PROSPER

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

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

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.

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.

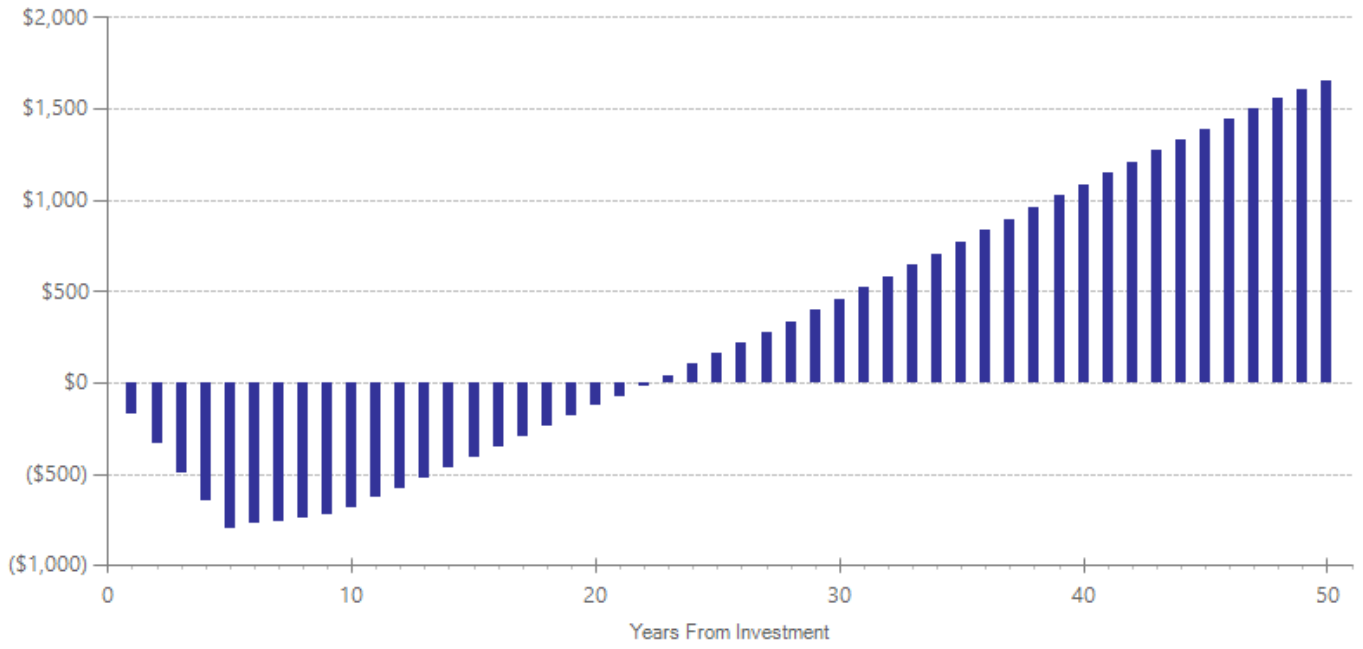
Detailed Annual Cost Estimates Per Participant

	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



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
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

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

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.

For further information, contact:
(360) 664-9800, institute@wsipp.wa.gov

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Washington State Institute for Public Policy

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