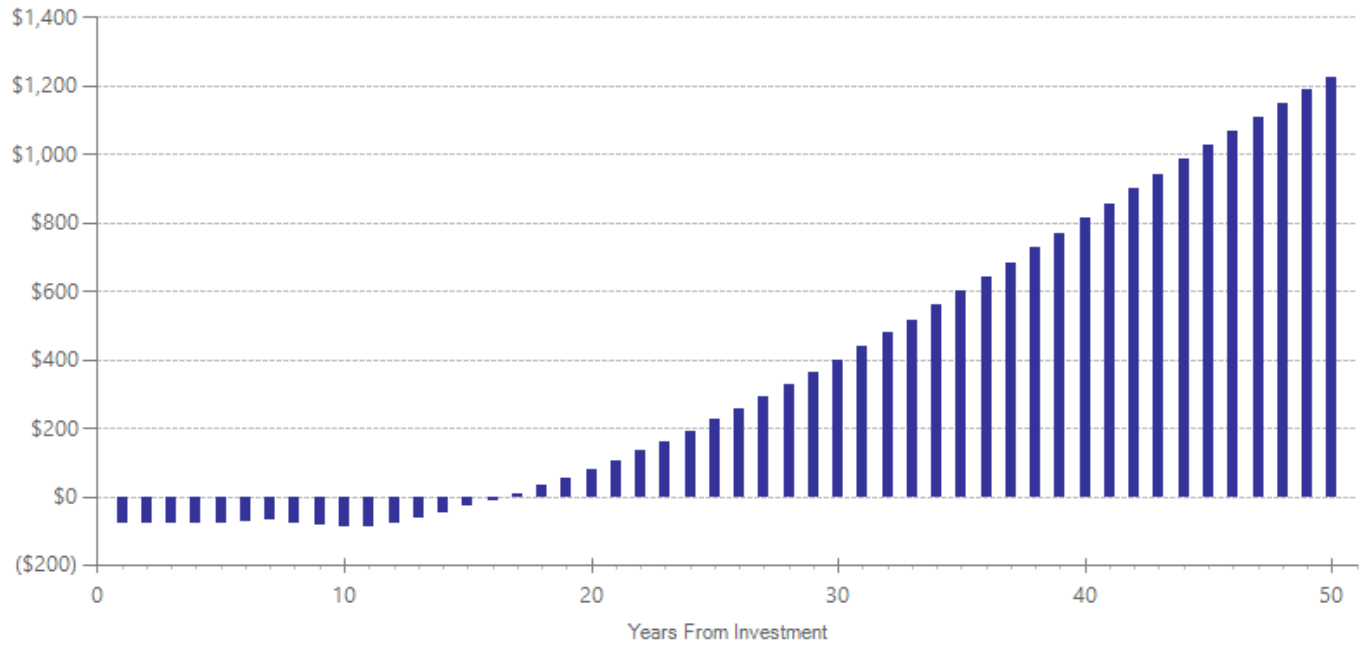
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$53	2014	Present value of net program costs (in 2015 dollars)	($53)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

This program is typically delivered in a single school year. We estimated the per-participant cost based on components reported by the National Registry of Evidence-based Programs and Practices (http://legacy.nreppadmin.net/ViewIntervention.aspx?id=75). Costs include teacher training, program and classroom materials such as workbooks, posters, surveys, games, CDs and DVDs, and teacher time for providing the lessons, spread across the number of children in a typical Washington classroom.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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 June 2016. 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 consists of 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 Statistics Per Participant

Benefits to:			
Taxpayers	$132	Benefit to cost ratio	$5.29
Participants	$272	Benefits minus costs	$412
Others	$174	Chance the program will produce benefits greater than the costs	65 %
Indirect	($70)		
Total benefits	$508		
Net program cost	($96)		
Benefits minus cost	$412		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$26	$62	$13	$102
Labor market earnings associated with high school graduation	$405	$184	$186	$0	$775
Health care associated with alcohol abuse or dependence	$2	$12	$11	$6	$31
Property loss associated with alcohol abuse or dependence	$0	$0	$1	$0	$1
Health care associated with illicit drug abuse or dependence	($4)	($22)	($20)	($11)	($57)
Costs of higher education	($29)	($19)	($9)	($10)	($67)
Adjustment for deadweight cost of program	($103)	($49)	($57)	($68)	($277)
Totals	$272	$132	$174	($70)	$508

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

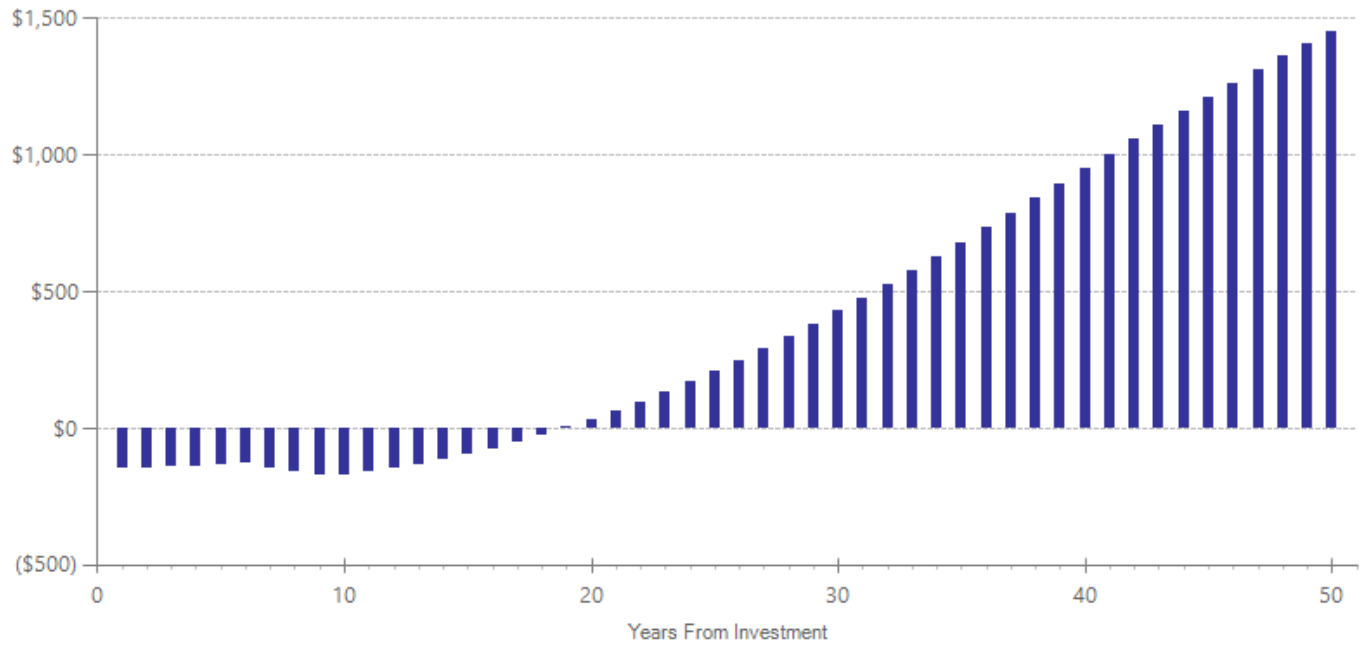
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$95	2013	Present value of net program costs (in 2015 dollars)	($96)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The per-student cost estimate assumes teachers provide 30 hours of instruction to classes of approximately 26 students. The estimate includes teacher training and program material costs obtained from NREPP (http://legacy.nreppadmin.net/ViewIntervention.aspx?id=24).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	1	2600	0.015	0.038	13	0.015	0.038	15	0.015	0.687
Cannabis use before end of middle school	1	2600	-0.096	0.037	13	-0.096	0.037	15	-0.096	0.009
Alcohol use before end of middle school	1	2600	0.017	0.036	13	0.017	0.036	15	0.017	0.625
Illicit drug use before end of middle school	1	2600	0.020	0.043	13	0.020	0.043	15	0.020	0.638
Youth binge drinking	1	2600	-0.024	0.050	13	-0.024	0.050	23	-0.024	0.636

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

American Indian adolescent substance abuse prevention programs

Benefit-cost estimates updated June 2016. 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 relevant 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 encourage coping and problem-solving skills, and disseminate information about health risks.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$188	Benefit to cost ratio	$8.42
Participants	$341	Benefits minus costs	$411
Others	($27)	Chance the program will produce benefits greater than the costs	54 %
Indirect	($36)		
Total benefits	$466		
Net program cost	($55)		
Benefits minus cost	$411		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$19	$43	$10	$72
Labor market earnings associated with high school graduation	($177)	($80)	($80)	($31)	($368)
Health care associated with smoking	($7)	($22)	($27)	($11)	($67)
Labor market earnings associated with alcohol abuse or dependence	$512	$232	$0	$5	$749
Health care associated with alcohol abuse or dependence	$6	$34	$33	$17	$91
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$4
Costs of higher education	$13	$8	$4	$4	$29
Adjustment for deadweight cost of program	($7)	($4)	($2)	($30)	($43)
Totals	$341	$188	($27)	($36)	$466

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

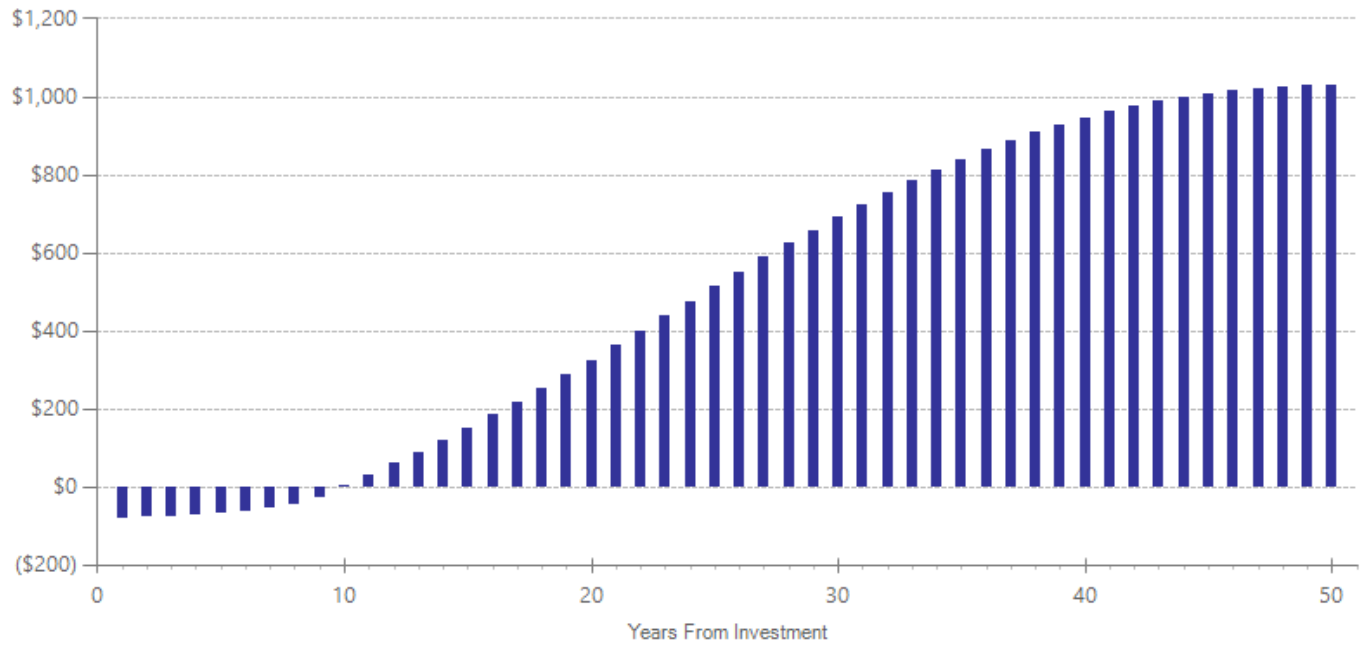
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$55	2014	Present value of net program costs (in 2015 dollars)	($55)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

These substance abuse programs are typically delivered during a single school year. Per-participant 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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

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

Project Towards No Drug Abuse (TND)

Benefit-cost estimates updated June 2016. 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 is comprised of twelve 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 Statistics Per Participant

Benefits to:

Taxpayers	$136
Participants	$146
Others	$141
Indirect	$4
Total benefits	$427
Net program cost	($65)
Benefits minus cost	$361

Benefit to cost ratio	$6.54
Benefits minus costs	$361
Chance the program will produce benefits greater than the costs	57 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$5	$13	$3	$21
Labor market earnings associated with high school graduation	$144	$65	$66	$0	$275
Property loss associated with alcohol abuse or dependence	$0	$0	$0	$0	$0
Health care associated with illicit drug abuse or dependence	$13	$73	$65	$37	$188
Costs of higher education	($11)	($7)	($3)	($3)	($24)
Adjustment for deadweight cost of program	$0	$0	$0	($33)	($32)
Totals	$146	$136	$141	$4	$427

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

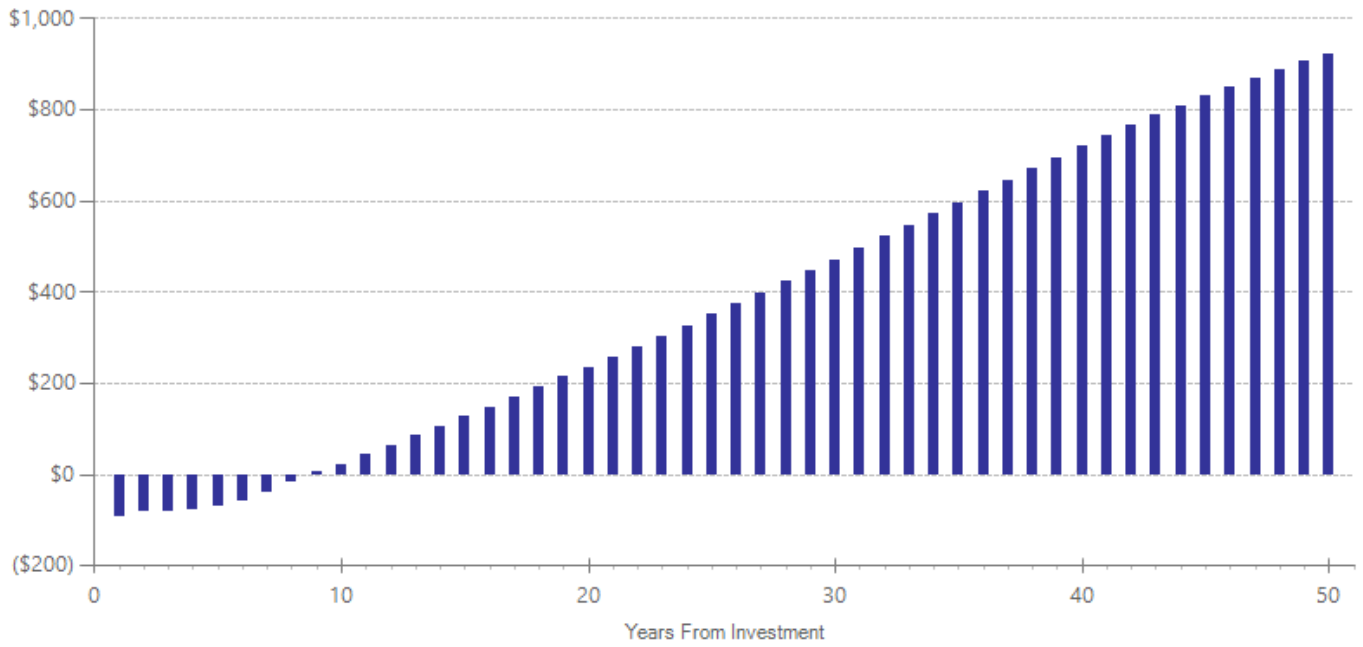
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$63	2012	Present value of net program costs (in 2015 dollars)	($65)
Comparison costs	$0	2012	Cost range (+ or -)	10 %

The per-student cost estimate assumes teachers provide nine hours of instruction over 12 sessions to approximately 26 students per class. The estimate also includes training and material costs provided by the program developer (http://tnd.usc.edu/training.php and http://tnd.usc.edu/to_purchase.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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	6	4467	-0.004	0.034	16	-0.004	0.034	18	-0.017	0.729
Smoking in high school	6	4467	-0.010	0.033	16	-0.010	0.033	18	-0.040	0.420
Cannabis use in high school	6	4467	-0.009	0.034	16	-0.009	0.034	18	-0.031	0.465
Illicit drug use in high school	6	4467	-0.027	0.034	16	-0.027	0.034	18	-0.098	0.058

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Project ALERT

Benefit-cost estimates updated June 2016. Literature review updated July 2014.

Program Description: Project ALERT is a middle/junior high school-based program to prevent tobacco, alcohol, and marijuana use. With over 11 sessions in the 7th grade and three boosters in the 8th grade, the program teaches students 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 Statistics Per Participant

Benefits to:

Taxpayers	$139	Benefit to cost ratio	$3.15
Participants	$228	Benefits minus costs	$322
Others	$165	Chance the program will produce benefits greater than the costs	64 %
Indirect	($59)		
Total benefits	$473		
Net program cost	($150)		
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 (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$7	$17	$3	$28
Labor market earnings associated with high school graduation	$232	$105	$106	$0	$443
Health care associated with smoking	$12	$37	$46	$18	$114
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Costs of higher education	($17)	($11)	($5)	($5)	($38)
Adjustment for deadweight cost of program	$0	$0	$0	($75)	($75)
Totals	$228	$139	$165	($59)	$473

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

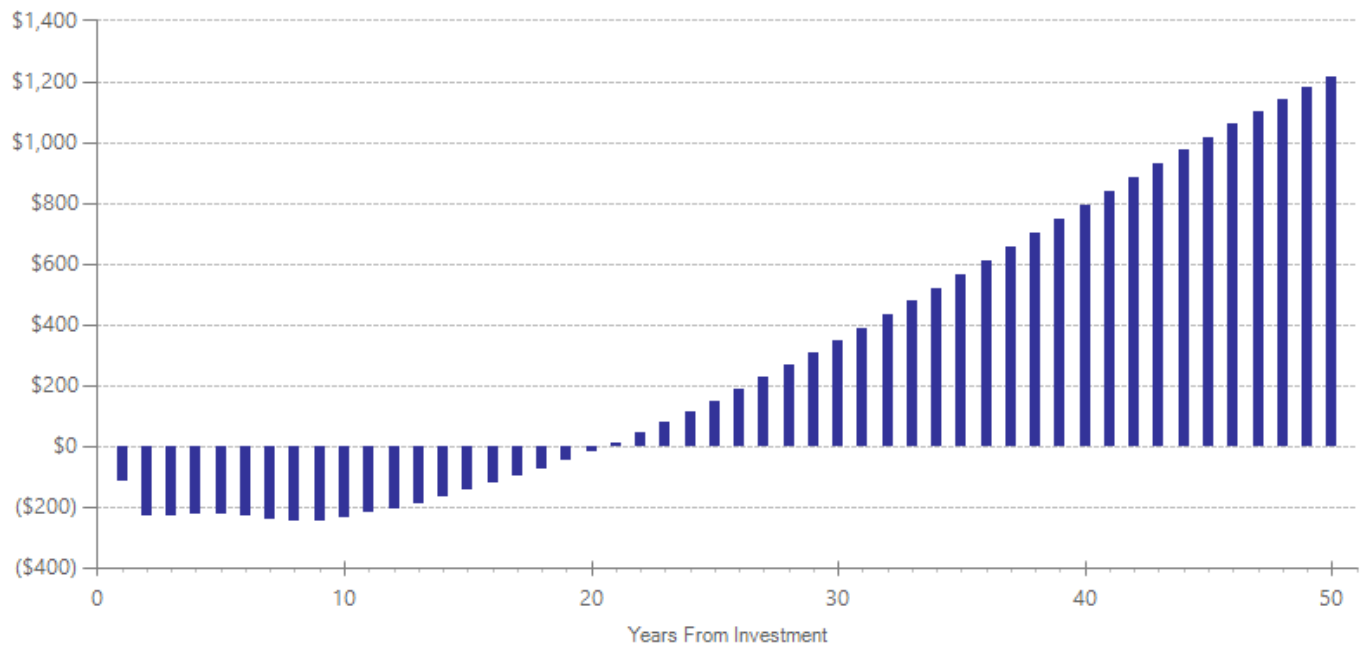
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$60	2002	Present value of net program costs (in 2015 dollars)	($150)
Comparison costs	$0	2002	Cost range (+ or -)	10 %

The cost presented here reflects a total of 14 classroom sessions. The per-participant cost is from Miller, T.R., and Hendrie, D. (2005). How should governments spend the drug prevention dollar: A buyer's guide. In: Stockwell, T., Gruenewald, P., Toumbourou, J., & Loxley, W., (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (pp. 415–431). Chichester, England: John Wiley & Sons., table 7.3.2.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	4	8497	-0.029	0.024	15	-0.029	0.024	18	-0.060	0.181
Smoking in high school	4	8501	-0.018	0.025	15	-0.018	0.025	18	-0.055	0.293
Cannabis use in high school	4	8517	-0.013	0.050	15	-0.013	0.050	18	-0.034	0.580

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

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Coping Power Program

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: The Coping Power Program is a preventive intervention for selected at-risk students. The program typically serves students in late elementary school (e.g. 5th and 6th grade) who exhibit aggressive behavior. The program consists of 34 group sessions for children and 16 group sessions for parents delivered over 16 months plus approximately six brief individual sessions per student. The child sessions target risk factors for substance abuse, delinquency, and conduct problems and use cognitive-behavioral techniques to teach self-regulation, conflict resolution, and social skills. The parent component focuses on stress management, communication, and behavior management.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$690	Benefit to cost ratio	$1.11
Participants	$815	Benefits minus costs	$200
Others	$1,109	Chance the program will produce benefits greater than the costs	50 %
Indirect	($609)		
Total benefits	$2,006		
Net program cost	($1,806)		
Benefits minus cost	$200		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$314	$714	$157	$1,186
Labor market earnings associated with high school graduation	$871	$396	$400	$150	$1,816
K-12 special education	$0	$8	$0	$4	$13
Health care associated with disruptive behavior disorder	$4	$12	$14	$6	$35
Costs of higher education	($60)	($40)	($18)	($20)	($138)
Adjustment for deadweight cost of program	$0	$0	$0	($906)	($905)
Totals	$815	$690	$1,109	($609)	$2,006

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

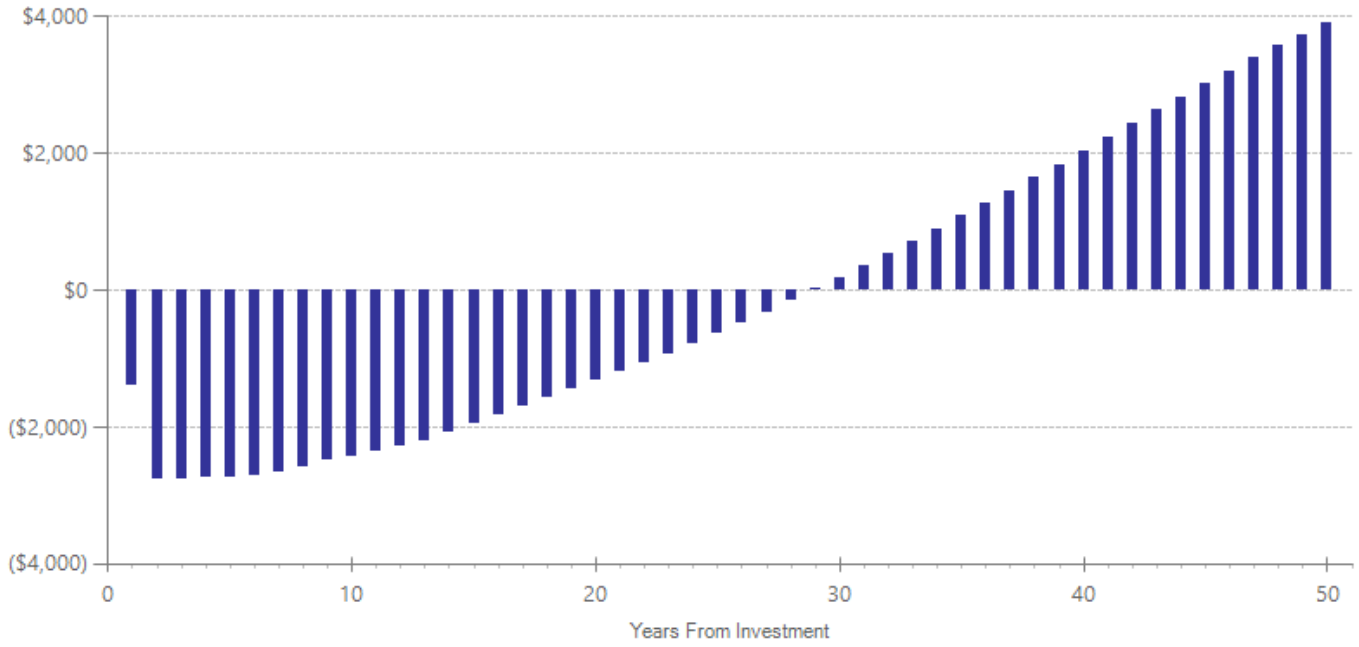
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$919	2015	Present value of net program costs (in 2015 dollars)	($1,806)
Comparison costs	$0	2015	Cost range (+ or -)	10 %

This program typically provides an estimated 61 contact hours over two years including group sessions for parents and children and individual contacts with each student. The per-student costs estimate assumes that a school counselor and a teacher jointly lead each session with groups of six students or parents. We use average compensation costs (including benefits) for counselors and teachers as reported by the Office of the Superintendent of Public Instruction and divide by the number of students per group. The estimate also includes costs for training and materials obtained from Blueprints for Healthy Youth Development and the developer's website (http://www.blueprintsprograms.com/program-costs/coping-power; http://www.copingpower.com/Manuals.aspx).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	2	162	-0.073	0.135	12	-0.073	0.135	22	-0.193	0.155
Grade point average	1	351	0.052	0.128	12	0.052	0.128	12	0.138	0.281
Substance use	2	162	-0.088	0.135	12	-0.088	0.135	22	-0.233	0.087
Externalizing behavior symptoms	2	451	-0.065	0.101	11	-0.031	0.054	14	-0.204	0.328

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Citations Used in the Meta-Analysis

Lochman, J.E., & Wells, K.C. (2003). Effectiveness of the Coping Power program and of classroom intervention with aggressive children: Outcomes at a 1-year follow-up. *Behavior Therapy, 34*(4), 493-515.

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Lochman, J.E., Boxmeyer, C.L., Powell, N.P., Qu, L., Wells, K., & Windle, M. (2012). Coping Power dissemination study: Intervention and special education effects on academic outcomes. *Behavioral Disorders, 37*(3), 192-205.

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School-based BMI screening and parental notification

Benefit-cost estimates updated June 2016. Literature review updated November 2015.

Program Description: The programs included in this review are universal screening programs that measure students' body mass index (BMI) at specified grade levels. Confidential letters are sent home to families to communicate students' weight category and corresponding health risk.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	($15)
Participants	($13)
Others	($2)
Indirect	($17)
Total benefits	($48)
Net program cost	($25)
Benefits minus cost	($73)

Benefit to cost ratio	($1.90)
Benefits minus costs	($73)
Chance the program will produce benefits greater than the costs	50 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with obesity	($8)	($3)	$0	$0	($11)
Health care associated with obesity	($6)	($11)	($2)	($5)	($24)
Adjustment for deadweight cost of program	$0	$0	$0	($13)	($13)
Totals	($13)	($15)	($2)	($17)	($48)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

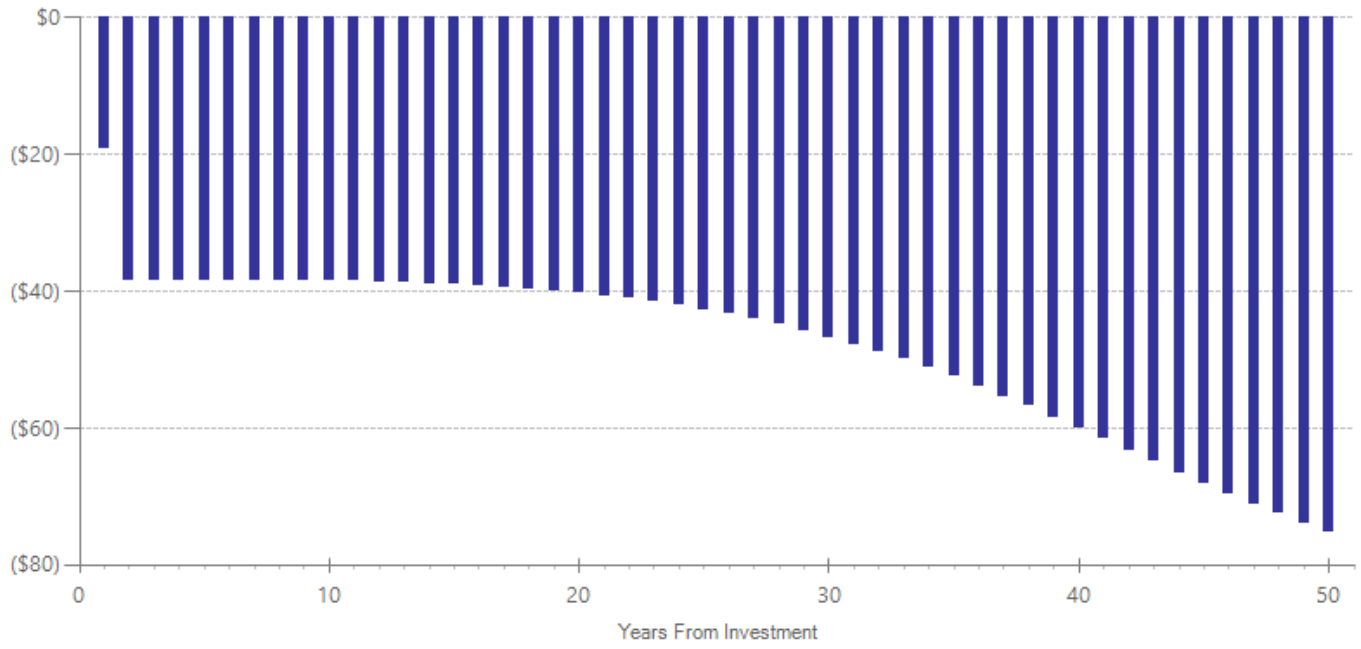
	Annual cost	Year dollars
Program costs	$13	2014
Comparison costs	$0	2014

Summary	
Present value of net program costs (in 2015 dollars)	($25)
Cost range (+ or -)	10 %

We estimated that screening each student takes a school nurse ten minutes. We used the average hourly salary of a registered nurse in Washington State reported by the Bureau of Labor Statistics to estimate the staff costs to implement the program. We increase the average salary by a factor of 1.44 to capture the cost of employee benefits. Based on the implementation costs of the Fit Study (School of Public Health at University of California, Berkeley), we added $3.70 to this amount to the staff costs for the cost of printing and mailing results to parents (personal communication with Jennifer Linchey, University of California, Berkeley, November 2, 2015).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	2	3483707	-0.001	0.001	14	0.000	0.101	16	-0.001	0.209

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

Gee, K.A. (2015). School-based body mass index screening and parental notification in late adolescence: evidence from Arkansas's Act 1220. *Journal of Adolescent Health.*

Madsen, K.A. (2011). School-based body mass index screening and parent notification: a statewide natural experiment. *Archives of Pediatrics & Adolescent Medicine*, *16*(11), 987-92.

Youth advocacy/empowerment programs for tobacco prevention

Benefit-cost estimates updated June 2016. Literature review updated December 2014.

Program Description: Youth advocacy/empowerment programs encourage high school 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 Statistics Per Participant

Benefits to:			
Taxpayers	($39)	Benefit to cost ratio	($7.27)
Participants	($68)	Benefits minus costs	($188)
Others	($44)	Chance the program will produce benefits greater than the costs	37 %
Indirect	($15)		
Total benefits	($165)		
Net program cost	($23)		
Benefits minus cost	($188)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with high school graduation	($69)	($31)	($31)	$0	($132)
Health care associated with smoking	($4)	($11)	($14)	($6)	($34)
Costs of higher education	$5	$3	$2	$2	$12
Adjustment for deadweight cost of program	$0	$0	$0	($11)	($11)
Totals	($68)	($39)	($44)	($15)	($165)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

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[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

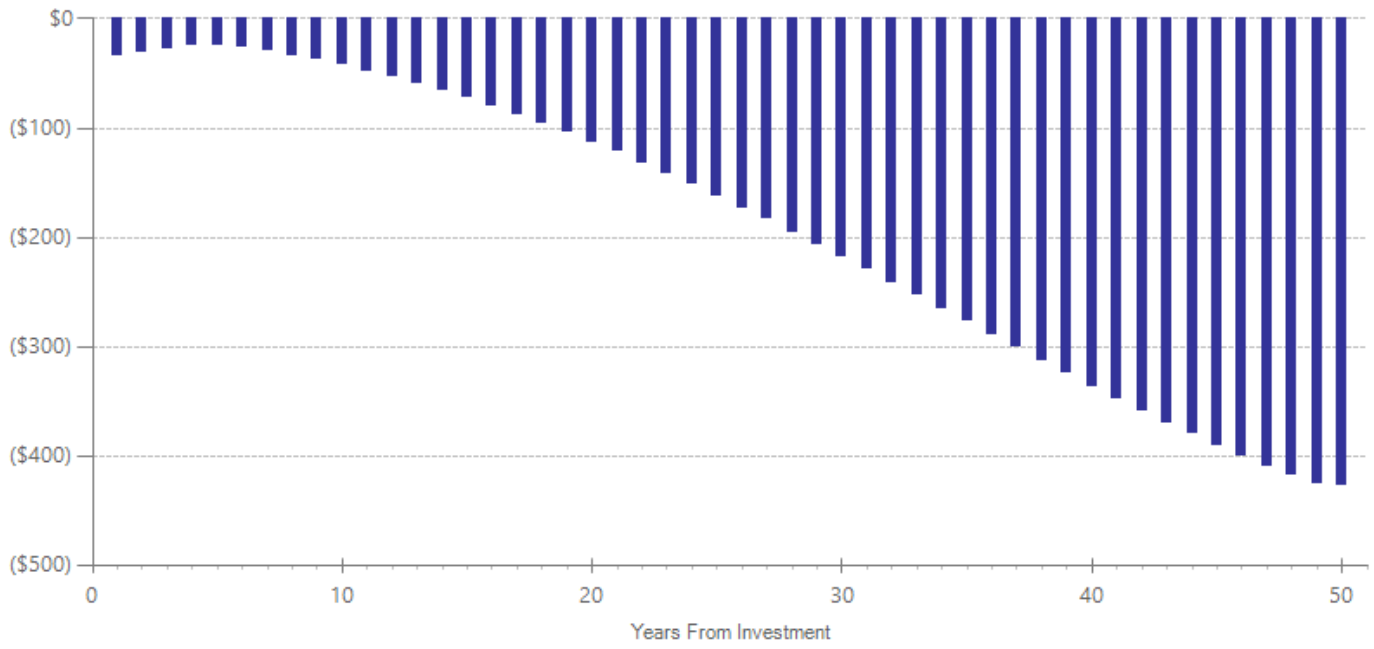
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$86	2014	Present value of net program costs (in 2015 dollars)	($23)
Comparison costs	$63	2014	Cost range (+ or -)	10 %

Costs were calculated for 20 weekly 1.2-hour long sessions, multiplied by the average teacher salary and benefits, plus advocacy materials per class, spread over 25 students.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking in high school	1	367	0.005	0.018	17	0.005	0.018	18	0.014	0.420

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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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.

School-based obesity prevention education

Benefit-cost estimates updated June 2016. Literature review updated November 2015.

Program Description: The school-based obesity prevention education interventions included in this review provided classroom curriculum and instruction on nutrition and physical activity for elementary and middle school students. The programs were taught by classroom or physical education teachers during the school day and did not replace standard curriculum or health classes. The focus of the curriculum varied and included topics such as the importance of nutrition and physical activity, reducing soda consumption, and reducing in-screen time. With the exception of one intervention that took place over a four-year period, the other included programs took place during a single school year.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	($10)	Benefit to cost ratio	($0.69)
Participants	($5)	Benefits minus costs	($197)
Others	($1)	Chance the program will produce benefits greater than the costs	48 %
Indirect	($65)		
Total benefits	($81)		
Net program cost	($116)		
Benefits minus cost	($197)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with obesity	$0	$0	$0	($1)	($1)
Health care associated with obesity	($5)	($10)	($1)	($6)	($22)
Adjustment for deadweight cost of program	$0	$0	$0	($58)	($58)
Totals	($5)	($10)	($1)	($65)	($81)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

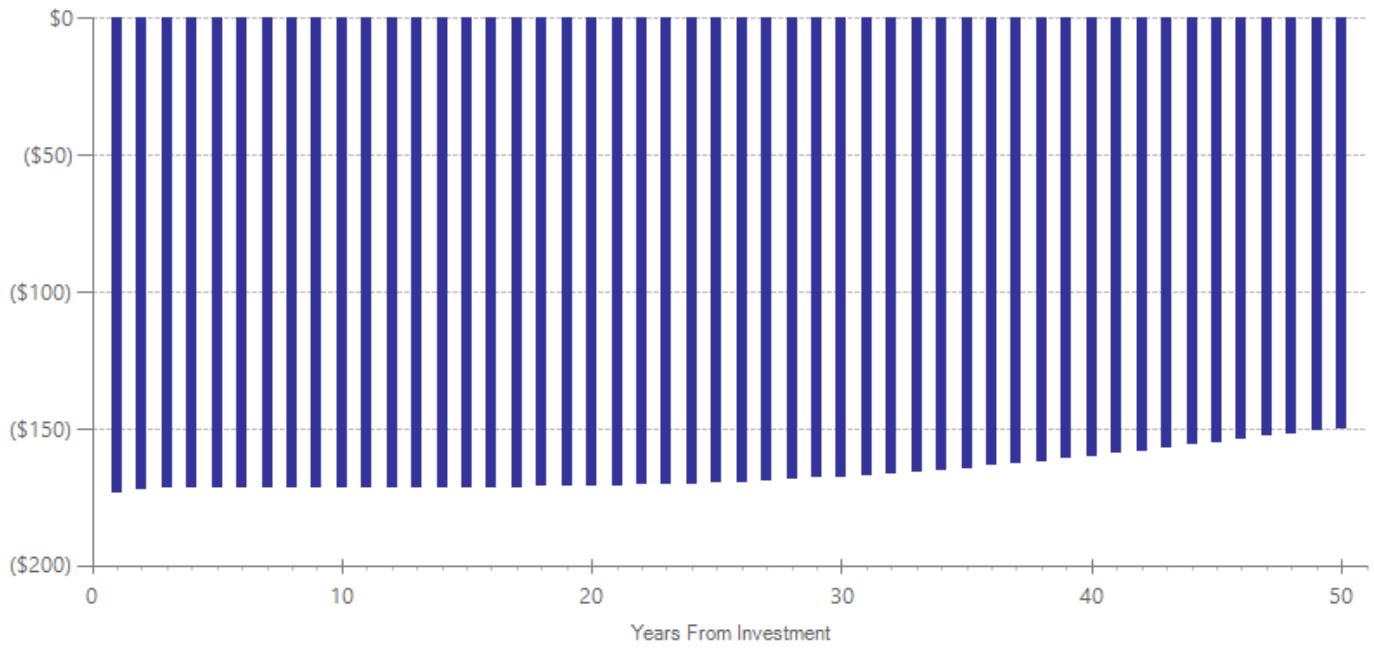
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$116	2014	Present value of net program costs (in 2015 dollars)	($116)
Comparison costs	$0	2014	Cost range (+ or -)	20 %

Most of the programs in the meta-analysis were delivered in a single school year, and required an average of 37.6 hours of teaching and professional development. The per-student cost of the program was calculated by multiplying the teacher hours required by the average K-8th grade teacher's hourly salary and benefits and dividing by the average K-8th grade class size.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	7	1970	-0.063	0.060	11	0.000	0.101	13	-0.063	0.298

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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Citations Used in the Meta-Analysis

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Robinson, T.N. (1999). Reducing children's television viewing to prevent obesity: A randomized controlled trial. *Journal of the American Medical Association, 282*(16), 1561-1567.

Spiegel, S.A. & Foulk, D. (2006). Reducing overweight through a multidisciplinary school-based intervention. *Obesity, 14*(1), 88-96.

Responsive Classroom

Benefit-cost estimates updated June 2016. Literature review updated October 2015.

Program Description: The Responsive Classroom® is an approach to classroom management and instruction in social skills. Teachers and staff receive training and coaching on how to implement the various components of this approach, which include a morning meeting, clear classroom rules and consequences, specific ways to organize space, and family involvement. The effect in our meta-analysis reflects three years of program participation on average.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$154	Benefit to cost ratio	$0.64
Participants	$321	Benefits minus costs	($197)
Others	$137	Chance the program will produce benefits greater than the costs	48 %
Indirect	($269)		
Total benefits	$344		
Net program cost	($541)		
Benefits minus cost	($197)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with test scores	$329	$149	$148	$0	$627
Health care associated with educational attainment	($2)	$9	($9)	$5	$2
Costs of higher education	($5)	($4)	($2)	($2)	($13)
Adjustment for deadweight cost of program	$0	$0	$0	($272)	($272)
Totals	$321	$154	$137	($269)	$344

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

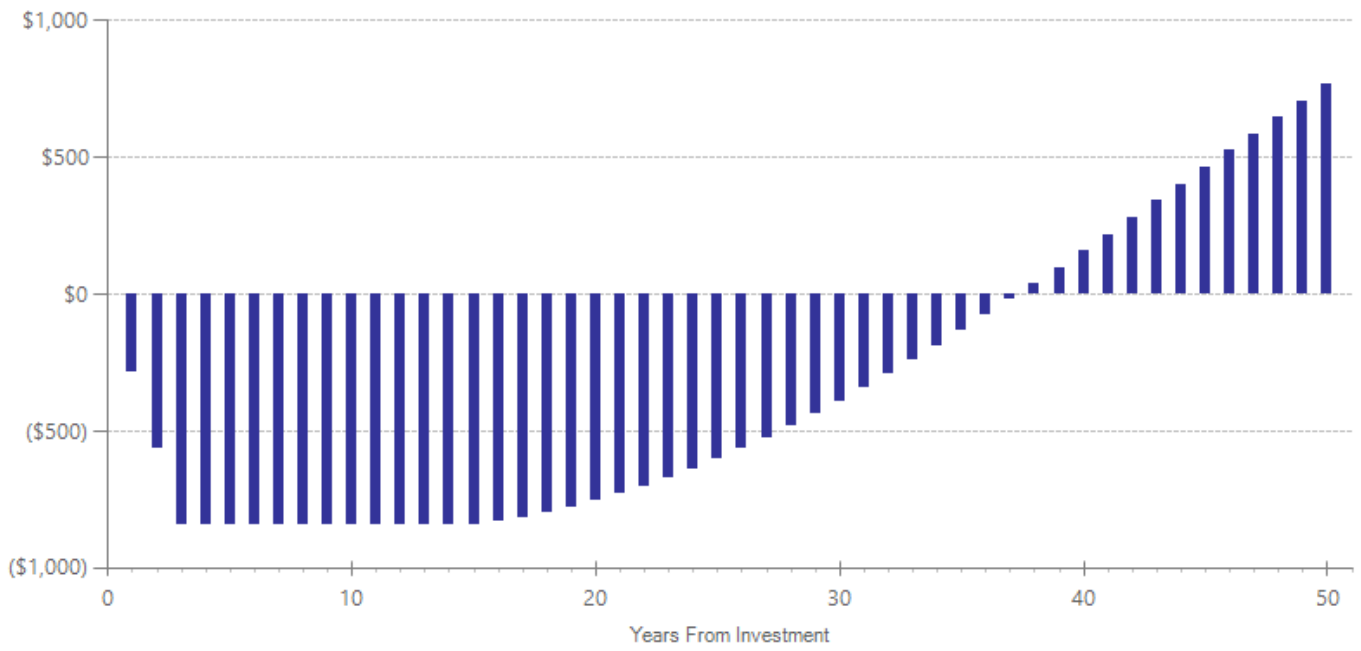
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$183	2013	Present value of net program costs (in 2015 dollars)	($541)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The effect in our meta-analysis reflects three years of program participation. Cost estimates include annual fees, annual contracts, start-up costs, and training costs reported in: Buechler, M. (2002). *Catalog of school reform models*. Portland, Or: Northwest Regional Educational Laboratory. WSIPP converted school costs to per-student costs based on the average number of students per classroom in Washington's prototypical school formula.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Test scores	4	2231	0.011	0.065	7	0.005	0.071	17	0.011	0.870

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Citations Used in the Meta-Analysis

Rimm-Kaufman, S., Fan, X., Chiu Y., & You, W. (2007). The contribution of the Responsive Classroom approach on children's academic achievement: Results from a three year longitudinal study. *Journal of School Psychology, 45*, 401-421.

Rimm-Kaufman, S.E., Larsen, R.A.A., Baroody, A.E., Ko, M., Thomas, J.B., Merritt, E.G., ... & Abry, T. (2014). Efficacy of the Responsive Classroom approach: Results From a 3-year, longitudinal randomized controlled trial. *American Educational Research Journal, 51*(3), 567-603.

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

Benefit-cost estimates updated June 2016. Literature review updated August 2015.

Program Description: Drug Abuse Resistance Education (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 to students in 5th and 6th grade classrooms. The program aims to teach peer resistance skills so that students can say "no" to drugs.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	($153)
Participants	($230)
Others	$106
Indirect	($5)
Total benefits	($281)
Net program cost	($54)
Benefits minus cost	($335)

Benefit to cost ratio	($5.19)
Benefits minus costs	($335)
Chance the program will produce benefits greater than the costs	49 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$14	$32	$7	$53
Labor market earnings associated with high school graduation	$297	$135	$136	$54	$621
Health care associated with smoking	$12	$37	$46	$19	$114
Labor market earnings associated with alcohol abuse or dependence	($512)	($233)	$0	($4)	($749)
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$3
Health care associated with illicit drug abuse or dependence	($15)	($88)	($79)	($44)	($225)
Costs of higher education	($21)	($14)	($7)	($7)	($49)
Adjustment for deadweight cost of program	$9	($4)	($24)	($29)	($48)
Totals	($230)	($153)	$106	($5)	($281)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

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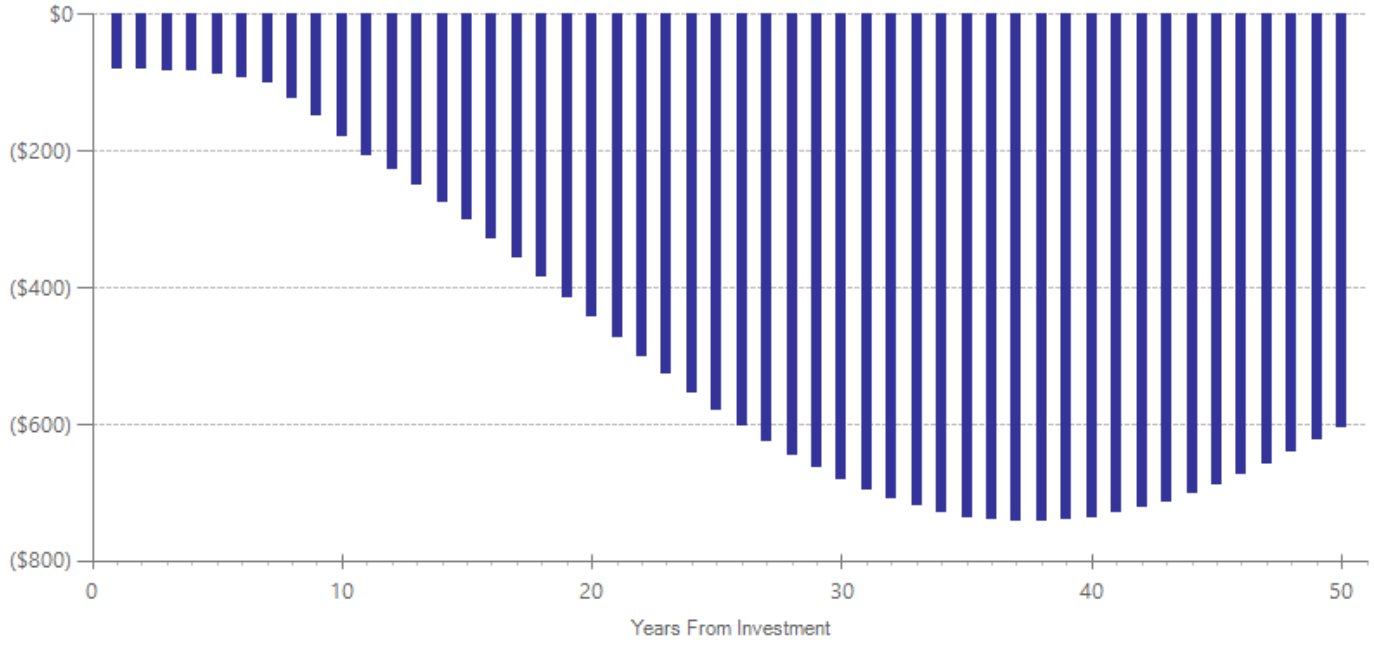
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$54	2014	Present value of net program costs (in 2015 dollars)	($54)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

D.A.R.E. is typically delivered over a 17-week period. Cost of student workbooks ($1.29 per student) and officer training ($700 per officer) are from the D.A.R.E. website, http://www.dare.org/starting-a-dare-program/; other materials ($10 per student) are from Shepard III, E.M. (2001). The economic costs of DARE. Institute of Industrial Relations, Research Paper Number 22. Police officer costs estimated from WSIPP calculations of police officers' salaries (http://www.wsipp.wa.gov/ReportFile/1396/). All estimates are expressed on a per-student basis by dividing by the average class size in Washington (approximately 27 students).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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Rosenbaum, D.P., Flewelling, R.L., Bailey, S.L., & Ringwalt, C.L. (1994). Cops in the classroom: A longitudinal evaluation of drug abuse resistance education (DARE). *Journal of Research in Crime and Delinquency, 31*(1), 3-31.

Project SUCCESS

Benefit-cost estimates updated June 2016. Literature review updated August 2014.

Program Description: Project SUCCESS is a school-based prevention program that focuses on high-risk adolescents. The program's four components include 1) eight sessions of prevention education provided in small groups by a professional counselor; 2) individual and group counseling for selected student; 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 Statistics Per Participant

Benefits to:			
Taxpayers	($28)	Benefit to cost ratio	($1.23)
Participants	$14	Benefits minus costs	($352)
Others	($84)	Chance the program will produce benefits greater than the costs	41 %
Indirect	($96)		
Total benefits	($194)		
Net program cost	($158)		
Benefits minus cost	($352)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	($35)	($85)	($17)	($137)
Labor market earnings associated with smoking	$19	$9	$0	$0	$28
Health care associated with smoking	$1	$2	$3	$1	$7
Property loss associated with alcohol abuse or dependence	$0	$0	($1)	$0	($1)
Costs of higher education	($46)	($31)	($14)	($15)	($107)
Adjustment for deadweight cost of program	$41	$27	$13	($65)	$16
Totals	$14	($28)	($84)	($96)	($194)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

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[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

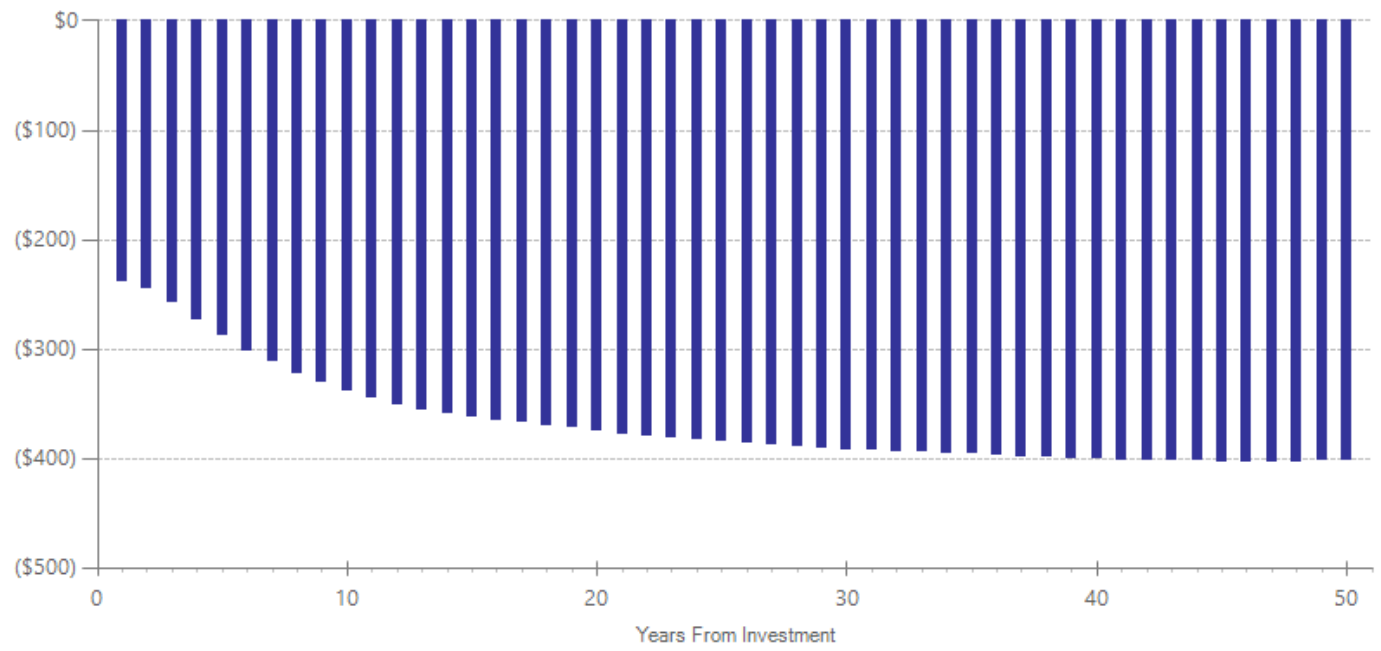
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$155	2013	Present value of net program costs (in 2015 dollars)	($158)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

Project SUCCESS takes place within a single school year. To calculate a per-student 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Regular smoking	1	667	0.000	0.052	17	0.000	0.052	18	0.000	1.000
Alcohol use in high school	1	667	0.020	0.052	17	0.020	0.052	18	0.020	0.698
Smoking in high school	1	161	-0.042	0.321	17	-0.042	0.321	18	-0.127	0.693
Cannabis use in high school	1	667	0.060	0.052	17	0.060	0.052	18	0.060	0.244
Illicit drug use in high school	1	667	0.020	0.052	17	0.020	0.052	18	0.020	0.698

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WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Preschool programs to create a healthy food environment and increase physical activity

Benefit-cost estimates updated June 2016. Literature review updated November 2015.

Program Description: A wide variety of interventions were used in the preschool programs that we reviewed. These included nutrition education for children and parents, additional time engaged in physical activity, and healthier snacks and drinks during the school day. The interventions were conducted in preschools serving children three to six years old.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	($36)	Benefit to cost ratio	($0.93)
Participants	($45)	Benefits minus costs	($478)
Others	($12)	Chance the program will produce benefits greater than the costs	44 %
Indirect	($137)		
Total benefits	($230)		
Net program cost	($248)		
Benefits minus cost	($478)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with obesity	($37)	($17)	$0	($4)	($57)
Health care associated with obesity	($8)	($19)	($12)	($9)	($49)
Adjustment for deadweight cost of program	$0	$0	$0	($124)	($124)
Totals	($45)	($36)	($12)	($137)	($230)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

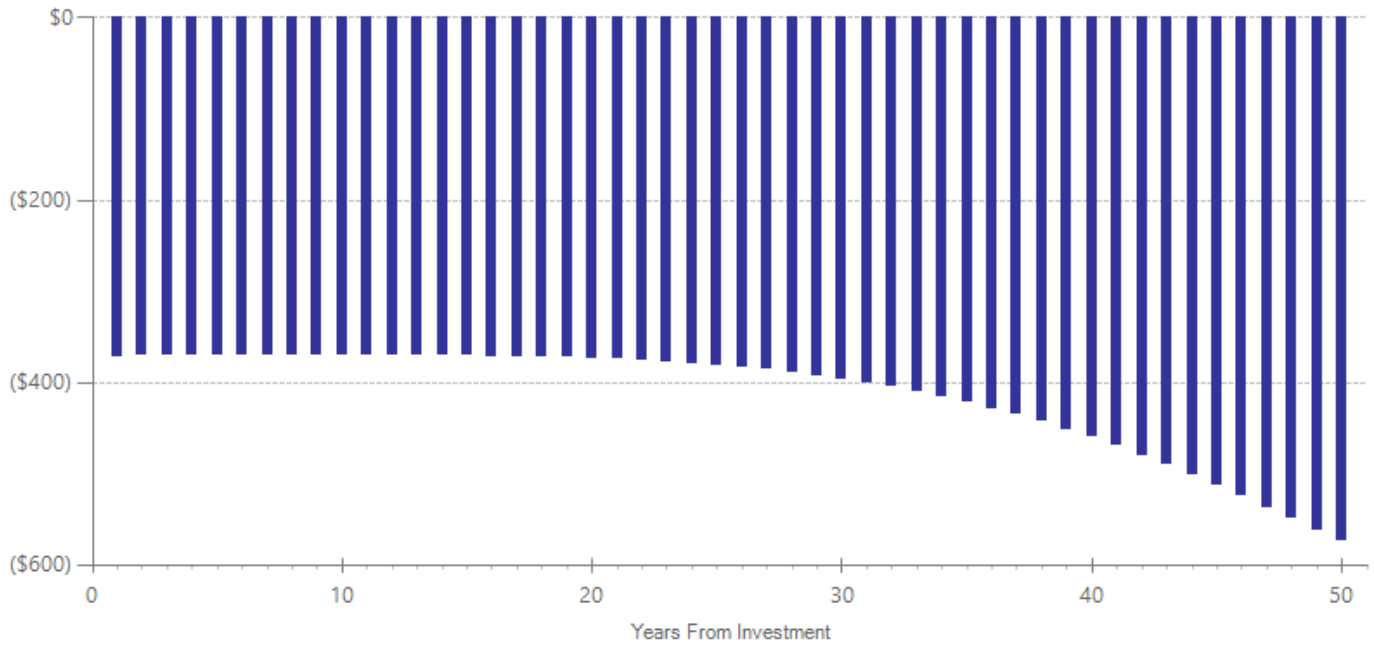
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$247	2014	Present value of net program costs (in 2015 dollars)	($248)
Comparison costs	$0	2014	Cost range (+ or -)	20 %

The programs in this analysis added 123 additional hours of physical activity or nutrition curriculum; we assume that these occur within a single school year. We assumed there was a maximum of 20 students per class and an adult-to-child ratio of 1:10. The per-student cost of the intervention was calculated by multiplying the per-student staff hours required by two staff members whose compensation were the average salary and benefits of a preschool teacher in 2014 in Washington State reported by the Bureau of Labor Statistics.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	12	4490	-0.140	0.039	6	0.000	0.101	8	-0.140	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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InShape

Benefit-cost estimates updated June 2016. Literature review updated June 2014.

Program Description: InShape is a college-based brief motivational interviewing intervention that aims to increase physical activity, 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 25-minute motivational interview with the fitness specialist, and a set of recommendations to increase fitness and health.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	($172)	Benefit to cost ratio	($37.34)
Participants	($320)	Benefits minus costs	($577)
Others	($27)	Chance the program will produce benefits greater than the costs	46 %
Indirect	($43)		
Total benefits	($562)		
Net program cost	($15)		
Benefits minus cost	($577)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$11	$27	$6	$44
Labor market earnings associated with smoking	($306)	($139)	$0	($18)	($463)
Health care associated with smoking	($15)	($45)	($55)	($23)	($137)
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Adjustment for deadweight cost of program	$0	$0	$0	($8)	($8)
Totals	($320)	($172)	($27)	($43)	($562)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

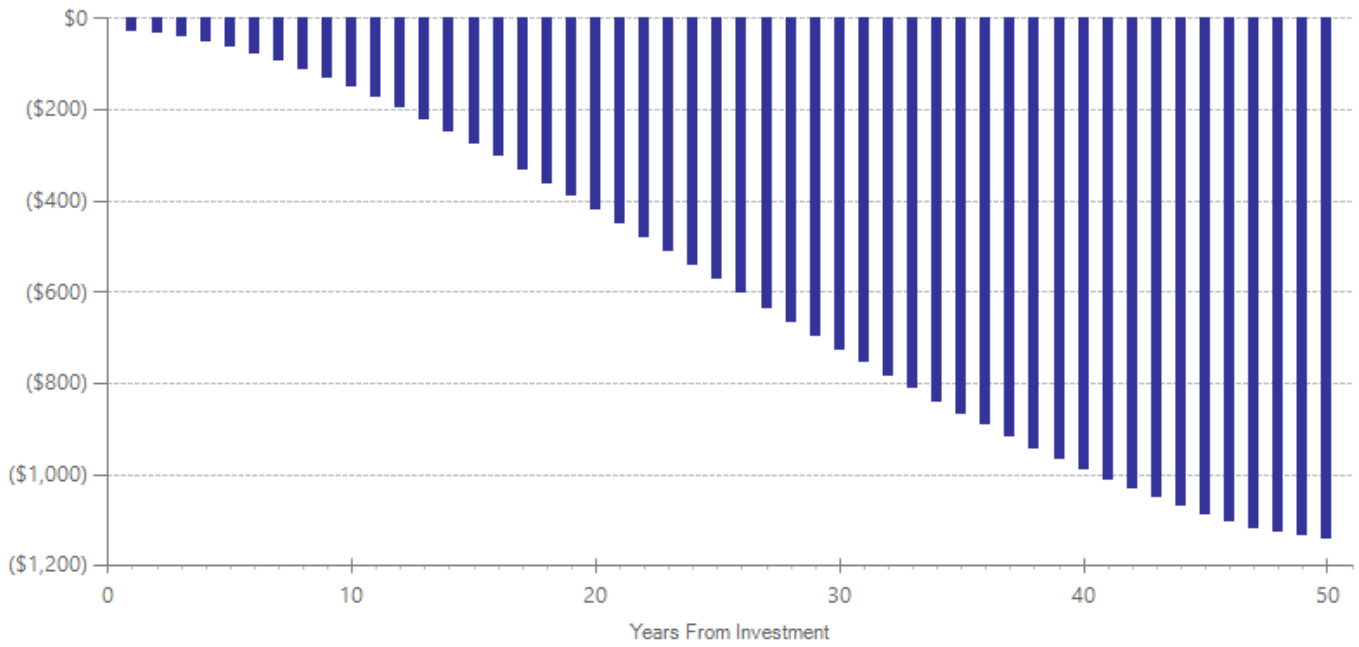
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$15	2014	Present value of net program costs (in 2015 dollars)	($15)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

The per-participant cost estimate assumes college health clinic staff lead a 25-minute motivational interview session and includes training costs obtained from Blueprints for Healthy Youth Development (http://www.blueprintsprograms.com/program-costs/inshape-prevention-plus-wellness).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Regular smoking	1	140	0.010	0.119	19	0.010	0.119	29	0.032	0.789
Cannabis use	1	140	0.031	0.119	19	0.031	0.119	29	0.093	0.433
Alcohol use	1	140	-0.067	0.119	19	-0.067	0.119	29	-0.203	0.088
Youth binge drinking	1	140	-0.027	0.119	19	-0.027	0.119	29	-0.082	0.490

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Citations Used in the Meta-Analysis

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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.

Nurse Family Partnership

Benefit-cost estimates updated June 2016. 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 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 Statistics Per Participant

Benefits to:

Taxpayers	$6,518	Benefit to cost ratio	$1.61
Participants	$8,747	Benefits minus costs	$6,159
Others	$4,475	Chance the program will produce benefits greater than the costs	58 %
Indirect	($3,531)		
Total benefits	$16,208		
Net program cost	($10,049)		
Benefits minus cost	$6,159		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$1,268	$2,899	$630	$4,797
Child abuse and neglect	$1,241	$389	$0	$193	$1,823
K-12 grade repetition	$0	($46)	$0	($23)	($69)
K-12 special education	$0	($166)	$0	($82)	($248)
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$1
Health care associated with disruptive behavior disorder	$4	$13	$16	$6	$39
Labor market earnings associated with child abuse & neglect	$4,934	$2,241	$0	$177	$7,351
Costs of higher education	($207)	($245)	($78)	($122)	($652)
Subtotals	$5,972	$3,454	$2,839	$779	$13,044
From secondary participant					
Crime	$0	$171	$453	$85	$710
Labor market earnings associated with high school graduation	$3,739	$1,698	$1,705	$0	$7,143
Public assistance	($277)	$652	$0	$324	$698
Health care associated with educational attainment	($110)	$403	($441)	$200	$52
Food assistance	($359)	$397	$0	$197	$236
Costs of higher education	($219)	($258)	($82)	($129)	($687)
Subtotals	$2,774	$3,063	$1,636	$678	$8,152
Adjustment for deadweight cost of program	$0	$1	$0	($4,989)	($4,987)
Totals	$8,747	$6,518	$4,475	($3,531)	$16,208

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

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[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

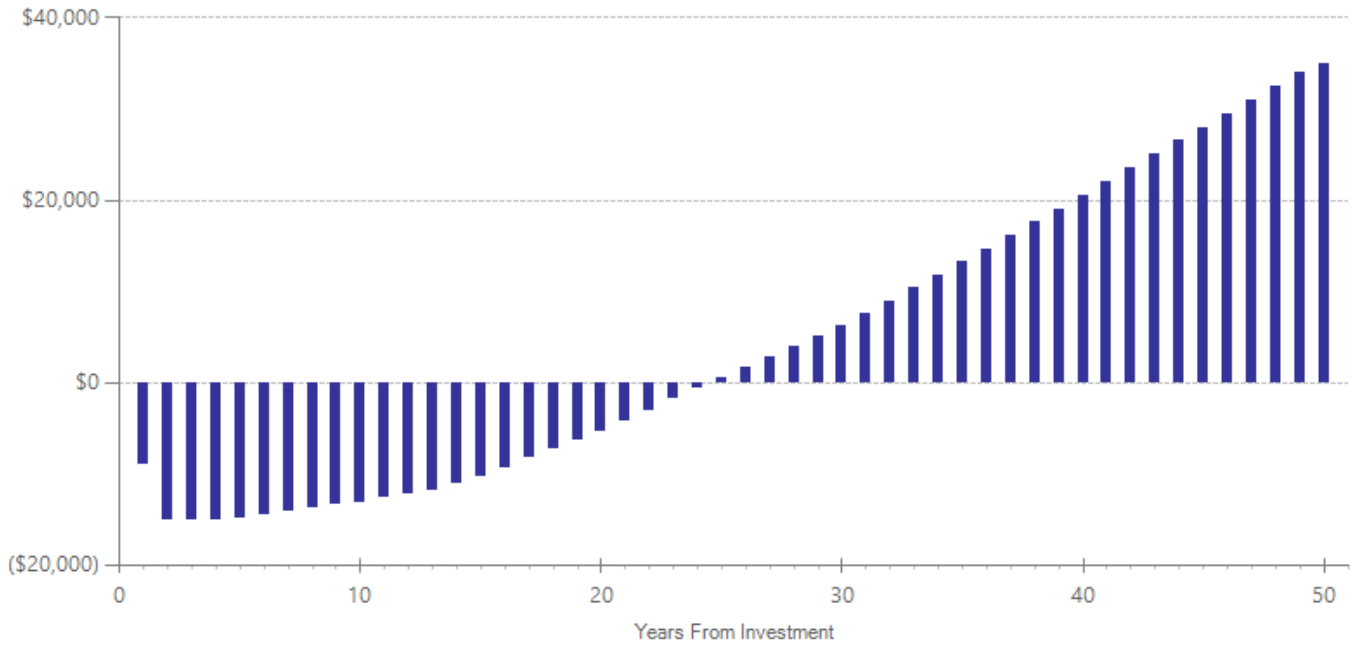
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$5,383	2007	Present value of net program costs (in 2015 dollars)	($10,049)
Comparison costs	$0	2007	Cost range (+ or -)	10 %

The number of nurse visits participants received in the studies in our meta-analysis varied from 27 to 33 on average, spread over about a two-year period. We based our average annual per-family cost on expenditures per family and average length of program participation in Washington State, provided by Kristen Rogers at Nurse Family Partnership, Northwest Regional Office July, 2008.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Crime	Secondary	2	266	-0.034	0.114	31	-0.034	0.114	41	-0.265	0.472
Crime	Primary	1	37	-0.252	0.209	15	-0.252	0.209	25	-0.700	0.001
High school graduation	Secondary	2	401	0.035	0.086	23	0.035	0.086	23	0.097	0.271
Test scores	Primary	3	368	0.021	0.067	10	0.014	0.073	17	0.059	0.374
Child abuse and neglect	Primary	2	206	-0.355	0.141	15	-0.355	0.141	17	-0.626	0.012
K-12 grade repetition	Primary	3	313	0.048	0.102	12	0.048	0.102	17	0.130	0.407
K-12 special education	Primary	3	313	0.023	0.122	12	0.023	0.122	17	0.030	0.894
Disruptive behavior disorder symptoms	Primary	2	329	-0.075	0.076	12	-0.036	0.042	15	-0.208	0.006
Public assistance	Secondary	3	470	-0.054	0.059	28	-0.054	0.059	38	-0.191	0.086
Substance abuse	Secondary	3	470	-0.080	0.128	28	-0.080	0.128	38	-0.274	0.377
Employment	Secondary	3	423	0.036	0.062	26	0.036	0.062	36	0.120	0.176
Internalizing symptoms	Primary	3	526	-0.083	0.079	12	-0.060	0.066	14	-0.229	0.005
Food assistance	Secondary	3	470	-0.054	0.059	28	-0.054	0.059	38	-0.223	0.143

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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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.

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Parents as Teachers

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$3,014
Participants	$5,890
Others	$685
Indirect	($745)
Total benefits	$8,843
Net program cost	($2,688)
Benefits minus cost	$6,156

Benefit to cost ratio	$3.29
Benefits minus costs	$6,156
Chance the program will produce benefits greater than the costs	67 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$223	$500	$111	$834
Child abuse and neglect	$1,209	$380	$0	$189	$1,777
K-12 grade repetition	$0	$42	$0	$21	$62
K-12 special education	$0	$191	$0	$95	$286
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$1
Health care associated with PTSD	$64	$196	$242	$97	$599
Labor market earnings associated with child abuse & neglect	$4,774	$2,168	$0	$173	$7,115
Costs of higher education	($157)	($185)	($59)	($92)	($493)
Adjustment for deadweight cost of program	$0	$0	$0	($1,339)	($1,339)
Totals	$5,890	$3,014	$685	($745)	$8,843

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

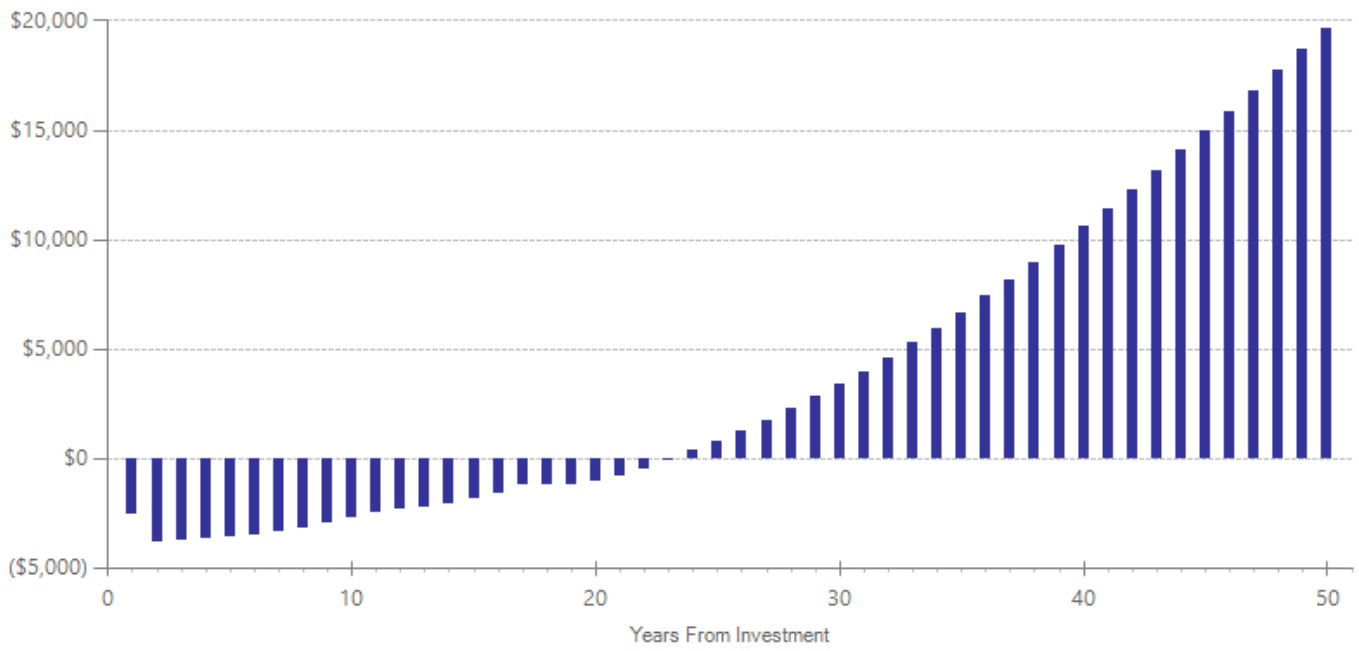
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$1,450	2003	Present value of net program costs (in 2015 dollars)	($2,688)
Comparison costs	$0	2003	Cost range (+ 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. To support that analysis, WSIPP communicated with Nicole Thomson at the National Center (July 2014), who provided assistance in gathering some details not reported in the original studies (i.e., how long families typically stayed with the program).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
High school graduation	Primary	1	79	-0.018	0.189	22	-0.018	0.189	22	-0.018	0.926
Test scores	Secondary	5	625	0.086	0.084	4	0.018	0.092	17	0.086	0.302
Child abuse and neglect	Secondary	1	149	-0.378	0.537	3	-0.378	0.537	13	-0.378	0.482
Repeat teen birth	Primary	1	77	0.089	0.215	22	0.089	0.215	22	0.089	0.678

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Other home visiting programs for at-risk mothers and children

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$4,415	Benefit to cost ratio	$1.89
Participants	$7,869	Benefits minus costs	$5,205
Others	$824	Chance the program will produce benefits greater than the costs	63 %
Indirect	($2,032)		
Total benefits	$11,075		
Net program cost	($5,870)		
Benefits minus cost	$5,205		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with major depression	$646	$293	$0	$7	$946
Health care associated with major depression	$30	$92	$114	$46	$282
Public assistance	($253)	$595	$0	$298	$640
Subtotals	$423	$980	$114	$351	$1,868
From secondary participant					
Crime	$0	$240	$478	$121	$839
Child abuse and neglect	$1,521	$70	$0	$35	$1,627
Out-of-home placement	$0	$74	$0	$37	$111
K-12 grade repetition	$0	$52	$0	$26	$77
K-12 special education	$0	$242	$0	$122	$364
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Health care associated with PTSD	$80	$245	$304	$124	$753
Labor market earnings associated with child abuse & neglect	$6,039	$2,743	$0	$216	$8,998
Costs of higher education	($195)	($231)	($73)	($116)	($615)
Subtotals	$7,446	$3,435	$710	$565	$12,156
Adjustment for deadweight cost of program	$0	$0	$0	($2,948)	($2,948)
Totals	$7,869	$4,415	$824	($2,032)	$11,075

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

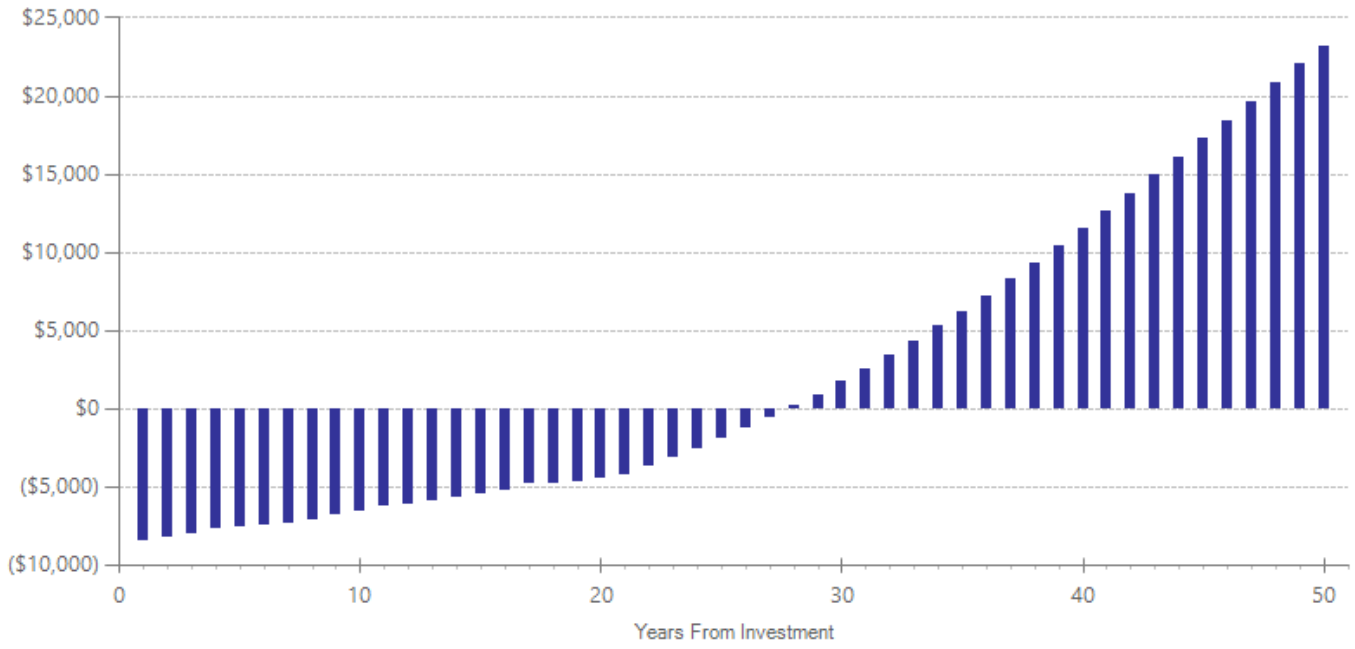
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$5,368	2008	Present value of net program costs (in 2015 dollars)	($5,870)
Comparison costs	$0	2008	Cost range (+ or -)	10 %

Costs are based on a weighted average of per-family costs published in Black, M.M., Dubowitz, H. Hutcheson, J., Berenson-Howard, J., & Starr Jr., R.H. (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., Grant, T.M., Streissguth, A.P., & Sampson, P.D. (1999). Intervention with high-risk alcohol and drug-abusing mothers: II. Three-year findings from the Seattle Model of Paraprofessional Advocacy.*Journal of Community Psychology, 27*(1), 19-38.; and Hardy, J.B. & 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
High school graduation	Primary	1	392	0.062	0.093	22	0.062	0.093	22	0.062	0.504
Test scores	Secondary	6	153	0.252	0.122	4	0.053	0.134	17	0.325	0.009
Child abuse and neglect	Secondary	11	667	-0.448	0.219	10	-0.448	0.219	17	-0.448	0.041
Out-of-home placement	Secondary	6	330	-0.107	0.226	10	-0.107	0.226	17	-0.107	0.636
Public assistance	Primary	1	184	-0.041	0.135	22	-0.041	0.135	32	-0.041	0.761
Major depressive disorder	Primary	4	249	-0.062	0.094	22	-0.032	0.115	23	-0.062	0.508
Repeat teen pregnancy	Primary	6	575	0.078	0.080	19	0.078	0.080	19	0.071	0.371
Repeat teen birth	Primary	6	650	-0.109	0.141	19	-0.109	0.141	19	-0.109	0.437

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Family-based tobacco and substance use prevention

Benefit-cost estimates updated June 2016. 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 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 Statistics Per Participant

Benefits to:

Taxpayers	$1,315
Participants	$2,202
Others	$1,535
Indirect	$57
Total benefits	$5,109
Net program cost	($181)
Benefits minus cost	$4,928

Benefit to cost ratio	$28.17
Benefits minus costs	$4,928
Chance the program will produce benefits greater than the costs	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$40	$96	$20	$156
Labor market earnings associated with high school graduation	$2,243	$1,019	$1,032	$0	$4,294
Health care associated with smoking	$119	$364	$451	$182	$1,115
Property loss associated with alcohol abuse or dependence	$3	$0	$6	$0	$10
Costs of higher education	($163)	($108)	($50)	($54)	($375)
Adjustment for deadweight cost of program	$0	$0	$0	($91)	($90)
Totals	$2,202	$1,315	$1,535	$57	$5,109

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

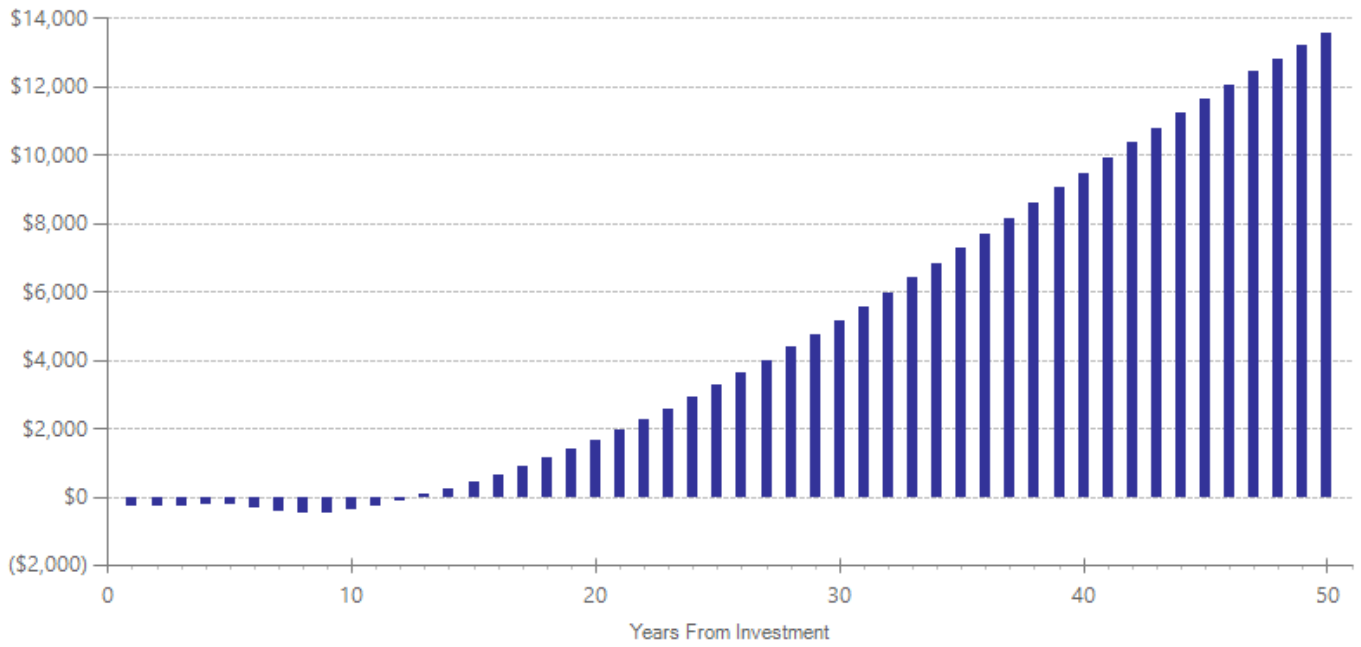
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$140	2001	Present value of net program costs (in 2015 dollars)	($181)
Comparison costs	$0	2001	Cost range (+ or -)	10 %

These programs typically last one year or less. Per-family cost from Bauman, K.E., Foshee, V.A., Ennett, S.T., Hicks, K.A., Pemberton, M. (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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Initiation of sexual activity	2	84	-0.016	0.203	16	-0.016	0.203	18	-0.017	0.970
Alcohol use in high school	3	615	-0.167	0.056	15	-0.167	0.056	18	-0.172	0.002
Smoking in high school	3	615	-0.179	0.057	15	-0.179	0.057	18	-0.179	0.002
Cannabis use in high school	2	84	-0.061	0.215	16	-0.061	0.215	18	-0.162	0.654
Illicit drug use in high school	2	84	-0.140	0.369	16	-0.140	0.369	18	-0.361	0.372

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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

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Parent Management Training - Oregon Model (Prevention population)

Benefit-cost estimates updated June 2016. Literature review updated May 2015.

Program Description: Parent Management Training—Oregon Model (PMTO) is a family-based program that teaches parents to apply five parenting practices: skill encouragement, appropriate discipline, monitoring, problem solving, and positive involvement. This program can be delivered in a group format or an individual family therapy format; our analysis included both types. This analysis focuses on the use of PMTO to prevent behavior problems. In the evaluations we reviewed, the program was tested in two populations: 1) elementary school aged boys being raised by single mothers and 2) Latino boys and girls in middle school.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$1,427	Benefit to cost ratio	$7.86
Participants	$2,037	Benefits minus costs	$4,458
Others	$1,529	Chance the program will produce benefits greater than the costs	60 %
Indirect	$114		
Total benefits	$5,108		
Net program cost	($650)		
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 (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$400	$891	$201	$1,491
Labor market earnings associated with high school graduation	($46)	($21)	($21)	$0	($88)
K-12 grade repetition	$0	($1)	$0	($1)	($2)
K-12 special education	$0	$6	$0	$3	$9
Health care associated with disruptive behavior disorder	$4	$11	$13	$5	$33
Costs of higher education	$3	$2	$1	$1	$8
Subtotals	($39)	$397	$884	$210	$1,452
From secondary participant					
Labor market earnings associated with major depression	$986	$448	$0	$9	$1,443
Health care associated with major depression	$40	$123	$152	$62	$376
Subtotals	$1,026	$570	$152	$71	$1,820
Adjustment for deadweight cost of program	$1,049	$460	$494	($167)	$1,836
Totals	$2,037	$1,427	$1,529	$114	$5,108

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

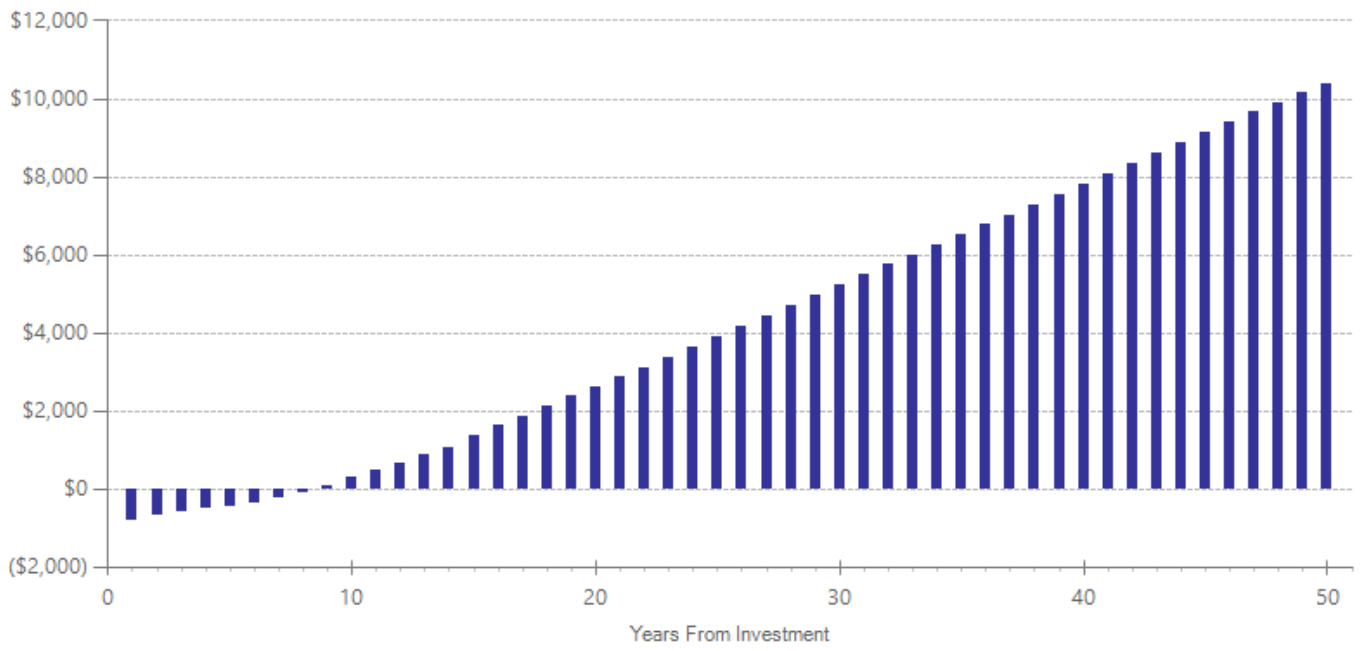
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$619	2011	Present value of net program costs (in 2015 dollars)	($650)
Comparison costs	$0	2011	Cost range (+ or -)	10 %

This program was delivered in a group format and an individual family therapy format. An average of 5.7 staff hours were required to deliver the program to the families in the evaluations that we reviewed. The families in the comparison groups received no services. The type of provider varied widely depending on the delivery format and specific setting. We estimated the hourly staff costs from the reimbursement rates of therapeutic psychoeducation in the community for a non-disabled population, based on actuarial tables reported for disabled adults in Mercer (2013) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Externalizing behavior symptoms	Primary	2	140	-0.062	0.156	9	-0.030	0.082	12	-0.123	0.521
Internalizing symptoms	Primary	2	134	0.029	0.162	9	0.021	0.127	11	0.056	0.712
Crime	Primary	1	147	-0.099	0.146	18	-0.099	0.146	28	-0.177	0.225
Major depressive disorder	Secondary	1	133	-0.132	0.151	35	-0.069	0.476	37	-0.236	0.118

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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Citations Used in the Meta-Analysis

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Strengthening Families for Parents and Youth 10-14

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$1,076
Participants	$2,106
Others	$1,336
Indirect	($392)
Total benefits	$4,126
Net program cost	($825)
Benefits minus cost	$3,301

Benefit to cost ratio	$5.00
Benefits minus costs	$3,301
Chance the program will produce benefits greater than the costs	71 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$148	$344	$74	$566
Labor market earnings associated with high school graduation	$2,265	$1,029	$1,037	$0	$4,331
K-12 grade repetition	$0	$5	$0	$2	$7
K-12 special education	$0	$1	$0	$0	$1
Property loss associated with alcohol abuse or dependence	$2	$0	$3	$0	$5
Health care associated with disruptive behavior disorder	$0	$1	$1	$1	$3
Costs of higher education	($161)	($107)	($50)	($54)	($372)
Adjustment for deadweight cost of program	$0	$0	$0	($415)	($415)
Totals	$2,106	$1,076	$1,336	($392)	$4,126

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

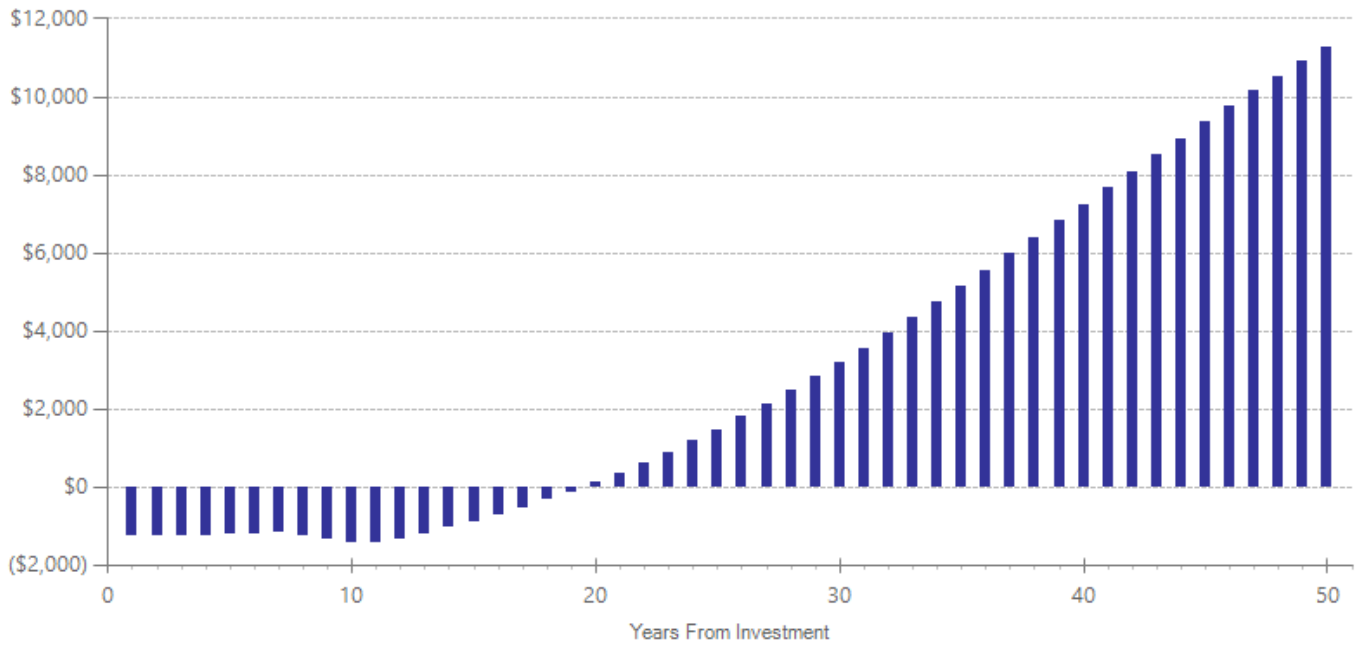
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$754	2009	Present value of net program costs (in 2015 dollars)	($825)
Comparison costs	$0	2009	Cost range (+ or -)	10 %

Costs are based on unit costs provided in Suter, C. (2010). *Economic Evaluation of a Community-Based, Family-Skills Prevention Program* (Master's Thesis). Washington State University. Our estimate includes Suter's total cost per program, divided by average number of families per program in the 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	1	153	-0.128	0.184	13	-0.128	0.184	18	-0.387	0.036
Disruptive behavior disorder symptoms	2	284	-0.007	0.103	13	-0.003	0.053	16	-0.055	0.741
Alcohol use in high school	1	152	-0.069	0.235	15	-0.069	0.235	18	-0.210	0.359
Smoking in high school	1	152	-0.172	0.219	15	-0.172	0.219	18	-0.523	0.019
Cannabis use in high school	1	152	-0.288	0.323	15	-0.288	0.323	18	-0.874	0.011
Illicit drug use in high school	1	151	-0.105	0.152	15	-0.105	0.152	18	-0.317	0.038
Internalizing symptoms	2	192	-0.112	0.102	13	-0.082	0.086	15	-0.339	0.001

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An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Gottfredson, D., Kumpfer, K., Polizzi-Fox, D., Wilson, D., Puryear, V., Beatty, P., & Vilmenay, M. (2006). The Strengthening Washington D.C. Families Project: A randomized effectiveness trial of family-based prevention. *Prevention Science, 7*(1), 57-74.

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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 June 2016. Literature review updated December 2014.

Program Description: Computer-based prevention programs use technology to deliver interactive materials to youth that are designed to teach about the dangers of drug and tobacco use, encourage resistance skills, and change attitudes towards substance 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 review.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$700	Benefit to cost ratio	$38.66
Participants	$1,167	Benefits minus costs	$2,643
Others	$801	Chance the program will produce benefits greater than the costs	70 %
Indirect	$46		
Total benefits	$2,713		
Net program cost	($70)		
Benefits minus cost	$2,643		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	($10)	($25)	($5)	($41)
Labor market earnings associated with high school graduation	($157)	($71)	($72)	$0	($301)
Health care associated with smoking	$71	$218	$270	$109	$667
Property loss associated with alcohol abuse or dependence	$1	$0	$3	$0	$4
Health care associated with cannabis abuse or dependence	($1)	($3)	($4)	($2)	($9)
Costs of higher education	$11	$8	$3	$4	$26
Adjustment for deadweight cost of program	$1,242	$559	$625	($60)	$2,366
Totals	$1,167	$700	$801	$46	$2,713

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

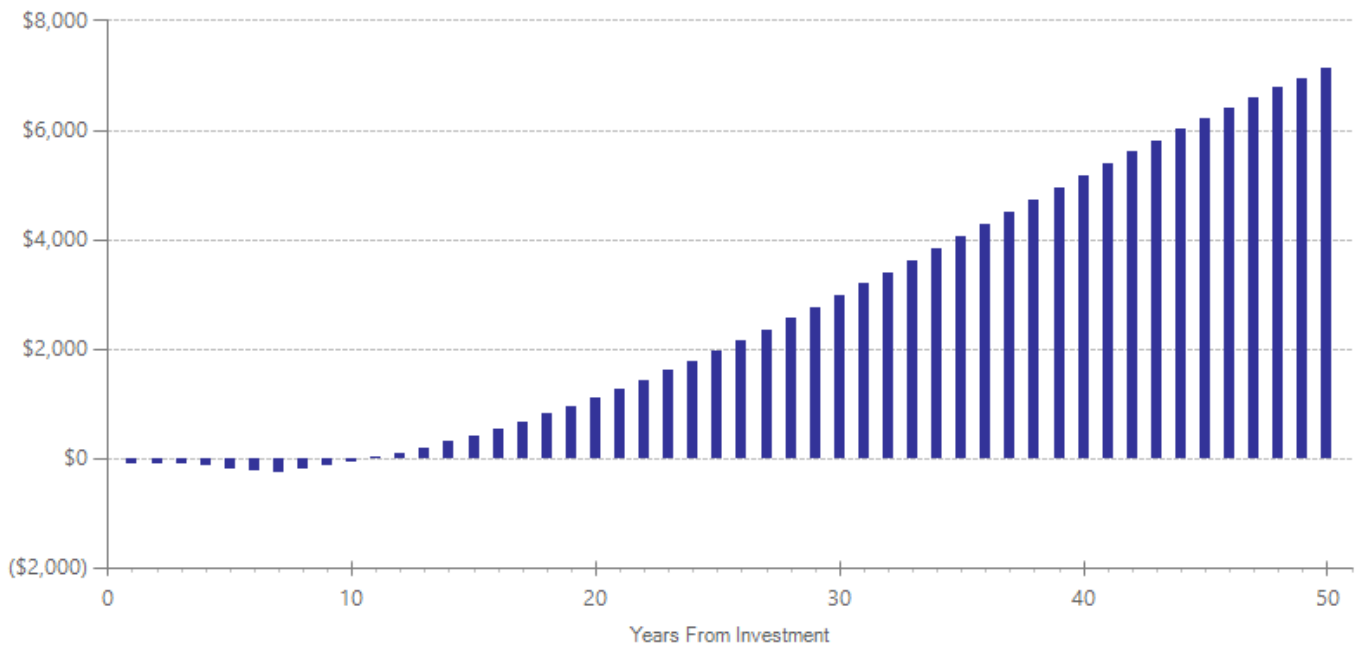
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$68	2012	Present value of net program costs (in 2015 dollars)	($70)
Comparison costs	$0	2012	Cost range (+ or -)	10 %

These programs typically last less than one year. Costs were based on cost information for tobacco cessation website development as reported in 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*.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	1	270	-0.068	0.104	18	-0.068	0.104	18	-0.068	0.513
Smoking in high school	4	5973	-0.102	0.100	16	-0.102	0.100	18	-0.102	0.308
Cannabis use in high school	1	270	0.017	0.104	18	0.017	0.104	18	0.017	0.868

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

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Citations Used in the Meta-Analysis

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Family Matters

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: This is a family-focused prevention program consisting of four booklets, describing activities for parents and youth to complete, mailed to participating families. Each booklet covers a different topic. The books are titled "Why Families Matter," "Helping Families Matter to Teens," "Alcohol and Tobacco Rules Are Family Matters," and "Nonfamily Influences That Matter." Two weeks after each booklet is mailed, parents receive a phone call from a health educator to encourage completion of activities. The average family completes the program over the course of several months.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$474	Benefit to cost ratio	$9.19
Participants	$796	Benefits minus costs	$1,585
Others	$553	Chance the program will produce benefits greater than the costs	74 %
Indirect	($44)		
Total benefits	$1,779		
Net program cost	($194)		
Benefits minus cost	$1,585		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$14	$34	$7	$55
Labor market earnings associated with high school graduation	$812	$369	$373	$0	$1,554
Health care associated with smoking	$43	$131	$162	$66	$401
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$3
Costs of higher education	($60)	($40)	($18)	($20)	($138)
Adjustment for deadweight cost of program	$0	$0	$0	($97)	($97)
Totals	$796	$474	$553	($44)	$1,779

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

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[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$140	1997	Present value of net program costs (in 2015 dollars)	($194)
Comparison costs	$0	1997	Cost range (+ or -)	10 %

Per-participant cost based on cost analysis of 658 families by Bauman, et al. (2001) Family Matters: A family-directed program designed to prevent adolescent tobacco and alcohol use. Health Promotion Practice, 2(2), 81-96.

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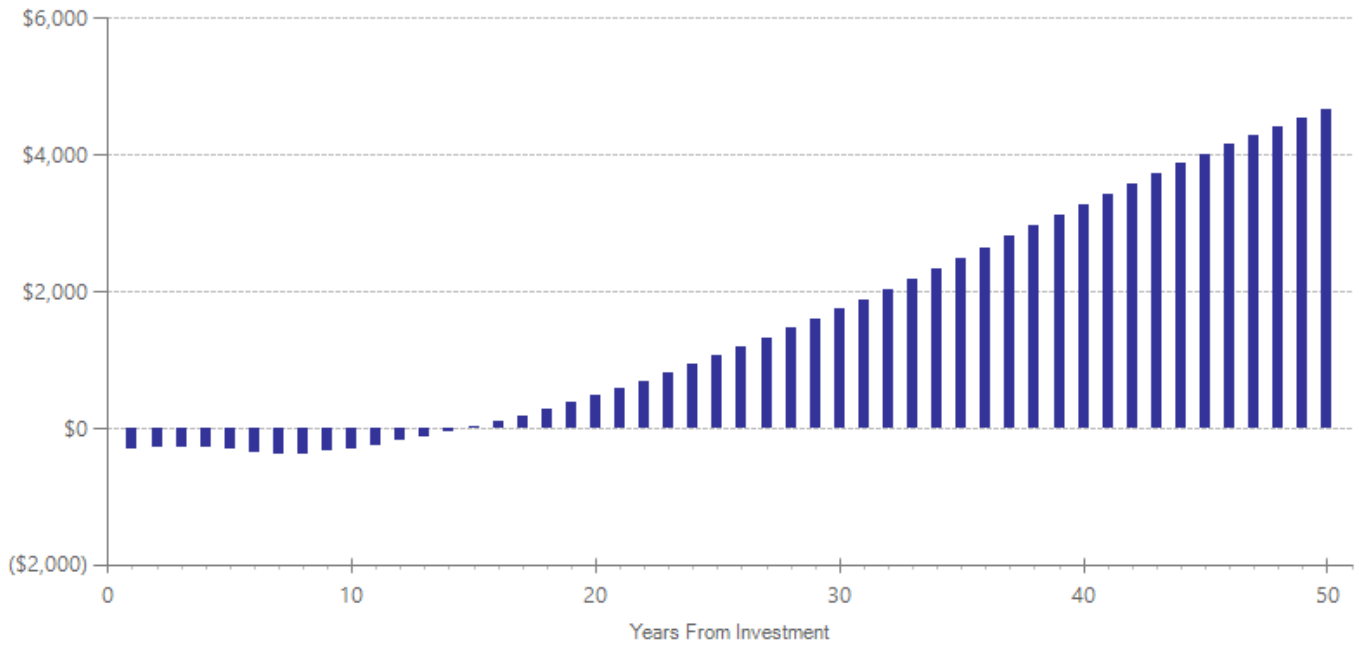
Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	1	531	-0.058	0.079	15	-0.058	0.079	18	-0.177	0.040
Smoking in high school	1	531	-0.061	0.079	15	-0.061	0.079	18	-0.186	0.028

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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

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

Benefit-cost estimates updated June 2016. 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 adolescent is required to attend Session 3.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	$538	Benefit to cost ratio	$2.69
Participants	$846	Benefits minus costs	$1,124
Others	$664	Chance the program will produce benefits greater than the costs	56 %
Indirect	($258)		
Total benefits	$1,791		
Net program cost	($666)		
Benefits minus cost	$1,124		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$56	$129	$28	$213
Labor market earnings associated with high school graduation	$864	$392	$395	$0	$1,651
K-12 grade repetition	$0	$4	$0	$2	$7
Health care associated with smoking	$41	$126	$156	$63	$386
Property loss associated with alcohol abuse or dependence	$2	$0	$3	$0	$5
Costs of higher education	($61)	($40)	($19)	($20)	($140)
Adjustment for deadweight cost of program	$0	$0	$0	($331)	($331)
Totals	$846	$538	$664	($258)	$1,791

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

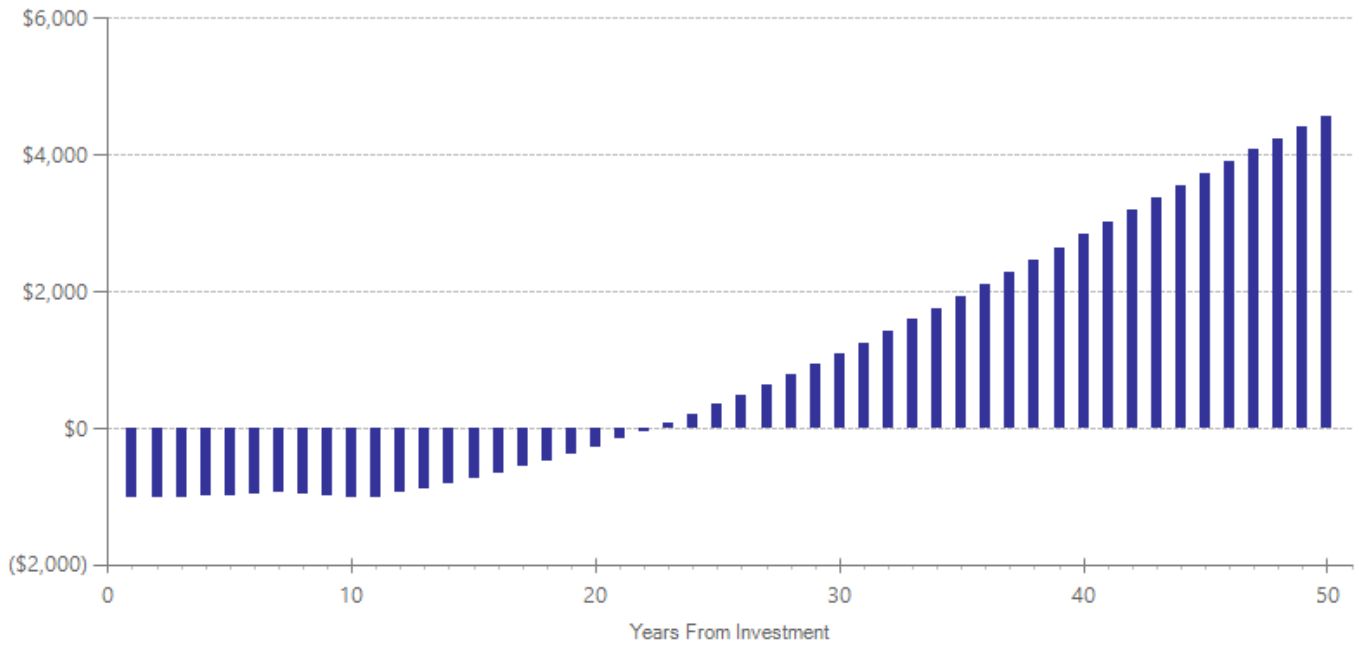
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$655	2013	Present value of net program costs (in 2015 dollars)	($666)
Comparison costs	$0	2012	Cost range (+ or -)	10 %

Per-family cost data for this five-week program 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Internalizing symptoms	1	149	-0.078	0.180	18	-0.057	0.142	20	-0.237	0.189
Alcohol use in high school	1	146	-0.085	0.117	16	-0.085	0.117	18	-0.256	0.030
Smoking in high school	1	144	-0.062	0.138	16	-0.062	0.138	18	-0.187	0.175
Cannabis use in high school	1	143	-0.101	0.301	16	-0.101	0.301	18	-0.305	0.345
Illicit drug use in high school	2	361	-0.027	0.164	16	-0.027	0.164	26	-0.082	0.619

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

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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.

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Healthy Families America

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$3,165
Participants	$3,845
Others	$291
Indirect	($1,489)
Total benefits	$5,811
Net program cost	($4,797)
Benefits minus cost	$1,015

Benefit to cost ratio	$1.21
Benefits minus costs	$1,015
Chance the program will produce benefits greater than the costs	51 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$7	$18	$4	$28
Labor market earnings associated with illicit drug abuse or dependence	($32)	($15)	$0	($1)	($48)
Health care associated with illicit drug abuse or dependence	($3)	($17)	($15)	($8)	($44)
Health care associated with major depression	$32	$98	$121	$49	$300
Public assistance	($100)	$234	$0	$118	$253
Labor market earnings associated with problem alcohol use	$1,248	$567	$0	$19	$1,833
Property loss associated with problem alcohol use	$2	$0	$4	$0	$7
Subtotals	$1,147	$874	$128	$180	$2,328
From secondary participant					
Crime	$0	$88	$175	$44	$307
Child abuse and neglect	$561	$176	$0	$88	$825
K-12 grade repetition	$0	$9	$0	$4	$13
K-12 special education	$0	$1,056	$0	$528	$1,584
Property loss associated with alcohol abuse or dependence	$0	$0	$0	$0	$1
Health care associated with major depression	$3	$9	$12	$5	$29
Labor market earnings associated with child abuse & neglect	$2,210	$1,004	$0	$80	$3,293
Costs of higher education	($77)	($51)	($24)	($25)	($176)
Subtotals	$2,698	$2,291	$164	$723	$5,876
Adjustment for deadweight cost of program	$0	$0	($1)	($2,392)	($2,393)
Totals	$3,845	$3,165	$291	($1,489)	$5,811

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

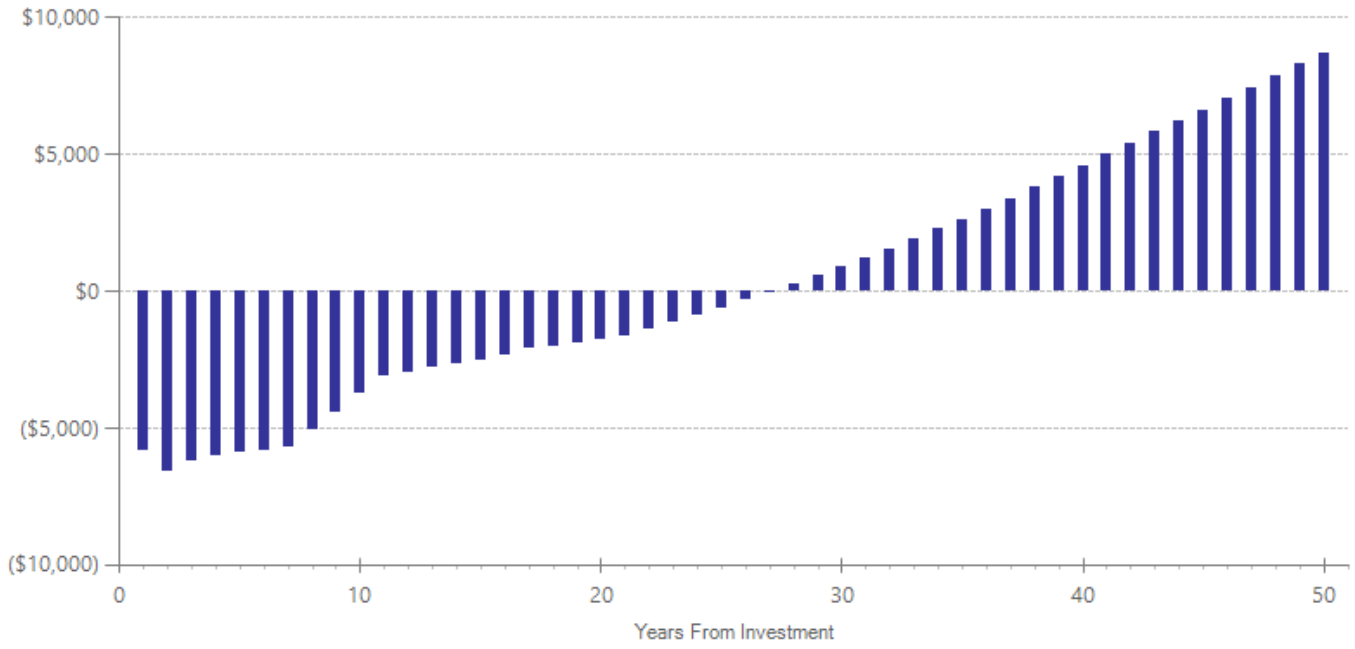
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$3,348	2004	Present value of net program costs (in 2015 dollars)	($4,797)
Comparison costs	$0	2004	Cost range (+ 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Test scores	Secondary	4	770	0.013	0.098	4	0.003	0.108	17	0.013	0.898
Child abuse and neglect	Secondary	7	3143	-0.135	0.133	2	-0.135	0.133	12	-0.135	0.313
K-12 grade repetition	Secondary	1	452	-0.015	0.123	7	-0.015	0.123	17	-0.015	0.903
K-12 special education	Secondary	1	452	-0.216	0.116	7	-0.216	0.116	17	-0.216	0.062
Public assistance	Primary	3	998	-0.016	0.047	25	-0.016	0.047	35	-0.016	0.734
Major depressive disorder	Primary	3	817	-0.069	0.061	25	-0.036	0.074	26	-0.069	0.253
Illicit drug abuse or dependence	Primary	1	373	0.021	0.163	25	0.021	0.163	35	0.021	0.895
Externalizing behavior symptoms	Secondary	2	578	-0.065	0.126	5	-0.031	0.066	8	-0.065	0.607
Problem alcohol use	Primary	1	373	-0.166	0.172	25	-0.023	0.259	27	-0.166	0.335
Internalizing symptoms	Secondary	2	720	-0.160	0.145	3	-0.116	0.122	5	-0.160	0.271
Low birthweight births	Secondary	1	236	-0.511	0.228	1	-0.511	0.228	1	-0.511	0.025

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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

Benefit-cost estimates updated June 2016. 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 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 Statistics Per Participant

Benefits to:			
Taxpayers	($19)	Benefit to cost ratio	($0.62)
Participants	($102)	Benefits minus costs	($534)
Others	$90	Chance the program will produce benefits greater than the costs	41 %
Indirect	($174)		
Total benefits	($205)		
Net program cost	($329)		
Benefits minus cost	($534)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$48	$118	$23	$189
K-12 special education	$0	$0	$0	$0	$1
Property loss associated with alcohol abuse or dependence	$2	$0	$3	$0	$4
Labor market earnings associated with major depression	$0	$0	$0	$0	$0
Health care associated with major depression	$1	$2	$2	$1	$5
Costs of higher education	($104)	($69)	($32)	($34)	($241)
Adjustment for deadweight cost of program	$0	$0	$0	($164)	($164)
Totals	($102)	($19)	$90	($174)	($205)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

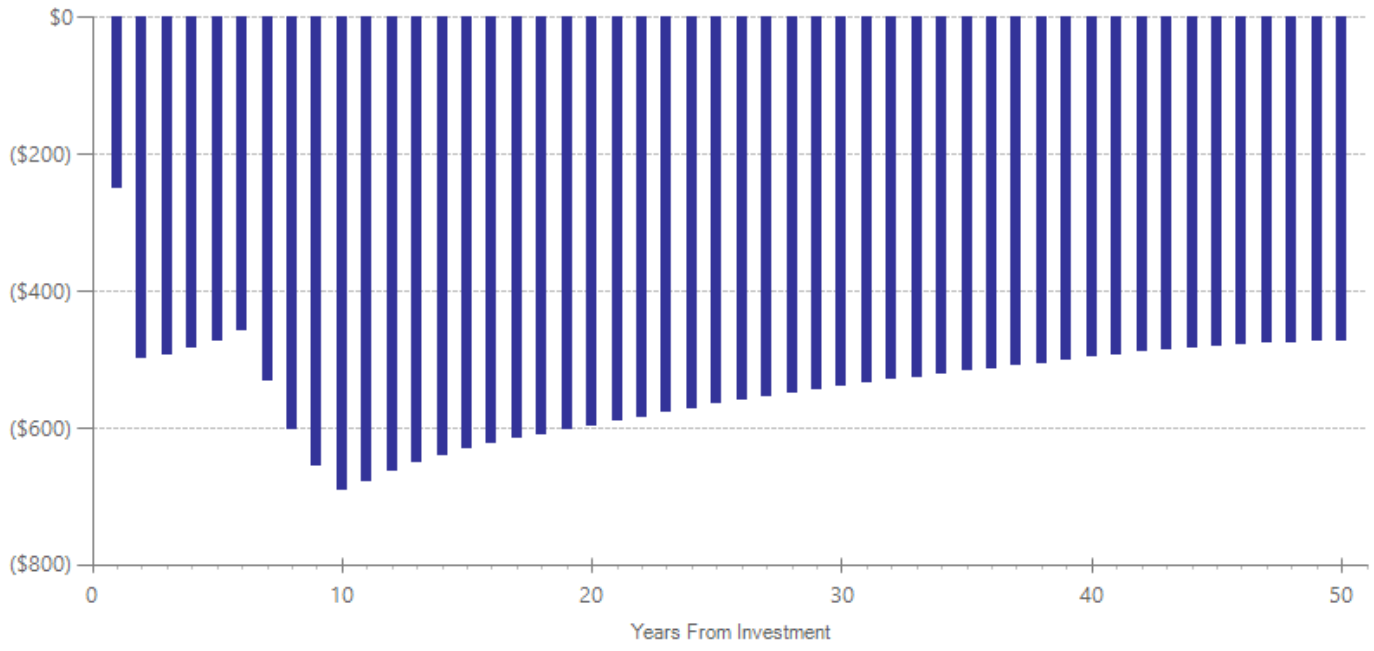
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$164	2013	Present value of net program costs (in 2015 dollars)	($329)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

This program is typically delivered over a two-year period. The cost estimate includes training, materials, and setup costs obtained from Blueprints for Healthy Youth Development (http://www.blueprintsprograms.com/program-costs/positive-family-support-family-check-up). The estimate also includes compensation costs for a half-time (0.5 FTE) intervention/family resource staff member. To calculate a per-student annual cost, we divide the implementation and staff costs by the number of students in a middle school in Washington's Prototypical School model.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	1	500	-0.013	0.152	18	-0.013	0.152	28	-0.039	0.797
Smoking before end of middle school	1	386	-0.240	0.208	13	-0.240	0.208	15	-0.727	0.001
Cannabis use before end of middle school	1	386	-0.101	0.208	13	-0.101	0.208	15	-0.305	0.142
Alcohol use before end of middle school	1	386	-0.116	0.208	13	-0.116	0.208	15	-0.350	0.092
Major depressive disorder	1	52	-0.098	0.468	15	0.000	0.039	16	-0.296	0.527
Externalizing behavior symptoms	1	500	-0.004	0.152	17	-0.002	0.079	20	-0.012	0.939
Grade point average	1	500	-0.020	0.152	18	-0.020	0.152	18	-0.062	0.685
Alcohol use in high school	1	500	-0.017	0.152	18	-0.017	0.152	18	-0.050	0.741
Smoking in high school	1	500	-0.048	0.152	14	-0.048	0.152	18	-0.145	0.342
Cannabis use in high school	1	500	-0.041	0.152	18	-0.041	0.152	18	-0.126	0.410

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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Familias Unidas

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: Familias Unidas is a family-based prevention program for Latino youth and their families. The program involves 8 parent group meetings and 4 home visits. Group sessions are facilitated by two therapists. The sessions focus on positive parenting, family communication, parental monitoring, and adolescent risk (substance use, HIV) behaviors.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$172	Benefit to cost ratio	($0.11)
Participants	$273	Benefits minus costs	($1,630)
Others	$87	Chance the program will produce benefits greater than the costs	41 %
Indirect	($693)		
Total benefits	($161)		
Net program cost	($1,469)		
Benefits minus cost	($1,630)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$14	$34	$7	$56
Labor market earnings associated with smoking	$263	$119	$0	$15	$397
Health care associated with smoking	$14	$42	$52	$24	$132
Property loss associated with alcohol abuse or dependence	$1	$0	$2	$0	$4
Costs of higher education	($5)	($3)	($2)	($2)	($12)
Adjustment for deadweight cost of program	$0	$0	$0	($737)	($737)
Totals	$273	$172	$87	($693)	($161)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

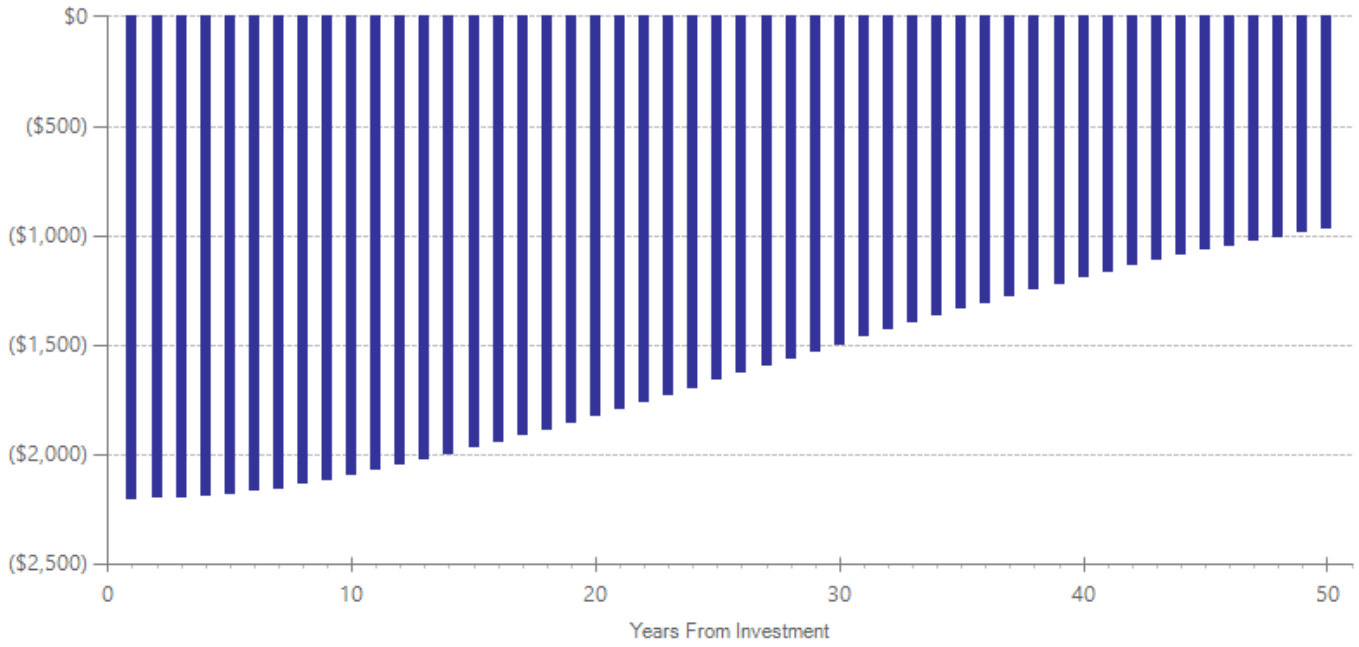
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$1,465	2014	Present value of net program costs (in 2015 dollars)	($1,469)
Comparison costs	$0	2014	Cost range (+ or -)	25 %

We estimate per-participant cost using by multiplying 16 hours of group sessions by the hourly rate for each facilitator multiplied by 12 facilitators divided by 10 families per group. Cost of 4 home visits per family assuming 1.5 hours with facilitator travel. Training costs assume 10 facilitators can be trained at one time, 48 hours of training, with a cost of $50,000 to train 10 facilitators. We further assume that the intervention would be provided by school counselors, using average hourly rates for certificated school personnel and that each counselor would be provide one session per year for 3 years and that 3 hours of clinical supervision would be provided per week for each group. Again, cost per participant assumes 10 families per group. Costs may vary depending on whether facilitators are school district employees or independent contractors. Information on required training provided by Yessine Estrada on May 17, 2016.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	2	186	-0.059	0.117	16	-0.059	0.117	18	-0.156	0.612
Regular smoking	1	66	-0.012	0.181	16	-0.012	0.181	26	-0.031	0.865
STD risky behavior	1	43	-0.129	0.309	16	n/a	n/a	n/a	-0.339	0.293
Initiation of sexual activity	2	120	-0.099	0.198	16	n/a	n/a	n/a	-0.264	0.180
Illicit drug use in high school	1	66	0.005	0.181	16	0.005	0.181	26	0.014	0.937
Cannabis abuse or dependence	1	120	-0.056	0.140	16	0.000	0.187	19	-0.146	0.296

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Estrada, Y., Rosen, A., Huang, S., Tapia, M., Sutton, M., Willis, L., Quevedo, A., . . . Prado, G. (2015). Efficacy of a brief intervention to reduce substance use and Human Immunodeficiency Virus infection risk among Latino youth. *Journal of Adolescent Health,* 57(6), 651-657.

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Parent Child Home Program

Benefit-cost estimates updated June 2016. Literature review updated April 2012.

Program Description: The Parent-Child Home Program (http://www.parent-child.org/) is targeted to 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 paraprofessional brings a new toy or book which he/she uses to demonstrate verbal interaction techniques and encourage learning through play.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$2,357	Benefit to cost ratio	$0.50
Participants	$1,938	Benefits minus costs	($2,873)
Others	$778	Chance the program will produce benefits greater than the costs	43 %
Indirect	($2,159)		
Total benefits	$2,914		
Net program cost	($5,787)		
Benefits minus cost	($2,873)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with test scores	$1,998	$907	$881	$0	$3,786
K-12 grade repetition	$0	$82	$0	$41	$123
K-12 special education	$0	$1,329	$0	$660	$1,988
Health care associated with educational attainment	($23)	$83	($90)	$40	$10
Costs of higher education	($37)	($44)	($14)	($21)	($116)
Adjustment for deadweight cost of program	$0	$0	$0	($2,878)	($2,878)
Totals	$1,938	$2,357	$778	($2,159)	$2,914

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

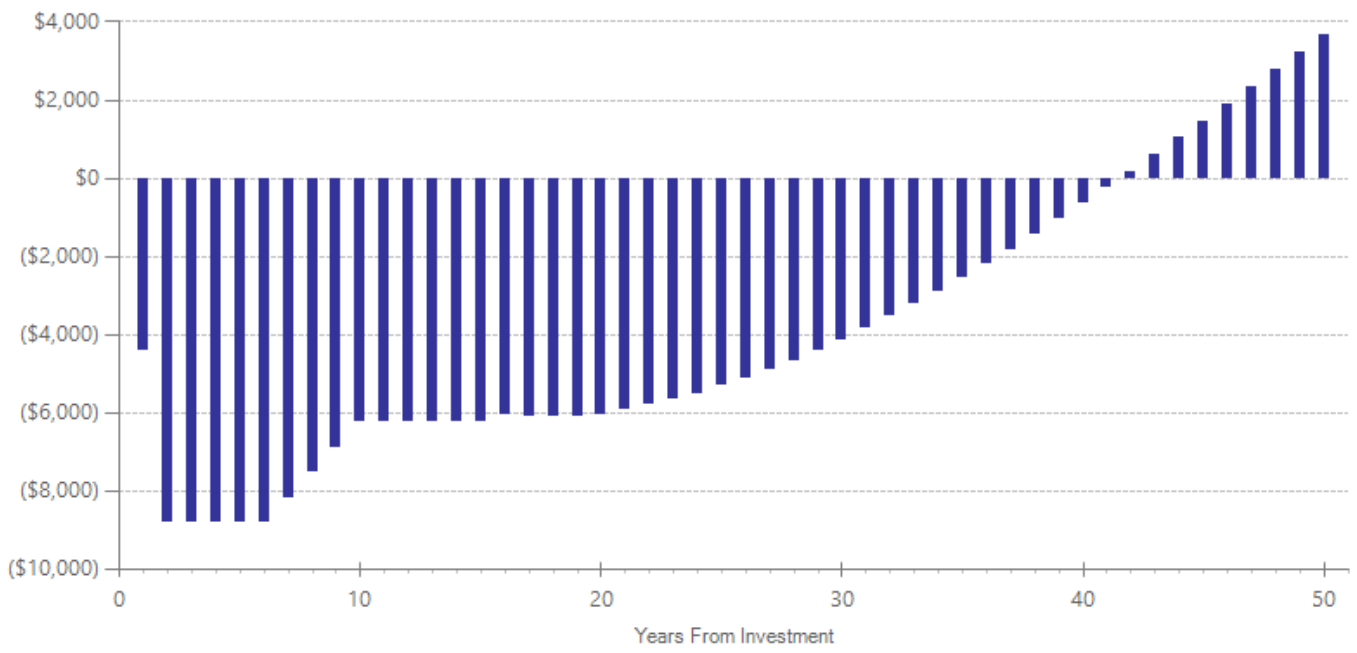
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$2,800	2011	Present value of net program costs (in 2015 dollars)	($5,787)
Comparison costs	$0	2011	Cost range (+ 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Test scores	4	211	0.139	0.120	4	0.029	0.132	17	0.224	0.162
K-12 grade repetition	1	74	-0.103	0.341	8	-0.103	0.341	17	-0.285	0.421
K-12 special education	1	85	-0.225	0.256	8	-0.225	0.256	17	-0.626	0.021

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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 June 2016. Literature review updated December 2014.

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

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$7,039
Participants	$14,507
Others	$655
Indirect	$11,129
Total benefits	$33,330
Net program cost	($40)
Benefits minus cost	$33,290

Benefit to cost ratio	$828.87
Benefits minus costs	$33,290
Chance the program will produce benefits greater than the costs	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with smoking	$14,335	$6,510	$0	$10,887	$31,732
Health care associated with smoking	$172	$529	$655	$262	$1,619
Adjustment for deadweight cost of program	$0	$0	$0	($20)	($20)
Totals	$14,507	$7,039	$655	$11,129	$33,330

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

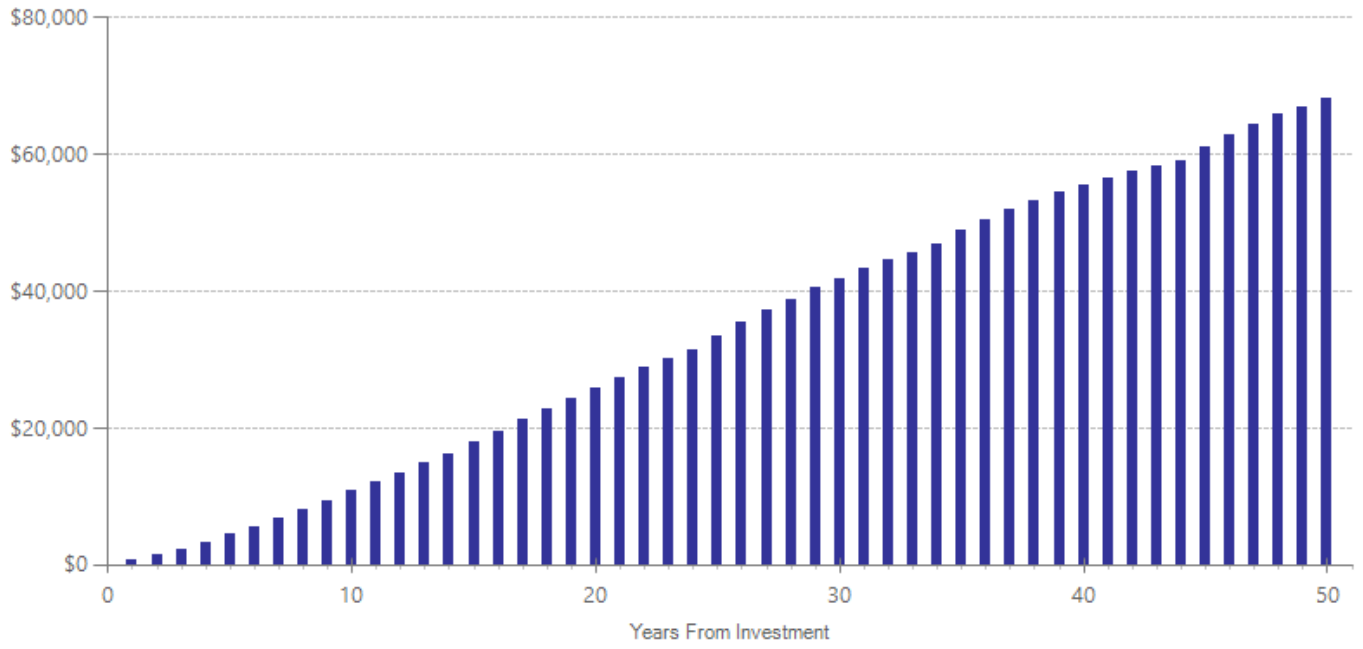
	Annual cost	Year dollars
Program costs	$40	2012
Comparison costs	$1	2012

Summary	
Present value of net program costs (in 2015 dollars)	($40)
Cost range (+ or -)	10 %

Per-participant costs were based on the cost of an enhanced website, as reported in 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. The control group cost was based on the "static" website costs from the same study; the control group either received a 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Regular smoking	7	1434	-0.427	0.066	31	-0.427	0.066	41	-0.431	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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Text messaging programs for smoking cessation

Benefit-cost estimates updated June 2016. 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, send motivational text messages, and send supportive messages 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 Statistics Per Participant

Benefits to:

Taxpayers	$3,986
Participants	$8,195
Others	$385
Indirect	$7,229
Total benefits	$19,795
Net program cost	($52)
Benefits minus cost	$19,742

Benefit to cost ratio	$378.89
Benefits minus costs	$19,742
Chance the program will produce benefits greater than the costs	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with smoking	$8,094	$3,676	$0	$7,100	$18,869
Health care associated with smoking	$101	$311	$385	$154	$951
Adjustment for deadweight cost of program	$0	$0	$0	($26)	($26)
Totals	$8,195	$3,986	$385	$7,229	$19,795

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

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[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

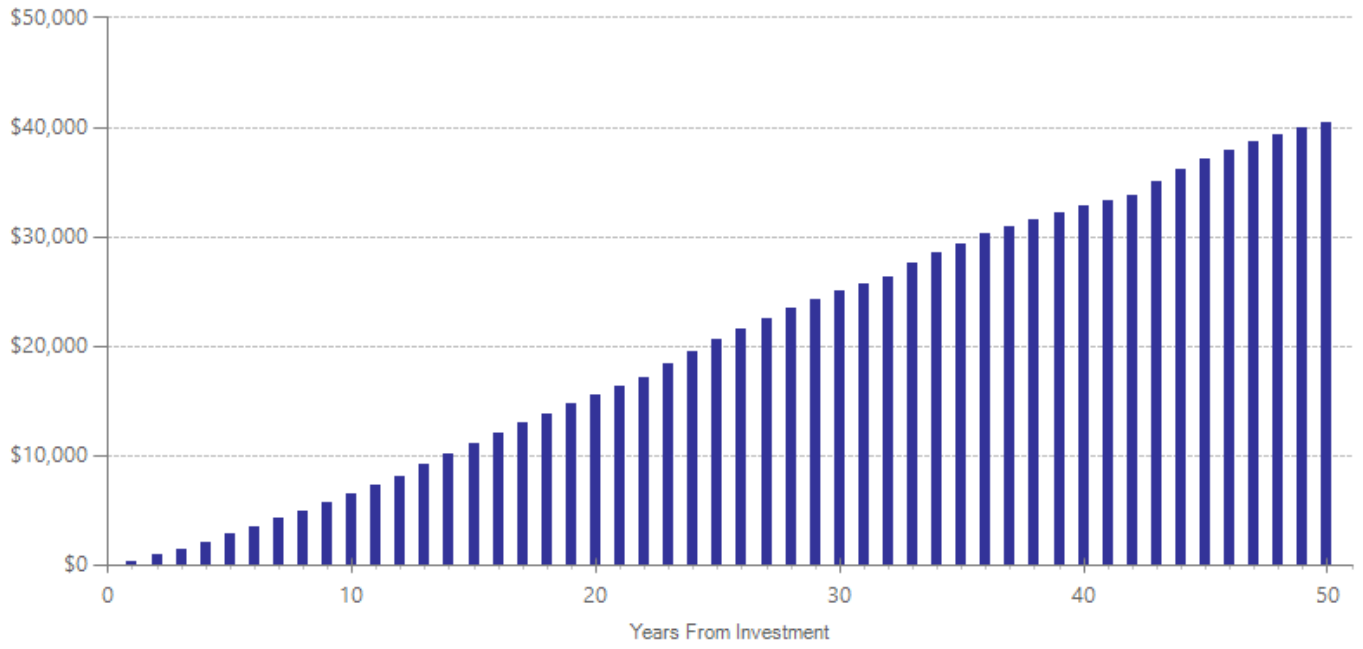
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$52	2014	Present value of net program costs (in 2015 dollars)	($52)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

Mid-point per-participant cost estimates came 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Regular smoking	9	4931	-0.247	0.077	33	-0.247	0.077	43	-0.286	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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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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Quantum Opportunities Program

Benefit-cost estimates updated June 2016. Literature review updated April 2012.

Program Description: The Quantum Opportunities Program (QOP) provides year-round services for disadvantaged high school students. The program's main goal is to improve academic deficiencies among high school-aged youth with low grades who are at risk of dropping out of school. Students enroll as they enter high school; are mentored by program coordinators; and engage in 250 hours of activity in each of three areas every year—education, community service and development activities meant to reduce risky behavior, promote cultural awareness and/or promote recreation. Students are also provided financial incentives, through stipends and bonuses, for participating in QOP activities and remaining in school.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$17,081	Benefit to cost ratio	$1.66
Participants	$25,570	Benefits minus costs	$17,933
Others	$13,913	Chance the program will produce benefits greater than the costs	61 %
Indirect	($11,597)		
Total benefits	$44,967		
Net program cost	($27,034)		
Benefits minus cost	$17,933		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$1,398	$3,867	$711	$5,976
Labor market earnings associated with high school graduation	$31,824	$14,452	$14,616	$0	$60,892
Labor market earnings associated with alcohol abuse or dependence	($2,880)	($1,308)	$0	($26)	($4,213)
Health care associated with alcohol abuse or dependence	($25)	($143)	($136)	($71)	($375)
Property loss associated with alcohol abuse or dependence	($5)	$0	($9)	$0	($14)
Public assistance	($599)	$1,409	$0	$716	$1,526
Health care associated with educational attainment	($939)	$3,426	($3,757)	$1,724	$455
Costs of higher education	($1,835)	($2,170)	($686)	($1,092)	($5,783)
Subtotals	$25,540	$17,065	$13,895	$1,962	$58,463
From secondary participant					
Labor market earnings associated with high school graduation	$32	$15	$15	$0	$62
K-12 grade repetition	$0	$0	$0	$0	$1
Health care associated with educational attainment	($1)	$3	$3	$2	$7
Costs of higher education	($2)	($2)	($1)	($1)	($5)
Subtotals	$30	$17	$17	$1	$65
Adjustment for deadweight cost of program	$0	$0	$0	($13,561)	($13,561)
Totals	$25,570	$17,081	$13,913	($11,597)	$44,967

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

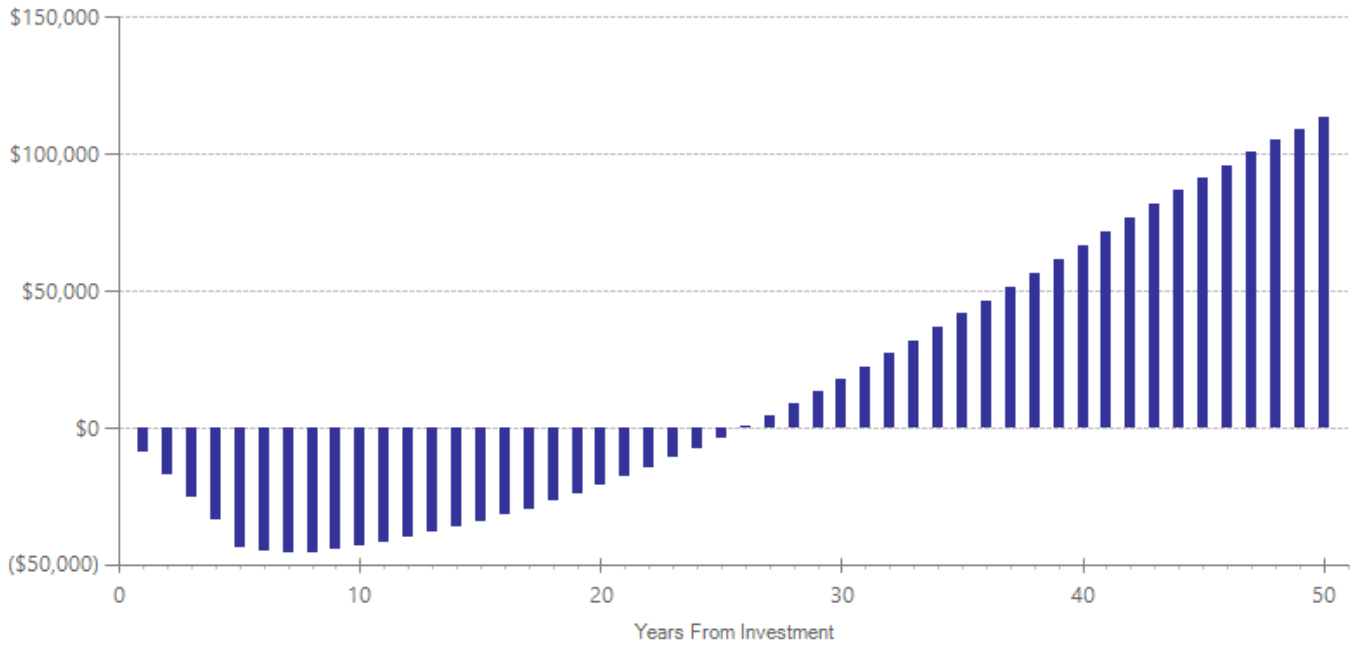
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$5,000	2006	Present value of net program costs (in 2015 dollars)	($27,034)
Comparison costs	$0	2006	Cost range (+ or -)	30 %

Average cost per youth is $25,000 for five years. We used a 30% uncertainty estimate around this figure because the average costs vary widely by site, as reported by 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Crime	Primary	2	636	-0.230	0.384	19	-0.230	0.384	29	-0.231	0.548
High school graduation	Primary	3	724	0.340	0.178	19	0.340	0.178	19	0.340	0.056
Public assistance	Primary	3	724	-0.112	0.182	21	-0.112	0.182	21	-0.112	0.539
Teen births under age 18	Primary	2	668	-0.138	0.242	19	-0.138	0.242	19	-0.138	0.569
Teen births (second generation)	Secondary	2	668	-0.138	0.242	19	-0.138	0.242	19	-0.138	0.569
Suspensions/expulsions	Primary	1	580	-0.100	0.249	16	-0.100	0.249	18	-0.100	0.688
Alcohol abuse or dependence	Primary	1	580	0.093	0.197	22	0.093	0.197	32	0.093	0.638
Employment	Primary	2	636	0.188	0.222	22	0.188	0.222	34	0.188	0.397

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

Lattimore, C.B., Mihalic, S.F., Grotpeter, J.K., & Taggart, R. (1998). *Blueprints for violence prevention, book four: The Quantum Opportunities Program* (Document No. NCJ 174197). Boulder: University of Colorado, Boulder; Center for the Study and Prevention of Violence.

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.

Schirm, A., Stuart, E., & McKie, A. (2006). *The Quantum Opportunity Program Demonstration: Final impacts* (Document No. PR06- 70). Princeton, NJ: Mathematica Policy Research.

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

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:

Taxpayers	$4,031	Benefit to cost ratio	$10.23
Participants	$6,865	Benefits minus costs	$11,900
Others	$2,662	Chance the program will produce benefits greater than the costs	71 %
Indirect	($368)		
Total benefits	$13,190		
Net program cost	($1,289)		
Benefits minus cost	$11,900		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$95	$232	$48	$375
Labor market earnings associated with high school graduation	$7,658	$3,478	$3,515	$0	$14,651
K-12 grade repetition	$0	$0	$0	$0	$0
Property loss associated with alcohol abuse or dependence	$0	$0	$1	$0	$1
Health care associated with educational attainment	($228)	$834	($911)	$422	$116
Costs of higher education	($566)	($376)	($174)	($190)	($1,305)
Adjustment for deadweight cost of program	$0	$0	$0	($648)	($648)
Totals	$6,865	$4,031	$2,662	($368)	$13,190

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

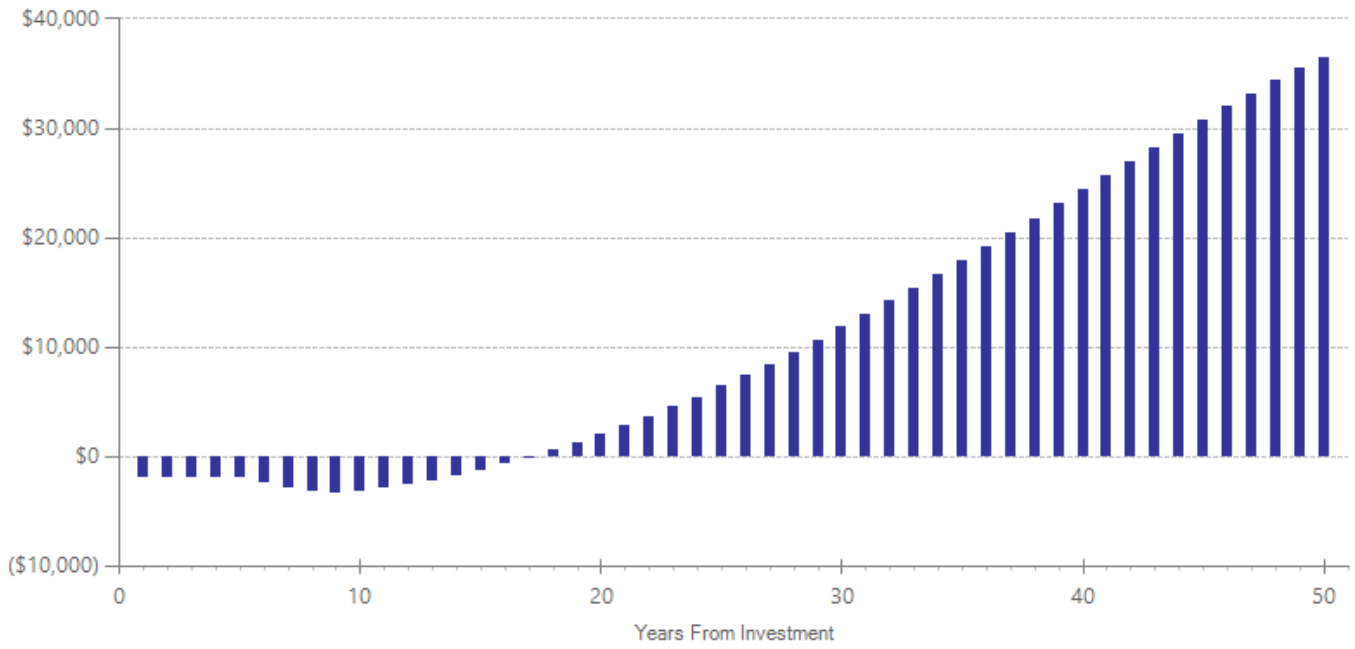
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$1,088	2005	Present value of net program costs (in 2015 dollars)	($1,289)
Comparison costs	$0	2005	Cost range (+ or -)	10 %

The effects of this program represent one year of mentoring. Per-participant 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	5	1542	-0.021	0.044	14	-0.021	0.044	24	-0.014	0.828
High school graduation	2	758	0.101	0.143	18	0.101	0.143	18	0.293	0.040
Cannabis use before end of middle school	1	76	-0.081	0.224	14	-0.081	0.224	24	-0.260	0.246
Alcohol use before end of middle school	1	76	-0.037	0.224	14	-0.037	0.224	24	-0.119	0.596
Grade point average	5	1157	0.077	0.043	14	0.077	0.043	14	0.095	0.028
Smoking in high school	1	43	-0.212	0.223	17	-0.212	0.223	18	-0.212	0.343
Illicit drug use in high school	1	43	-0.352	0.224	17	-0.352	0.224	18	-0.352	0.117
School attendance	3	911	0.156	0.048	14	0.156	0.048	14	0.162	0.001
Major depressive disorder	1	348	-0.140	0.076	14	0.000	0.013	15	-0.140	0.066
Illicit drug use before end of middle school	2	722	-0.379	0.137	14	-0.379	0.137	15	-0.390	0.004

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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

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

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

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

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

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

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

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

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

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

Benefit-cost estimates updated June 2016. 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 Statistics Per Participant

Benefits to:			
Taxpayers	$4,193	Benefit to cost ratio	$3.92
Participants	$7,144	Benefits minus costs	$9,523
Others	$2,783	Chance the program will produce benefits greater than the costs	66 %
Indirect	($1,337)		
Total benefits	$12,783		
Net program cost	($3,260)		
Benefits minus cost	$9,523		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$100	$244	$50	$394
Labor market earnings associated with high school graduation	$7,958	$3,614	$3,659	$0	$15,232
K-12 grade repetition	$0	$0	$0	$0	$0
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Health care associated with educational attainment	($236)	$863	($944)	$431	$114
Costs of higher education	($579)	($384)	($178)	($192)	($1,334)
Adjustment for deadweight cost of program	$0	$0	$0	($1,626)	($1,626)
Totals	$7,144	$4,193	$2,783	($1,337)	$12,783

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

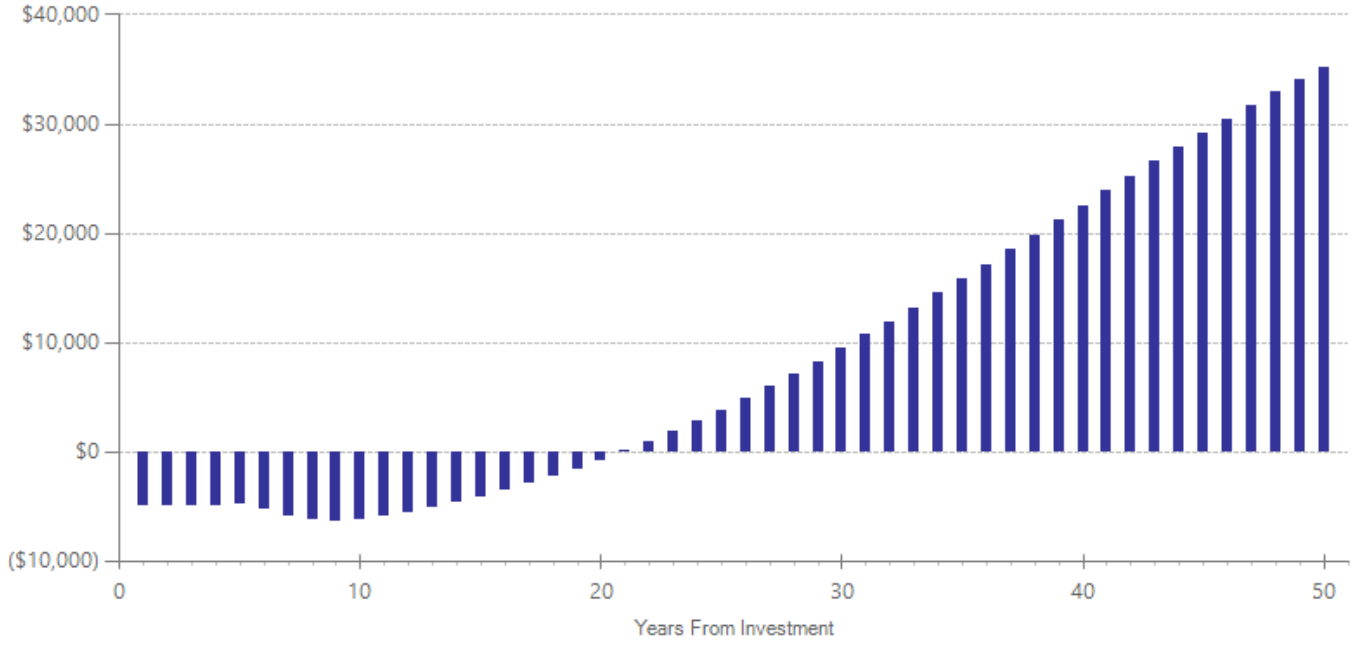
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$2,748	2005	Present value of net program costs (in 2015 dollars)	($3,260)
Comparison costs	$0	2005	Cost range (+ or -)	10 %

The effects of this program represent one year of mentoring. Per-participant 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	5	1542	-0.021	0.044	14	-0.021	0.044	24	-0.014	0.828
High school graduation	2	758	0.101	0.143	18	0.101	0.143	18	0.293	0.040
Cannabis use before end of middle school	1	76	-0.081	0.224	14	-0.081	0.224	24	-0.260	0.246
Alcohol use before end of middle school	1	76	-0.037	0.224	14	-0.037	0.224	24	-0.119	0.596
Grade point average	5	1157	0.077	0.043	14	0.077	0.043	14	0.095	0.028
Smoking in high school	1	43	-0.212	0.223	17	-0.212	0.223	18	-0.212	0.343
Illicit drug use in high school	1	43	-0.352	0.224	17	-0.352	0.224	18	-0.352	0.117
School attendance	3	911	0.156	0.048	14	0.156	0.048	14	0.162	0.001
Major depressive disorder	1	348	-0.140	0.076	14	0.000	0.013	15	-0.140	0.066
Illicit drug use before end of middle school	2	722	-0.379	0.137	14	-0.379	0.137	15	-0.390	0.004

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

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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.

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

Communities That Care

Benefit-cost estimates updated June 2016. 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 using a population-based survey of young people. The board works to implement tested and effective programs to address the issues and needs that are identified.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$657	Benefit to cost ratio	$4.17
Participants	$709	Benefits minus costs	$1,853
Others	$1,066	Chance the program will produce benefits greater than the costs	80 %
Indirect	$6		
Total benefits	$2,438		
Net program cost	($585)		
Benefits minus cost	$1,853		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$257	$617	$128	$1,002
Labor market earnings associated with high school graduation	$725	$329	$332	$135	$1,521
Health care associated with smoking	$34	$105	$130	$52	$322
Property loss associated with alcohol abuse or dependence	$2	$0	$3	$0	$5
Costs of higher education	($52)	($35)	($16)	($17)	($120)
Adjustment for deadweight cost of program	$0	$0	$0	($292)	($292)
Totals	$709	$657	$1,066	$6	$2,438

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

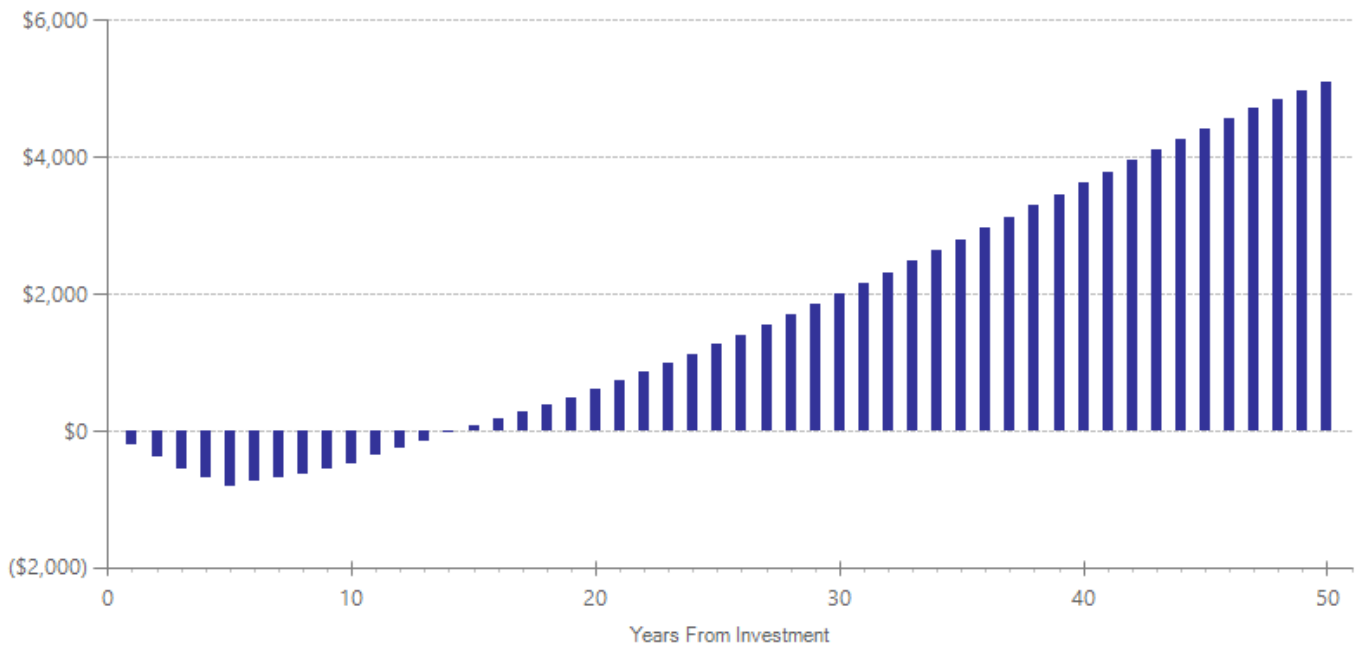
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$103	2004	Present value of net program costs (in 2015 dollars)	($585)
Comparison costs	$0	2004	Cost range (+ or -)	35 %

Weighted average of per-child costs across 12 Communities that Care (CTC) demonstration communities. Provided by M. Kuklinski, Social Development Research Group, January 2013. Earlier estimates (by 8th grade) were reported in Kukliniski, M.R., Briney, J.S., Hawkins, J.D., & Catalano, R.F., Cost-benefit analysis of Communities that Care outcomes at eight grade. *Prevention Science, 13*(2), 150-161.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	1	1926	-0.059	0.046	17	-0.059	0.046	27	-0.154	0.024
Alcohol use in high school	1	1917	-0.082	0.046	17	-0.082	0.046	18	-0.217	0.048
Smoking in high school	1	2227	-0.051	0.042	17	-0.051	0.042	18	-0.135	0.048
Cannabis use in high school	1	2395	-0.033	0.040	17	-0.033	0.040	18	-0.085	0.253
Illicit drug use in high school	1	2372	-0.019	0.041	17	-0.019	0.041	18	-0.050	0.345

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Kuklinski, M.R., Fagan, A.A., Hawkins, J.D., Briney, J.S., & Catalano, R.F. (2015). Benefit-cost analysis of a randomized evaluation of Communities That Care: monetizing intervention effects on the initiation of delinquency and substance use through grade 12. *Journal of Experimental Criminology, 11*(2), 165-192.

Project STAR

Benefit-cost estimates updated June 2016. 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 classroom intervention (18 sessions) supported by parent, community, and mass media components that address multiple influences on substance use.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$464	Benefit to cost ratio	$3.46
Participants	$786	Benefits minus costs	$1,255
Others	$564	Chance the program will produce benefits greater than the costs	73 %
Indirect	($49)		
Total benefits	$1,765		
Net program cost	($510)		
Benefits minus cost	$1,255		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$34	$81	$17	$131
Labor market earnings associated with high school graduation	$812	$369	$375	$157	$1,712
Health care associated with smoking	$33	$101	$125	$51	$310
Property loss associated with alcohol abuse or dependence	$1	$0	$1	$0	$2
Costs of higher education	($59)	($39)	($18)	($20)	($137)
Adjustment for deadweight cost of program	$0	$0	$0	($255)	($255)
Totals	$786	$464	$564	($49)	$1,765

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

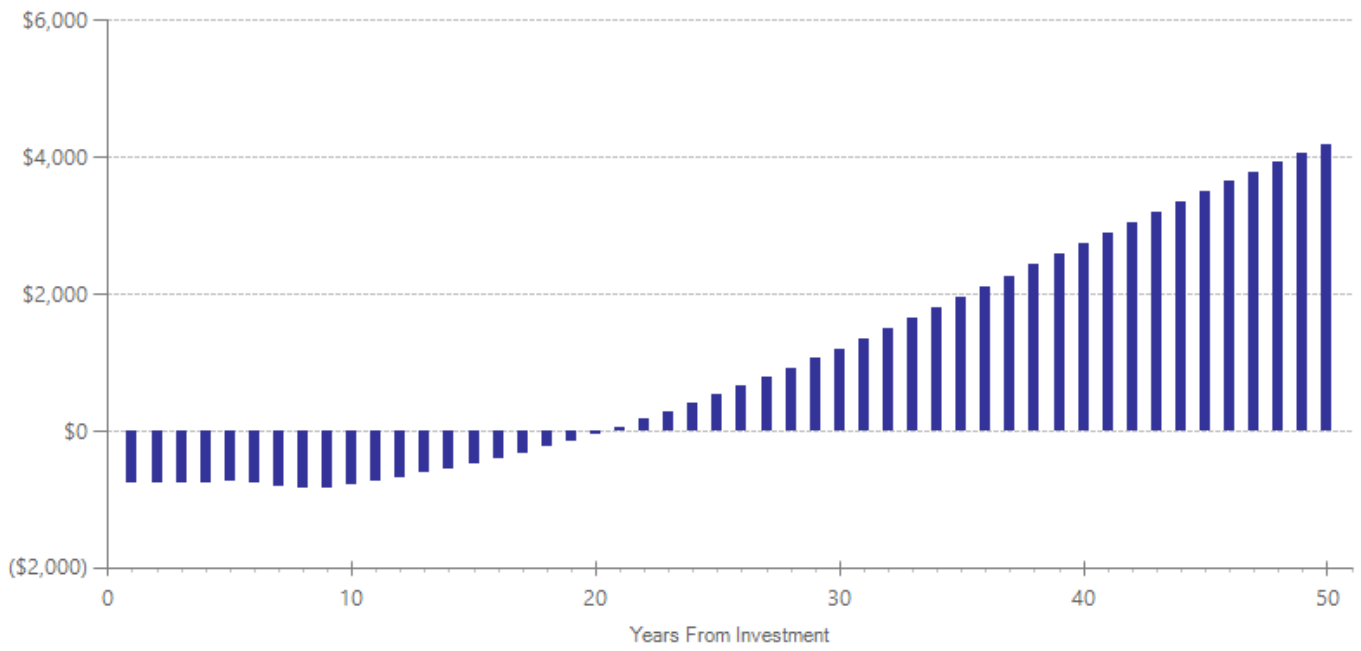
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$400	2002	Present value of net program costs (in 2015 dollars)	($510)
Comparison costs	$0	2002	Cost range (+ or -)	10 %

The per-pupil program costs include all program components estimated by 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, Table 7.3.2.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	2	4915	-0.061	0.114	14	-0.061	0.114	15	-0.227	0.232
Smoking before end of middle school	2	4915	-0.123	0.110	14	-0.123	0.110	15	-0.497	0.124
Cannabis use before end of middle school	2	4915	-0.123	0.149	14	-0.123	0.149	15	-0.371	0.022

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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Citations Used in the Meta-Analysis

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

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

Project Northland

Benefit-cost estimates updated June 2016. 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 playing. 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 Statistics Per Participant

Benefits to:			
Taxpayers	$225	Benefit to cost ratio	$4.70
Participants	$390	Benefits minus costs	$696
Others	$266	Chance the program will produce benefits greater than the costs	74 %
Indirect	$3		
Total benefits	$885		
Net program cost	($188)		
Benefits minus cost	$696		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$12	$28	$6	$45
Labor market earnings associated with high school graduation	$402	$183	$185	$76	$846
Health care associated with smoking	$16	$50	$61	$25	$152
Property loss associated with alcohol abuse or dependence	$0	$0	$1	$0	$1
Costs of higher education	($29)	($19)	($9)	($10)	($66)
Adjustment for deadweight cost of program	$0	$0	$0	($94)	($94)
Totals	$390	$225	$266	$3	$885

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

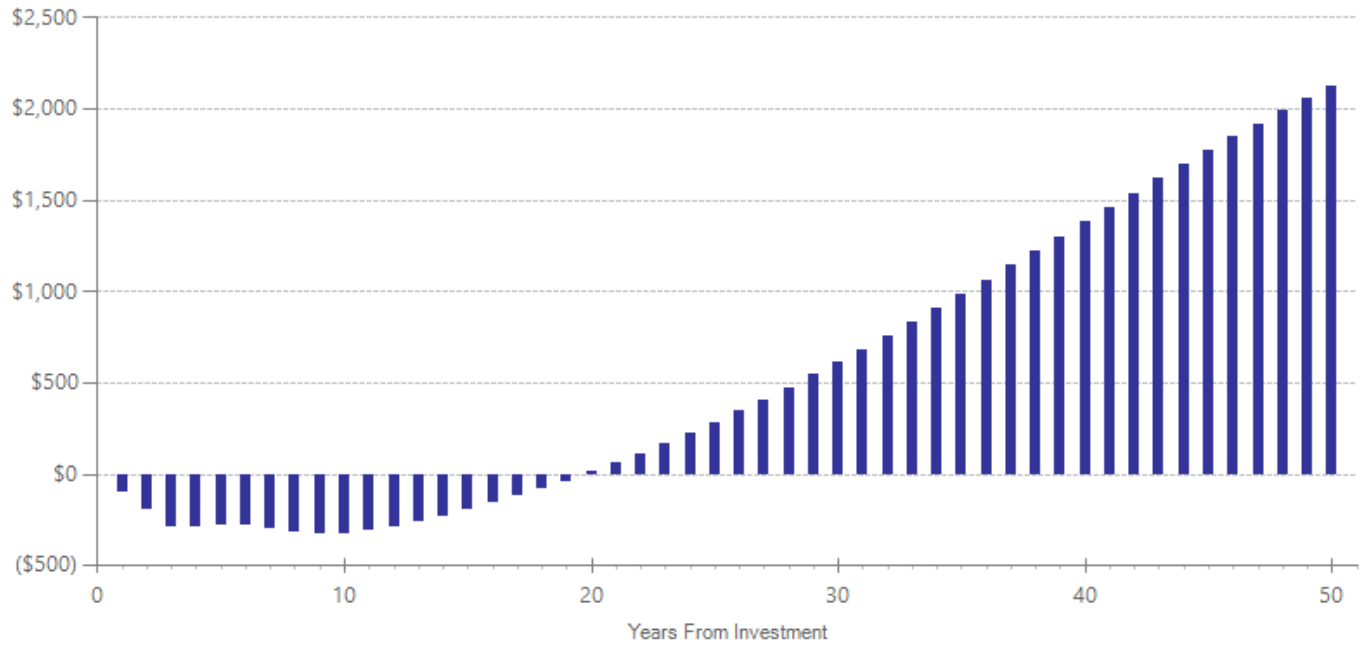
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$64	2013	Present value of net program costs (in 2015 dollars)	($188)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The per-student cost estimate includes teacher time to provide six hours of intervention over eight sessions per year to approximately 26 students per class. The estimate also includes training and implementation materials costs obtained from the National Registry of Evidence-based Programs and Practices and the curriculum publisher (http://www.hazelden.org/OA_HTML/ibeCCtpItmDspRte.jsp?a=b&item=15546; http://legacy.nreppadmin.net/ViewIntervention.aspx?id=25).

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	1	951	-0.059	0.061	12	-0.059	0.061	15	-0.179	0.004
Cannabis use before end of middle school	1	951	-0.033	0.100	12	-0.033	0.100	15	-0.099	0.336
Alcohol use before end of middle school	3	4057	-0.034	0.021	12	-0.034	0.021	15	-0.094	0.001
Youth binge drinking	1	1401	-0.025	0.037	12	-0.025	0.037	22	-0.076	0.039

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An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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Citations Used in the Meta-Analysis

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

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

Perry, C.L., Williams, C.L., Komro, K.A., Veblen-Mortenson, S., Stigler, M.H., Munson, K.A., et al. (2002). Project Northland: Long-term outcomes of community action to reduce adolescent alcohol use. *Health Education Research, 17*(1), 117-132.

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

PROSPER

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: The PROSPER (PROmoting School-community-university Partnerships to Enhance Resilience) delivery system is a partnership-based prevention model designed to help communities implement effective programs to reduce substance use and problem behaviors in youth. In addition to supporting program delivery, the model includes needs assessments, quality monitoring, sustainability strategies, and evaluation. Communities participating in PROSPER form local teams consisting of staff from the Cooperative Extension System (CES); representatives from the public school system and service providers; youth and parents; and other community stakeholders. University researchers and CES staff partner with the local teams and provide a menu of effective programs, technical assistance, coordination, and other supports. Local teams select and implement a family-based program for students in 6th grade and a school-based program in 7th grade from the menu of effective practices. In the studies included in this analysis, each community chose to provide the Strengthening Families Program: 10-14 in 6th grade. In 7th grade, communities chose to implement three different school-based programs including All Stars, LifeSkills Training, and Project Alert.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$326	Benefit to cost ratio	$1.58
Participants	$322	Benefits minus costs	$301
Others	$345	Chance the program will produce benefits greater than the costs	55 %
Indirect	($169)		
Total benefits	$824		
Net program cost	($523)		
Benefits minus cost	$301		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$21	$49	$10	$80
Labor market earnings associated with high school graduation	$314	$143	$144	$0	$600
Property loss associated with alcohol abuse or dependence	$0	$0	$0	$0	$0
Health care associated with illicit drug abuse or dependence	$31	$178	$160	$90	$458
Costs of higher education	($23)	($15)	($7)	($8)	($53)
Adjustment for deadweight cost of program	$0	$0	$0	($261)	($261)
Totals	$322	$326	$345	($169)	$824

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

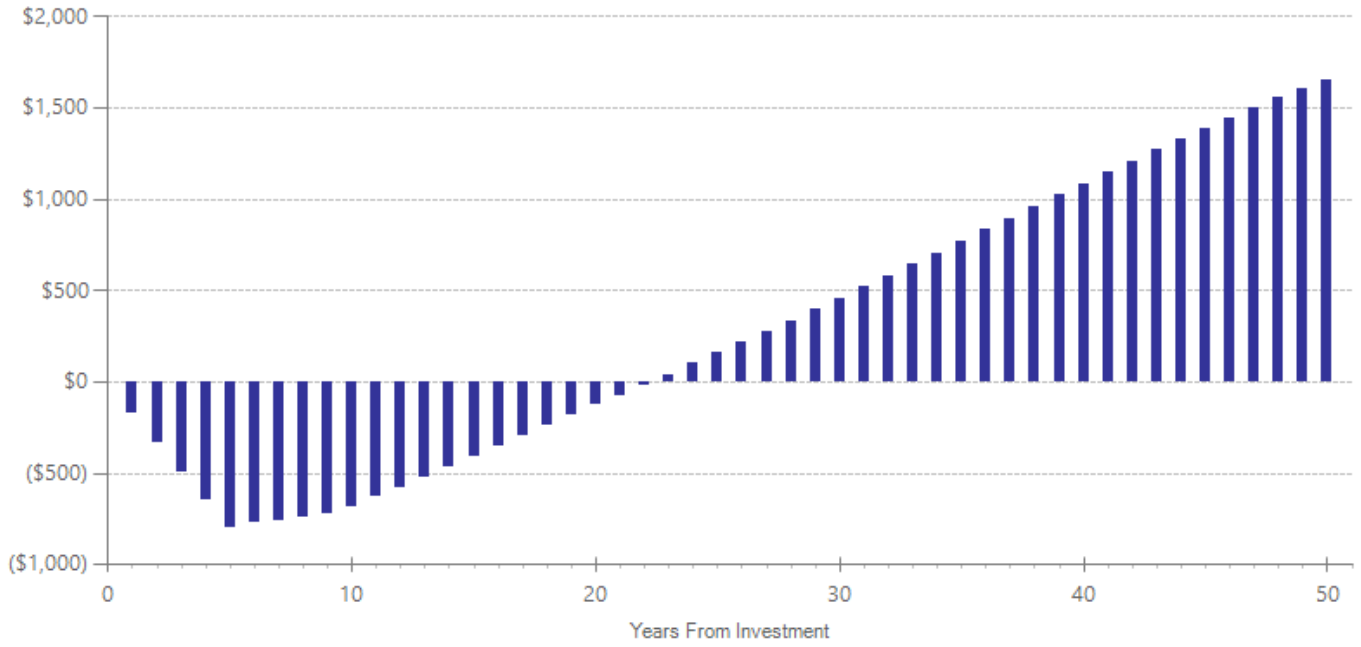
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$104	2010	Present value of net program costs (in 2015 dollars)	($523)
Comparison costs	$0	2010	Cost range (+ or -)	10 %

The per-participant annual cost is derived from the total economic cost of PROSPER delivered in seven communities in Pennsylvania over a five-year period as reported in Crowley, D. M., Jones, D. E., Greenberg, M. T., Feinberg, M. E., & Spoth, R. L. (2012). Resource Consumption of a Diffusion Model for Prevention Programs: The PROSPER Delivery System. Journal of Adolescent Health, 50, 3, 256-263. The estimated costs were incurred at the university, cooperative extension, and local team levels and include salaries and wages; operations (e.g. travel, copying, printing, etc.); overhead; program implementation and delivery (e.g. facilitators, materials, meals, etc.); and opportunity costs. To calculate a per-participant annual cost, we use the total average economic costs divided by the number of participants served and the number of years of program implementation.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Drinking and driving	1	3752	-0.012	0.031	18	-0.012	0.031	18	-0.032	0.312
Alcohol use in high school	1	3961	0.000	0.040	18	0.000	0.040	18	0.000	1.000
Smoking in high school	1	3961	-0.020	0.028	18	-0.020	0.028	18	-0.051	0.069
Cannabis use in high school	1	3961	-0.037	0.028	18	-0.037	0.028	18	-0.098	0.001
Illicit drug use in high school	1	3961	-0.070	0.023	18	-0.070	0.023	18	-0.183	0.001

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Citations Used in the Meta-Analysis

Spoth, R., Redmond, C., Shin, C., Greenberg, M., Feinberg, M., & Schainker, L. (2013). PROSPER community-university partnership delivery system effects on substance misuse through 6 1/2 years past baseline from a cluster randomized controlled intervention trial. *Preventive Medicine, 56,* 190-196.

Spoth, R.L., Trudeau, L.S., Redmond, C., Shin, C., Greenberg, M.T., Feinberg, M.E., & Hyun, G.H. (2015). PROSPER partnership delivery system: Effects on adolescent conduct problem behavior outcomes through 6.5 years past baseline. *Journal of Adolescence, 45*, 44-55.

Children's Aid Society--Carrera

Benefit-cost estimates updated June 2016. Literature review updated April 2012.

Program Description: Children's Aid Society—Carrera Project provides after-school activities five days a week for teens age 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 Statistics Per Participant

Benefits to:

Taxpayers	$4,215
Participants	$7,505
Others	$3,065
Indirect	($7,127)
Total benefits	$7,658
Net program cost	($14,782)
Benefits minus cost	($7,124)

Benefit to cost ratio	$0.52
Benefits minus costs	($7,124)
Chance the program will produce benefits greater than the costs	41 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$167	$409	$84	$661
Labor market earnings associated with high school graduation	$8,194	$3,721	$3,773	$0	$15,689
Public assistance	($1)	$2	$0	$1	$2
Health care associated with educational attainment	($238)	$865	($952)	$434	$110
Costs of higher education	($463)	($548)	($173)	($276)	($1,460)
Subtotals	$7,492	$4,208	$3,058	$244	$15,002
From secondary participant					
Labor market earnings associated with high school graduation	$14	$6	$6	$0	$26
K-12 grade repetition	$0	$0	$0	$0	$0
Health care associated with educational attainment	$0	$1	$1	$1	$3
Costs of higher education	($1)	($1)	$0	$0	($2)
Subtotals	$13	$7	$7	$0	$27
Adjustment for deadweight cost of program	$0	$0	$0	($7,371)	($7,371)
Totals	$7,505	$4,215	$3,065	($7,127)	$7,658

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

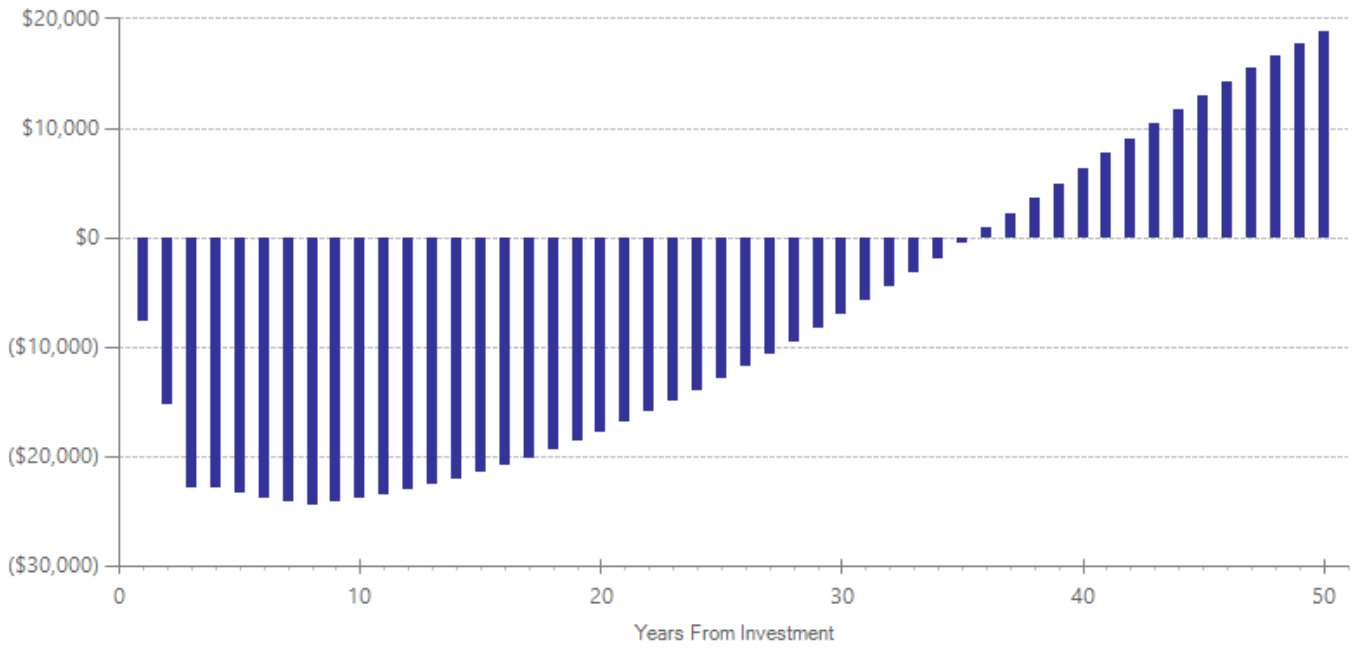
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$4,000	2002	Present value of net program costs (in 2015 dollars)	($14,782)
Comparison costs	$0	2002	Cost range (+ or -)	10 %

The effects of this program are based on three years of participation. Annual per-participant cost from Philliber et al. (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), 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Crime	Primary	1	485	-0.035	0.207	17	-0.035	0.207	27	-0.035	0.867
High school graduation	Primary	1	143	0.078	0.225	18	0.078	0.225	18	0.078	0.728
Teen pregnancy (under age 18)	Primary	1	242	-0.314	0.213	18	-0.314	0.213	18	-0.314	0.141
Initiation of sexual activity	Primary	1	242	-0.227	0.213	17	-0.227	0.213	18	-0.227	0.287
Teen births under age 18	Primary	1	242	-0.055	0.213	18	-0.055	0.213	18	-0.055	0.797
Teen births (second generation)	Secondary	1	242	-0.055	0.213	18	-0.055	0.213	18	-0.055	0.797
Alcohol use in high school	Primary	1	485	-0.121	0.204	17	-0.121	0.204	18	-0.121	0.552

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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 June 2016. Literature review updated April 2012.

Program Description: Formerly known as Children at Risk, CASASTART targets youth age 11 to 13 in high-risk neighborhoods. The program attempts to decrease youth exposure to crime and drug activity by providing intensive case management, family services such counseling and parent training, community-enhanced policing, after school activities, tutoring, mentoring and incentives including refreshments, vouchers, and special events. CASASTART also works with juvenile courts to provide community service opportunities and enhanced supervision for youth in the juvenile justice system.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	($417)	Benefit to cost ratio	($0.90)
Participants	($608)	Benefits minus costs	($13,443)
Others	($1,510)	Chance the program will produce benefits greater than the costs	20 %
Indirect	($3,835)		
Total benefits	($6,369)		
Net program cost	($7,075)		
Benefits minus cost	($13,443)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	($449)	($1,244)	($225)	($1,918)
Labor market earnings associated with high school graduation	($1,515)	($688)	($701)	($286)	($3,190)
K-12 grade repetition	$0	$208	$0	$103	$312
Labor market earnings associated with alcohol abuse or dependence	$742	$337	$0	$7	$1,086
Property loss associated with alcohol abuse or dependence	$2	$0	$3	$0	$5
Health care associated with illicit drug abuse or dependence	$43	$251	$225	$125	$644
Health care associated with educational attainment	$45	($164)	$179	($82)	($22)
Costs of higher education	$85	$101	$32	$51	$268
Adjustment for deadweight cost of program	($11)	($13)	($4)	($3,526)	($3,553)
Totals	($608)	($417)	($1,510)	($3,835)	($6,369)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

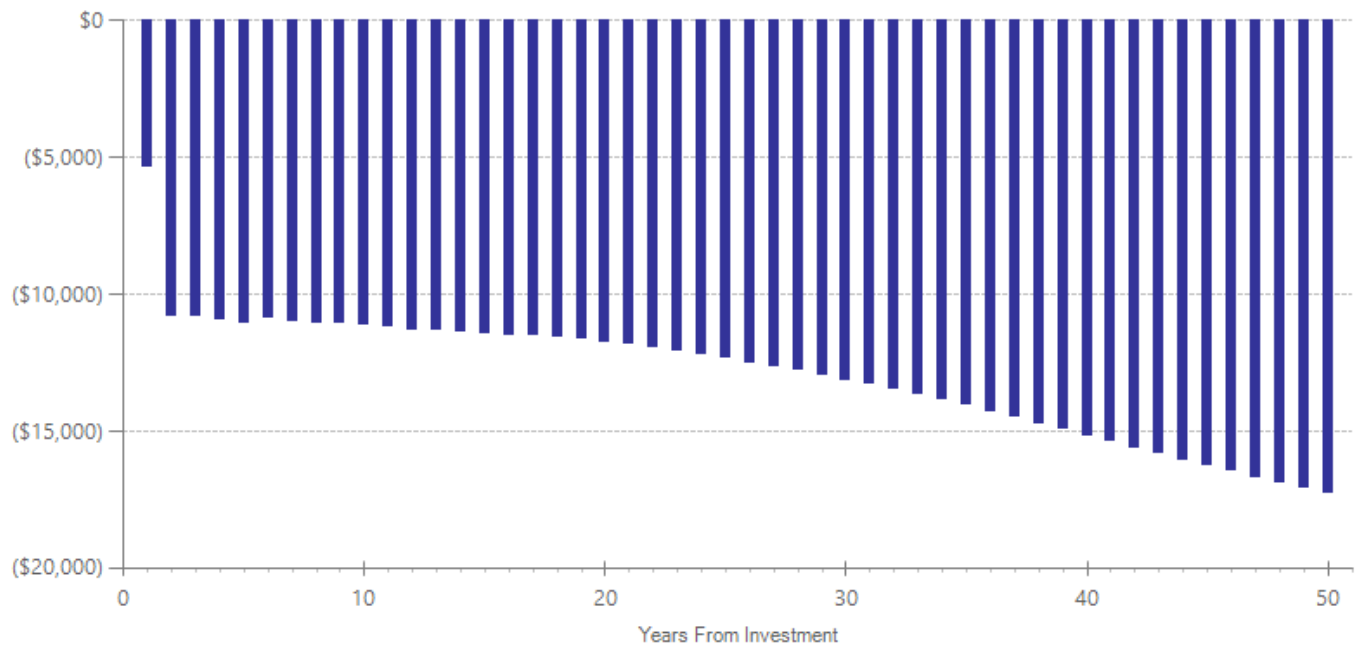
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$2,825	2002	Present value of net program costs (in 2015 dollars)	($7,075)
Comparison costs	$0	2002	Cost range (+ or -)	10 %

CASASTART costs $2,825 (2002 dollars) per participant per year for two years, as estimated by 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), Table 7.3.2. 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	2	408	0.065	0.198	14	0.065	0.198	24	0.065	0.741
K-12 grade repetition	1	264	-0.175	0.172	14	-0.175	0.172	17	-0.175	0.310
Alcohol use before end of middle school	1	144	-0.141	0.165	14	-0.141	0.165	15	-0.141	0.391
Illicit drug use before end of middle school	1	264	-0.295	0.222	14	-0.295	0.222	15	-0.295	0.183
Truancy	1	144	0.384	0.178	14	0.384	0.178	17	0.384	0.031
Illicit drug use	2	408	-0.027	0.213	14	-0.027	0.213	24	-0.027	0.899

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An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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 June 2016. Literature review updated April 2012.

Program Description: Fast Track is a comprehensive prevention program delivered over ten years. The program seeks to reduce multiple risk factors in children's lives by providing classroom sessions in elementary school, along with parent training groups, home visits, child social skill training groups, tutoring in reading, and peer pairing in the classroom. In 6th to 10th grades, youth and their parents attend group meetings and individualized services such as home visiting, family problem-solving sessions, and referrals to school and community services.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$2,453	Benefit to cost ratio	($0.35)
Participants	$1,880	Benefits minus costs	($82,628)
Others	$3,709	Chance the program will produce benefits greater than the costs	0 %
Indirect	($29,449)		
Total benefits	($21,407)		
Net program cost	($61,221)		
Benefits minus cost	($82,628)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$702	$1,769	$352	$2,822
Labor market earnings associated with high school graduation	$1,778	$807	$813	$277	$3,675
K-12 special education	$0	$56	$0	$28	$84
Health care associated with ADHD	$14	$44	$54	$22	$135
Health care associated with emergency department visits	$182	$956	$1,108	$478	$2,724
Costs of higher education	($94)	($111)	($35)	($56)	($296)
Adjustment for deadweight cost of program	$0	$0	$0	($30,550)	($30,550)
Totals	$1,880	$2,453	$3,709	($29,449)	($21,407)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

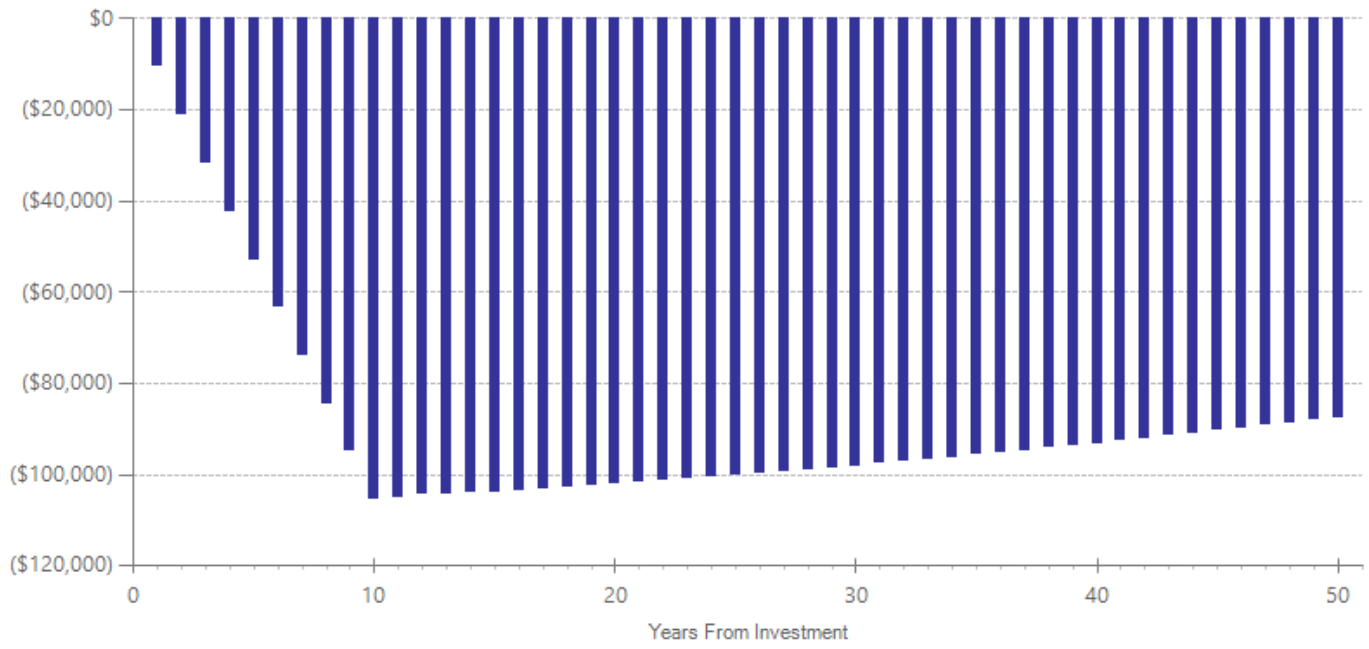
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$5,828	2004	Present value of net program costs (in 2015 dollars)	($61,221)
Comparison costs	$0	2004	Cost range (+ or -)	10 %

This intensive program is delivered over a ten-year period. We estimated costs from 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



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Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Crime	1	445	-0.173	0.067	15	-0.099	0.089	18	-0.173	0.010
Disruptive behavior disorder symptoms	1	445	-0.198	0.151	15	-0.028	0.098	17	-0.198	0.191
Attention deficit hyperactivity disorder symptoms	1	445	-0.151	0.117	15	-0.018	0.082	17	-0.151	0.199
Emergency department visits	1	445	-0.177	0.089	19	-0.177	0.089	29	-0.177	0.048
Hospitalization (psychiatric)	1	445	0.006	0.171	19	0.006	0.171	29	0.006	0.972

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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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.

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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 June 2016. Literature review updated December 2014.

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

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$1,645
Participants	$3,139
Others	$320
Indirect	$15,949
Total benefits	$21,052
Net program cost	($214)
Benefits minus cost	$20,838

Benefit to cost ratio	$98.17
Benefits minus costs	$20,838
Chance the program will produce benefits greater than the costs	95 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with smoking	$3,055	$1,387	$0	$15,927	$20,370
Health care associated with smoking	$84	$258	$320	$129	$790
Adjustment for deadweight cost of program	$0	$0	$0	($107)	($107)
Totals	$3,139	$1,645	$320	$15,949	$21,052

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

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

Summary	
Present value of net program costs (in 2015 dollars)	($214)
Cost range (+ or -)	10 %

Medicaid (and many private health insurance programs) funds quitlines at up-to-five calls and provide nicotine replacement therapy to a quarter of callers. The reimbursement is $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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant

The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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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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More intensive tobacco quitlines (compared to less intensive quitlines)

Benefit-cost estimates updated June 2016. Literature review updated December 2014.

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

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$1,650
Participants	$3,356
Others	$183
Indirect	$4,725
Total benefits	$9,915
Net program cost	($130)
Benefits minus cost	$9,784

Benefit to cost ratio	$76.10
Benefits minus costs	$9,784
Chance the program will produce benefits greater than the costs	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with smoking	$3,308	$1,502	$0	$4,716	$9,527
Health care associated with smoking	$48	$148	$183	$74	$453
Adjustment for deadweight cost of program	$0	$0	$0	($65)	($65)
Totals	$3,356	$1,650	$183	$4,725	$9,915

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

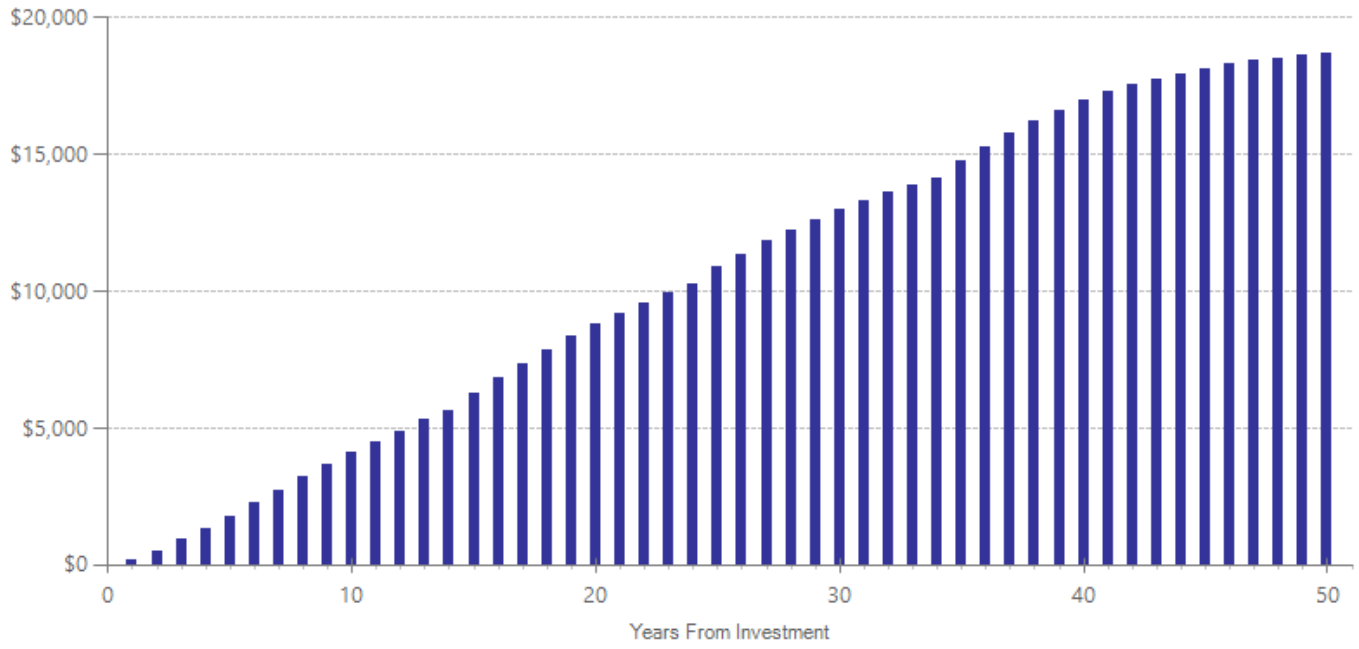
	Annual cost	Year dollars
Program costs	$214	2014
Comparison costs	$84	2014

Summary	
Present value of net program costs (in 2015 dollars)	($130)
Cost range (+ or -)	10 %

Medicaid (and many private health insurance programs) funds quitlines at up-to-five calls and nicotine replacement therapy (NRT) to about a quarter of callers. The reimbursement is $205 per person. (Email from Tonya Nichols at WA Health Care Authority and fee schedule for physician related services, code S9453). Comparison is the cost WA Department of Health pays for a single call for uninsured residents of Washington, including NRT to about a quarter 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Regular smoking	13	15098	-0.133	0.023	41	-0.133	0.023	42	-0.253	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Anti-smoking media campaign, youth effect

Benefit-cost estimates updated June 2016. 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 messages to inform and motivate individual to remain tobacco free." We append that definition only slightly to include interventions that motivate individuals to become tobacco free (in addition to remaining tobacco free), including mass media interventions aimed at cessation as well as prevention. The effects presented in this review represent only the effects of anti-smoking media campaigns on youth.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$987	Benefit to cost ratio	$153.77
Participants	$1,685	Benefits minus costs	$4,231
Others	$1,178	Chance the program will produce benefits greater than the costs	100 %
Indirect	$410		
Total benefits	$4,259		
Net program cost	($28)		
Benefits minus cost	$4,231		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$63	$150	$32	$245
Labor market earnings associated with high school graduation	$1,739	$790	$798	$325	$3,652
Health care associated with smoking	$71	$217	$269	$109	$665
Costs of higher education	($125)	($83)	($39)	($42)	($289)
Adjustment for deadweight cost of program	$0	$0	$0	($14)	($14)
Totals	$1,685	$987	$1,178	$410	$4,259

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

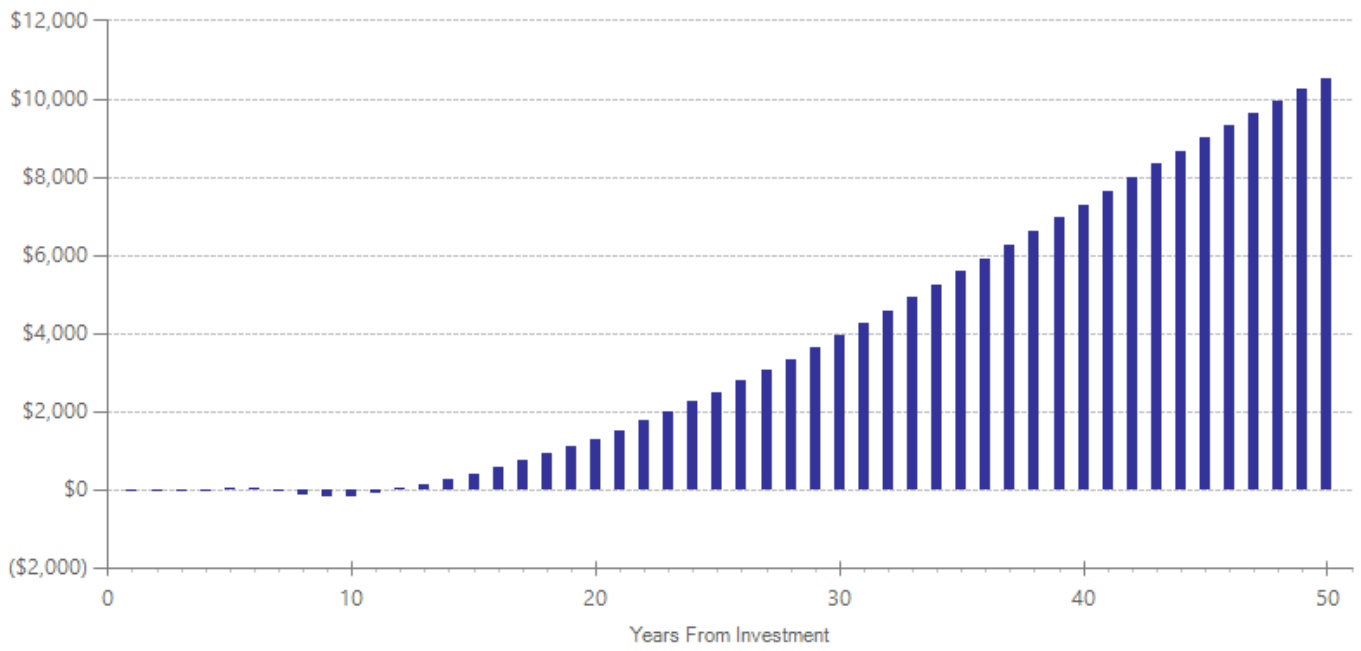
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$27	2012	Present value of net program costs (in 2015 dollars)	($28)
Comparison costs	$0	2012	Cost range (+ or -)	20 %

Estimated weighted average per capita 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 a 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Anti-smoking media campaigns, adult effect

Benefit-cost estimates updated June 2016. 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 messages to inform and motivate individual to remain tobacco free." We append that definition only slightly to include interventions that motivate individuals to become tobacco free (in addition to remaining tobacco free), including mass media interventions aimed at cessation as well as prevention. The effects presented in this review represent only the effects of anti-smoking media campaigns on adults.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$595	Benefit to cost ratio	$58.70
Participants	$1,013	Benefits minus costs	$2,032
Others	$197	Chance the program will produce	
Indirect	$262	benefits greater than the costs	86 %
Total benefits	$2,067		
Net program cost	($35)		
Benefits minus cost	$2,032		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with smoking	$961	$436	$0	$200	$1,597
Health care associated with smoking	$52	$159	$197	$80	$488
Adjustment for deadweight cost of program	$0	$0	$0	($18)	($18)
Totals	$1,013	$595	$197	$262	$2,067

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

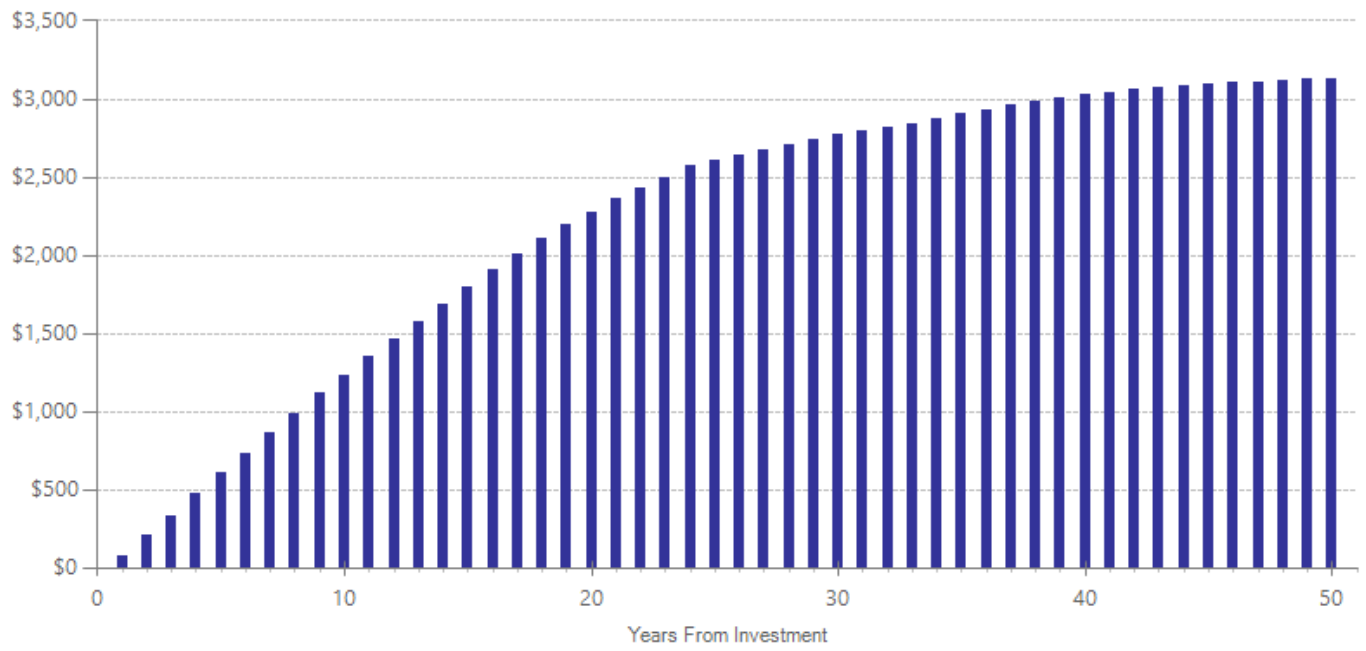
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$34	2012	Present value of net program costs (in 2015 dollars)	($35)
Comparison costs	$0	2012	Cost range (+ or -)	20 %

Estimated weighted average per capita smoker 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 a 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Multicomponent environmental interventions to prevent youth tobacco use

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: Multicomponent environmental interventions for reducing youth tobacco use target community policies and norms and outlets where youth purchase tobacco (e.g., retail tobacco shops, grocery or convenience stores). Interventions often start with community mobilization, media coverage of youth substance use and potential harm, and merchant education. Interventions were implemented across a range of rural and urban communities, for varying periods of time (approximately 2-3 years). In this analysis we only include interventions with a component targeting illegal retail tobacco sales to minors. We include four studies that isolate effects of community-level intervention. Two compare intervention sites to sites receiving no intervention, and two compare sites with a school-based program only to sites with both school-based and community-level intervention. Most interventions were implemented in the mid-1990's, paralleling implementation of state and federal tobacco control policies.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$346
Participants	$597
Others	$388
Indirect	($42)
Total benefits	$1,288
Net program cost	($155)
Benefits minus cost	$1,133

Benefit to cost ratio	$8.32
Benefits minus costs	$1,133
Chance the program will produce benefits greater than the costs	86 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Labor market earnings associated with high school graduation	$608	$276	$279	$0	$1,164
Health care associated with smoking	$32	$99	$122	$49	$302
Costs of higher education	($44)	($29)	($14)	($15)	($101)
Adjustment for deadweight cost of program	$0	$0	$0	($77)	($77)
Totals	$597	$346	$388	($42)	$1,288

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

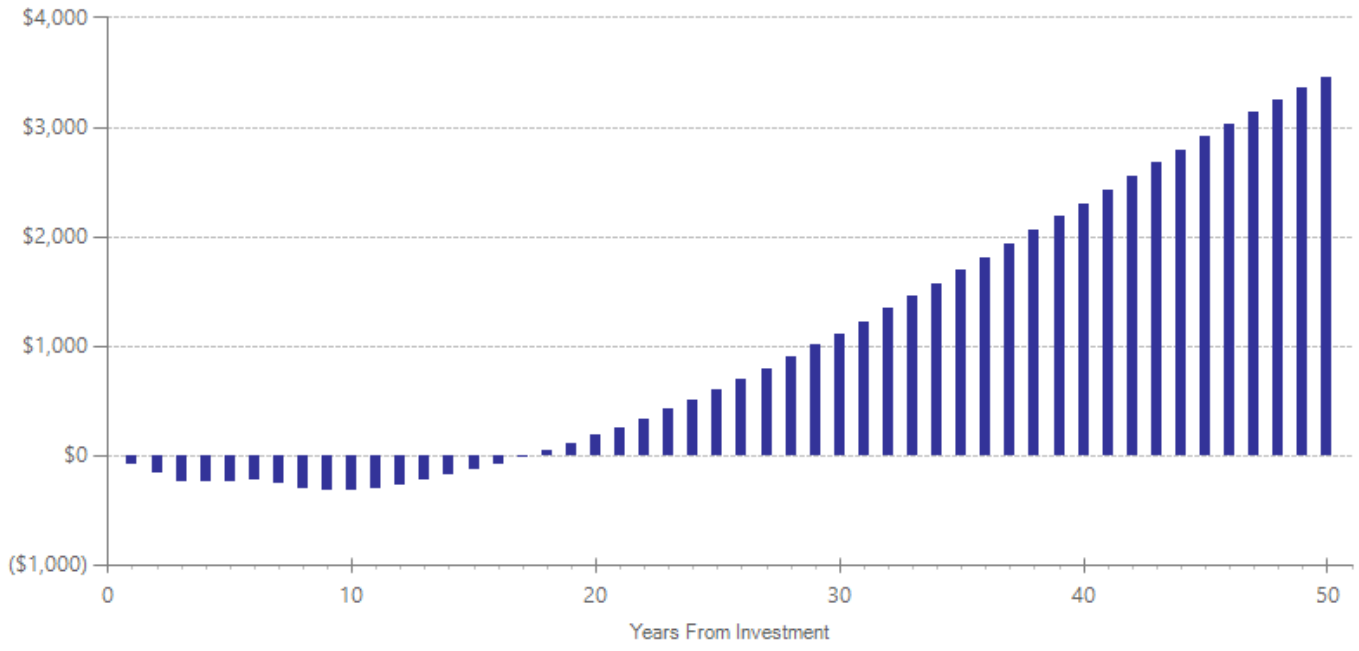
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$53	2015	Present value of net program costs (in 2015 dollars)	($155)
Comparison costs	$0	2015	Cost range (+ or -)	30 %

Estimated program costs are based on the SAMHSA NREPP cost report for the Communities Mobilizing for Change on Alcohol intervention. We include costs for a community organizer and their expenses, and also for intensive training through the Youth Leadership Institute (http://yli.org/communities-mobilizing-for-change-on-alcohol/), assuming that the effects found in research evaluations were produced by community organizers with high levels of training and support.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking before end of middle school	2	2882	-0.017	0.028	12	-0.017	0.028	15	-0.051	0.067
Smoking in high school	2	2261	-0.047	0.035	15	-0.047	0.035	18	-0.145	0.001
Sales to minors (tobacco)	4	123	-0.324	0.153	12	n/a	n/a	n/a	-0.709	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

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Citations Used in the Meta-Analysis

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Triple-P Positive Parenting Program (System)

Benefit-cost estimates updated June 2016. Literature review updated April 2012.

Program Description: Triple P Positive Parenting Program (system) is a universal prevention program that aims to increase the skills and confidence of parents to prevent the development of serious behavioral and emotional problems in their children. Triple P has five levels of intensity. The first 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 Statistics Per Participant

Benefits to:

Taxpayers	$387	Benefit to cost ratio	$7.48
Participants	$675	Benefits minus costs	$970
Others	$62	Chance the program will produce benefits greater than the costs	63 %
Indirect	($4)		
Total benefits	$1,120		
Net program cost	($150)		
Benefits minus cost	$970		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$20	$42	$10	$73
Child abuse and neglect	$138	$6	$0	$3	$148
Out-of-home placement	$0	$82	$0	$41	$123
K-12 grade repetition	$0	$3	$0	$2	$5
K-12 special education	$0	$18	$0	$9	$26
Property loss associated with alcohol abuse or dependence	$0	$0	$0	$0	$0
Health care associated with PTSD	$7	$21	$26	$10	$63
Labor market earnings associated with child abuse & neglect	$548	$249	$0	$2	$799
Costs of higher education	($18)	($12)	($6)	($6)	($42)
Adjustment for deadweight cost of program	$0	$0	$0	($75)	($75)
Totals	$675	$387	$62	($4)	$1,120

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

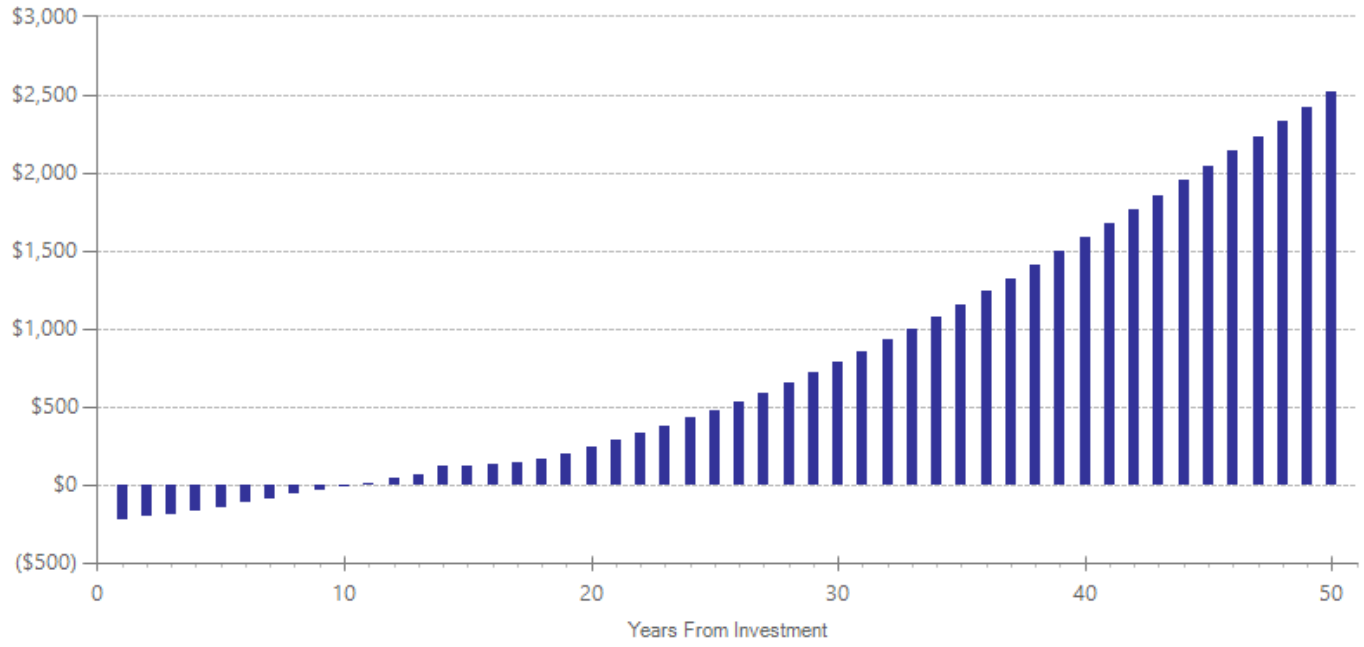
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$137	2008	Present value of net program costs (in 2015 dollars)	($150)
Comparison costs	$0	2008	Cost range (+ or -)	20 %

Training costs for all levels were summed 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. We used population information from the program evaluation to estimate the cost per child in the community. Level 4 and 5 parenting program costs were estimated by multiplying average Washington cost per family (provided by Kimberlee Shoecraft, WA Department of Social and Health Services, personal communication, April 2012) by 10% of the population assumed to receive the parenting program, distributed over 100% 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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Child abuse and neglect	1	96650	-0.050	0.121	6	-0.050	0.121	17	-0.139	0.274
Out-of-home placement	1	96650	-0.108	0.147	6	-0.108	0.147	17	-0.300	0.041

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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.

Multicomponent environmental interventions to prevent youth alcohol use

Benefit-cost estimates updated June 2016. Literature review updated June 2016.

Program Description: Multicomponent environmental interventions for reducing youth alcohol use target community policies and norms, and outlets where youth purchase alcohol (e.g., retail alcohol outlets, grocery or convenience stores). Interventions often start with community mobilization, media coverage of youth substance use and potential harm, and merchant education. Interventions were implemented across a range of rural and urban communities, for varying periods of time (approximately 1-2.5 years). In this analysis we only include interventions with a component targeting illegal retail alcohol sales to minors. We include three studies that isolate effects of community-level intervention by comparing intervention sites to sites receiving no intervention.

Benefit-Cost Summary Statistics Per Participant

Benefits to:			
Taxpayers	($37)	Benefit to cost ratio	($1.64)
Participants	($69)	Benefits minus costs	($278)
Others	($10)	Chance the program will produce benefits greater than the costs	27 %
Indirect	($56)		
Total benefits	($173)		
Net program cost	($105)		
Benefits minus cost	($278)		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2015). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	($3)	($7)	($2)	($12)
Labor market earnings associated with alcohol abuse or dependence	($71)	($32)	$0	($1)	($104)
Health care associated with alcohol abuse or dependence	($1)	($3)	($3)	($2)	($9)
Property loss associated with alcohol abuse or dependence	$0	$0	$0	$0	$0
Costs of higher education	$3	$2	$1	$1	$6
Adjustment for deadweight cost of program	$0	$0	$0	($53)	($53)
Totals	($69)	($37)	($10)	($56)	($173)

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

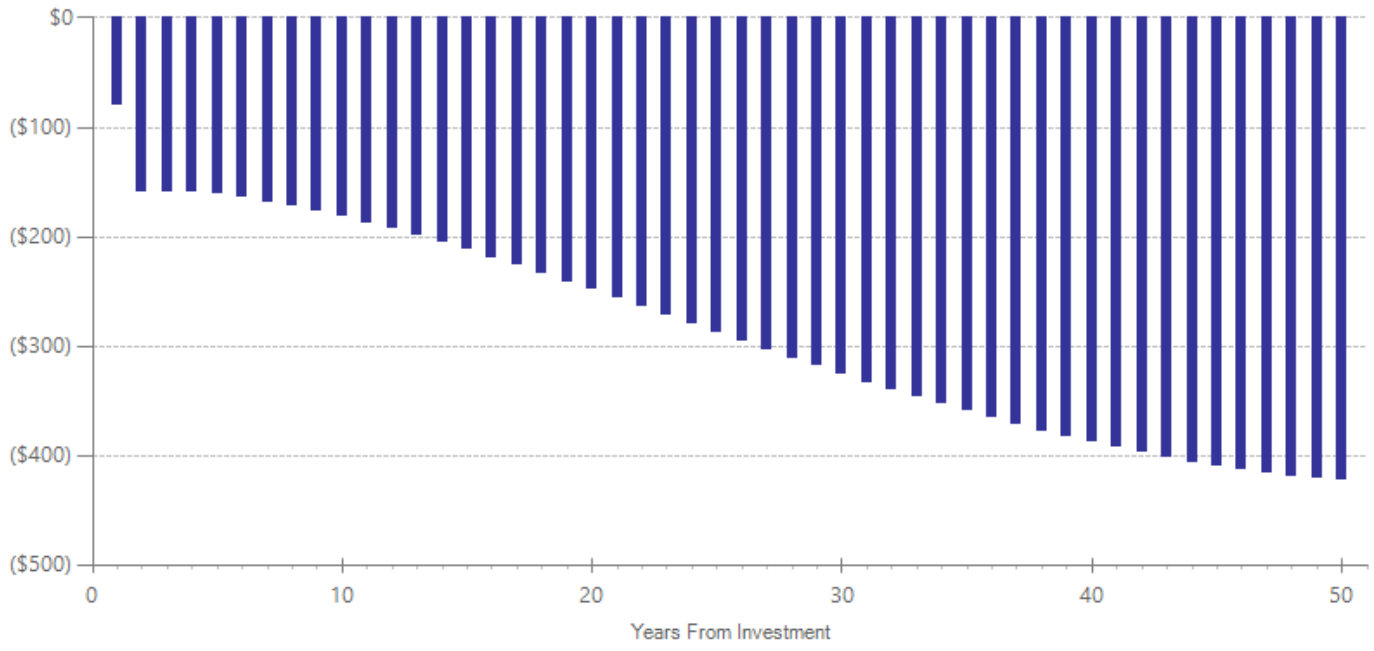
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$53	2015	Present value of net program costs (in 2015 dollars)	($105)
Comparison costs	$0	2015	Cost range (+ or -)	30 %

Estimated program costs are based on the SAMHSA NREPP cost report for the Communities Mobilizing for Change on Alcohol intervention. We include costs for a community organizer and their expenses, and also for intensive training through the Youth Leadership Institute (http://yli.org/communities-mobilizing-for-change-on-alcohol/), assuming that the effects found in research evaluations were produced by community organizers with high levels of training and support.

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 cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	2	5878	0.000	0.022	17	0.000	0.022	18	-0.002	0.943
Youth binge drinking	2	5878	0.006	0.024	17	0.006	0.024	18	0.018	0.492
Sales to minors (alcohol)	5	822	-0.105	0.077	17	n/a	n/a	n/a	-0.324	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

Flewelling, R.L., Grube, J.W., Paschall, M.J., Biglan, A., Kraft, A., Black, C., Hanley, S. M., ... Ruscoe, J. (2013). Reducing Youth Access to Alcohol: findings from a community-based randomized trial. *American Journal of Community Psychology, 51,* 264-277.

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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 12th-grade students).

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Initiation of sexual activity	4	3381	-0.004	0.038	14	-0.004	0.038	24	-0.200	0.094

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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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Mellanby, A. R., Phelps, F. A., Crichton, N. J., & Tripp, J. H. (1995). School sex education: An experimental programme with educational and medical benefit. *British Medical Journal, 311*(7002), 414-417.

Protecting You/Protecting Me

Literature review updated June 2016.

Program Description: Protecting You/Protecting Me (PY/PM) is a classroom-based alcohol prevention program for elementary school students. The program aims to reduce underage alcohol use, and injury or death associated with riding in vehicles with drunk drivers. PY/PM consists of a series of 40 developmentally appropriate lessons, with 8 lessons per year for grades 1-5. Weekly lessons are approximately 30 minutes or 1 hour in duration, depending on the grade level, and are delivered by teachers or high school students. PY/PM lessons and activities focus on teaching children about alcohol and the brain, vehicle safety, and life skills.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	1	280	-0.067	0.244	11	-0.067	0.244	15	-0.204	0.381

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

Padget, A., Bell, M., Shamblen, S., & Ringwalt, C. (2006). Does learning about the effects of alcohol on the developing brain affect children's alcohol use? *Prevention Science, 7*(3), 293-302.

Raising Healthy Children

Literature review updated June 2016.

Program Description: Raising Healthy Children is a long-term school-based prevention program designed to increase students' bonds to school and prevent problem behaviors. The intervention begins in grade 1 and continues through grade 7. Teachers in those grades attend workshops in classroom management, cooperative learning methods and strategies to promote student reading, participation and interpersonal skills. In grades 4-6, the program provides after-school tutoring and includes family participation workshops, after-school homework clubs, summer camp, and retreats for students. This study followed students who began the program in 1st and 2nd grade and measured until grade 10. The program is based on the model used for the Seattle Social Development Project, which is a shorter intervention.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	1	480	-0.018	0.078	15	-0.018	0.078	18	-0.049	0.535
Smoking in high school	1	480	-0.017	0.105	15	-0.017	0.105	18	-0.044	0.677
Cannabis use in high school	1	480	-0.035	0.088	15	-0.035	0.088	18	-0.093	0.293
Disruptive behavior disorder symptoms	1	497	-0.018	0.065	9	-0.008	0.034	12	-0.047	0.476
Traffic accident	1	283	0.013	0.116	17	n/a	n/a	n/a	0.035	0.785

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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School-based service learning

Literature review updated April 2012.

Program Description: School-based service learning programs are typically delivered to high school students. They 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 thinking skills and help students develop as individuals and 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	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Teen pregnancy (under age 18)	3	680	-0.053	0.270	16	-0.053	0.270	26	-0.050	0.852

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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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=0.65) in effects on teens initiating sexual activity; only comprehensive programs measured pregnancy outcomes. Usually the programs lasted less than two months, however, a few were offered over two school years. Students were typically middle school- to early high school-age and most programs were led 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 in our meta-analysis 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	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Teen pregnancy (under age 18)	4	6130	0.121	0.080	17	0.121	0.080	27	0.102	0.029
Initiation of sexual activity	8	5474	-0.024	0.064	15	-0.024	0.064	25	-0.063	0.410

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STARS (Start Taking Alcohol Risks Seriously) for Families

Literature review updated June 2016.

Program Description: STARS (Start Taking Alcohol Risks Seriously) for Families is a universal program in which students entering 6th grade receive an individual health consultation with a school nurse addressing up to 12 risk factors. During the spring semester parents are sent up to 10 weekly postcards, requesting parents to take a few minutes to read and talk to their child about a key fact found on the card to help the child stay away from alcohol. Postcards are tailored to address particular risk factors identified in the health consultation. In the 7th grade, students receive another nurse consultation and a series of four family take-home lessons during the spring semester.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	1	100	-0.060	0.296	14	-0.060	0.296	15	-0.182	0.568

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Citations Used in the Meta-Analysis

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Curriculum-based support groups (CBSG)

Literature review updated June 2016.

Program Description: The Curriculum-Based Support Group (CBSG) program is a preventive intervention for youth between the ages of 4 and 17 identified as at-risk for future substance abuse, delinquency, and violence. The program is delivered in confidential small group sessions led by trained facilitators and is designed to help participants resist peer pressure, set and achieve goals, and make healthy choices. In the study included in this analysis, students in grades 2 through 5 participated in 12 weekly sessions. Each session lasted approximately one hour and group size was limited to 12 students.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	1	147	0.000	0.170	9	0.000	0.170	13	0.000	1.000
Cannabis use before end of middle school	1	147	0.000	0.170	9	0.000	0.170	13	0.000	1.000
Smoking before end of middle school	1	147	0.000	0.170	9	0.000	0.170	13	0.000	1.000
Illicit drug use before end of middle school	1	147	0.000	0.170	9	0.000	0.170	13	0.000	1.000

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Citations Used in the Meta-Analysis

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School-based programs to create a healthy food environment

Literature review updated November 2015.

Program Description: These programs improve the food environment in schools through changes such as removing soda and energy dense food from cafeterias and vending machines, improving the nutrition of school meals, promoting water consumption, and encouraging students to bring healthier food from home. Twelve of the 14 programs included in this review also included increased opportunities for physical activity during the school day.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	14	12400	-0.106	0.039	10	0.000	0.101	12	-0.106	0.007

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Citations Used in the Meta-Analysis

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Athletes Training and Learning to Avoid Steroids (ATLAS)

Literature review updated June 2016.

Program Description: This program for male high school athletes involves 7 classes on the effects of anabolic steroids conducted by coaches, 7 weight training sessions, and one parent session during the sports season.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Drinking and driving	1	1145	0.002	0.124	17	0.000	0.186	19	0.005	0.971
Illicit drug use in high school	1	1145	0.022	0.124	17	0.022	0.124	27	0.067	0.590
Anabolic steriod use	2	1677	-0.019	0.089	17	n/a	n/a	n/a	-0.058	0.512

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Citations Used in the Meta-Analysis

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Reconnecting Youth

Literature review updated December 2014.

Program Description: Reconnecting Youth, a school-based curriculum program for high school students, is designed to address a variety of behaviors, such as attendance, academic achievement, disruptive behavior, and substance abuse. The program targets youth who have been identified as already experimenting with drugs and who have a high potential for dropping out, as identified by school records or personnel. By building life skills, fostering a bond to the school and family, and encouraging self-esteem, the program aims to build positive resistance skills and decrease risk factors.

Meta-Analysis of Program Effects

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

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Citations Used in the Meta-Analysis

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Strong African American Families

Literature review updated June 2016.

Program Description: Strong African American Families (SAAF) is a seven-week community-based program developed for African American youth ages 11-12 and their caregivers. Families meet in interactive small groups with trained facilitators once a week for 2 hours. Lessons are intended to promote regulated, communicative parenting (monitoring and setting limits, clear communication around expectations about alcohol and sex, and racial socialization), as well as youth protective factors. The aim of this program is to prevent youth drug and alcohol abuse, and postpone youth sexual involvement.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	Primary	1	326	-0.083	0.121	13	-0.083	0.121	15	-0.218	0.076
Alcohol use in high school	Primary	1	326	-0.051	0.090	16	-0.051	0.090	18	-0.134	0.137
Major depressive disorder	Secondary	1	369	-0.016	0.083	40	-0.008	0.102	42	-0.043	0.608
Disruptive behavior disorder symptoms	Primary	1	241	-0.105	0.142	13	-0.050	0.076	16	-0.276	0.052

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Citations Used in the Meta-Analysis

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Body Project

Literature review updated June 2016.

Program Description: Body Project is a brief 3 or 4 session group intervention for adolescent girls and young women with body image concerns. The program is focused on creating dissonance in girls regarding the thin ideal, with the goal of reducing eating disorders.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Major depressive disorder	1	139	-0.054	0.122	20	-0.028	0.150	21	-0.143	0.241
Weight change	2	342	0.006	0.080	20	0.000	0.070	22	0.016	0.837
Primary care visits	1	203	-0.013	0.105	20	n/a	n/a	n/a	-0.033	0.750
Obesity	1	75	0.099	0.248	21	0.000	0.101	23	0.261	0.276
Eating disorder	3	457	-0.065	0.105	20	n/a	n/a	n/a	-0.171	0.104

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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 and 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	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Child abuse and neglect	Secondary	1	78	-0.251	0.199	5	-0.251	0.199	17	-0.448	0.030
Major depressive disorder	Primary	1	58	-0.281	0.186	29	-0.138	0.202	31	-0.501	0.008
Externalizing behavior symptoms	Secondary	1	58	-0.302	0.186	3	-0.144	0.114	6	-0.540	0.004
Internalizing symptoms	Secondary	1	58	-0.137	0.185	3	-0.099	0.149	5	-0.244	0.189

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WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Strong African American Families—Teen

Literature review updated June 2016.

Program Description: Strong African American Families - Teen is a five-week community-based program developed for 16 year-old African American youth and their caregivers. Families meet in interactive small groups with trained facilitators once a week for 2 hours. Lessons are intended to promote protective caregiving (setting limits, monitoring, racial pride and strategies for dealing with discrimination, monitoring and supporting academic achievement, and cooperative problem solving), as well as youth self-regulation. The aim of this program is to deter youth substance use, conduct problems, and depressive symptoms.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	1	237	-0.090	0.111	18	-0.090	0.111	18	-0.236	0.033
Major depressive disorder	1	237	-0.090	0.111	18	0.000	0.012	19	-0.236	0.033
Disruptive behavior disorder symptoms	1	237	-0.029	0.147	18	-0.014	0.076	21	-0.076	0.629
Youth binge drinking	1	237	-0.068	0.111	18	-0.068	0.111	18	-0.179	0.106

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Citations Used in the Meta-Analysis

Brody, G.H., Chen, Y.F., Kogan, S.M., Yu, T., Molgaard, V.K., DiClemente, R.J., Wingood, G.M. (2012). Family-centered program deters substance use, conduct problems, and depressive symptoms in black adolescents. *Pediatrics, 129*(1), 108-15.

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Adolescent Sibling Pregnancy Prevention

Literature review updated April 2012.

Program Description: The 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	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Teen pregnancy (under age 18)	1	731	-0.188	0.052	14	-0.188	0.052	24	-0.188	0.001
Initiation of sexual activity	1	607	-0.282	0.058	14	-0.282	0.058	24	-0.282	0.001
Truancy	1	731	-0.045	0.052	14	-0.045	0.052	24	-0.045	0.393

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WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

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Teen Outreach Program

Literature review updated April 2012.

Program Description: The Teen Outreach Program (TOP) is a volunteer service learning program for high school students. TOP is aimed at high-risk adolescents and consists 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. The volunteer service is coupled with classroom discussions of the volunteer experience as well as other topics (15% or less on sexuality) with trained teachers/facilitators. Trained program staff coordinate with community agencies to place students.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Teen pregnancy (under age 18)	2	359	-0.212	0.177	17	-0.212	0.177	27	-0.554	0.008
Suspensions/expulsions	1	332	-0.217	0.109	17	-0.217	0.109	18	-0.570	0.001

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Citations Used in the Meta-Analysis

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Workplace-wide interventions to prevent obesity

Literature review updated November 2015.

Program Description: Workplace-wide initiatives to reduce obesity target all employees. We only included studies that measured the impact of the programs on all employees, regardless of whether they participated. The interventions included in this analysis varied widely, but included at least one of the following program components: weight loss or healthy eating competitions; fitness classes and walking clubs; classes or information on obesity prevention; newsletters, signs and posters promoting healthy choices; onsite farmers markets; increased availability of healthy food and vending options; and decreased price of healthy food and drinks.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	4	1338	-0.010	0.039	47	0.000	0.086	49	-0.010	0.809

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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Compliance checks for alcohol

Literature review updated June 2016.

Program Description: Checking and providing feedback to outlets on their compliance with minimum age laws is intended to reduce the retail supply of alcohol to youth. Studies in this analysis included a range of consequences for being caught selling alcohol to minors (warnings, fines, and threat of license revocation). Two of the three studies in this analysis also included a reward (congratulatory note) for compliance with minimum age laws. Compliance check campaigns typically include retailer education and media coverage to enhance retailers' perception of enforcement. Studies included in this analysis range from short-term interventions of 1-2 waves of compliance checks over several months to longer-term interventions with multiple compliance checks over a 2-year period.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use in high school	1	1274	-0.243	0.050	16	-0.243	0.050	18	-0.243	0.001
Youth binge drinking	1	1274	-0.209	0.055	16	-0.209	0.055	18	-0.209	0.001
Sales to minors (alcohol)	3	708	-0.347	0.299	16	n/a	n/a	n/a	-0.511	0.149

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Citations Used in the Meta-Analysis

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Compliance checks for tobacco

Literature review updated June 2016.

Program Description: Checking and providing feedback to outlets on their compliance with minimum age laws is intended to reduce the retail supply of tobacco to youth. Studies in this analysis included a range of consequences for being caught selling tobacco to minors (warnings, fines, and threat of license revocation). One of five studies in this analysis also included a reward (congratulatory note) for compliance with minimum age laws. Compliance check campaigns typically include retailer education and media coverage to enhance retailers' perception of enforcement. Studies included in this analysis range from short-term interventions of 1-2 waves of compliance checks over several months to longer-term interventions with multiple compliance checks over a 1-2 year period. Most interventions were implemented in the mid-1990's, paralleling implementation of state and federal tobacco control policies.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Smoking in high school	1	3002	0.088	0.161	15	0.088	0.161	18	0.088	0.586
Sales to minors (tobacco)	7	586	-0.526	0.212	15	n/a	n/a	n/a	-1.321	0.003

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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Soda taxes: a 1% higher tax on soda than on other food items

Literature review updated November 2015.

Program Description: Our review included two rigorous studies that investigated the relationship between a) taxes on soda that are greater than taxes on other food items, and b) obesity. One study examined the impact of soda taxes on children ages 3-18 and the other study examined the impact of soda taxes on adults at least 18 years of age. The effects presented here reflect a 1% increase in soda taxes beyond typical food tax rates.

Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Obesity	2	1365734	0.000	0.001	45	0.000	0.086	47	0.000	0.857

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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. The effects presented in this meta-analysis reflect the effects of a 10% increase in cigarette taxes.

Meta-Analysis of Program Effects

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

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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. The effects presented in this meta-analysis reflect the effects of a 10% increase in cigarette taxes.

Meta-Analysis of Program Effects

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

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

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