Washington State Institute for Public Policy

Benefit-Cost Results

Stop Now and Plan (SNAP)

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2023. Literature review updated July 2018.

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: Stop Now and Plan (SNAP) is a cognitive behavioral model for teaching children with disruptive behavior disorders and their parents effective emotional regulation, self-control, and problem-solving skills. SNAP offers separate programs for girls and boys aged 6-11. Children are recruited through referrals by either schools or juvenile courts. The SNAP model consists of 12 weekly group sessions conducted in local clinics designed to teach children to stop and think before acting, keep them involved in school, and avoid delinquent and criminal conduct. In separate group sessions, parents learn parenting skills and strategies to cope with their own emotions related to their children's behavior. In addition to the group sessions, SNAP provides services to meet the needs of individual families. These services may include booster sessions, family counseling, academic tutoring, school advocacy, and mentoring.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$5,971
Participants	$3,990
Others	$10,062
Indirect	($296)
Total benefits	$19,727
Net program cost	($4,804)
Benefits minus cost	$14,923

Benefit to cost ratio	$4.11
Benefits minus costs	$14,923
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 (2022). 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.

Meta-Analysis of Program Effects

Outcomes measured	Treatment age	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
Attention-deficit/hyperactivity disorder symptoms	9	1	40	-0.062	0.237	9	0.000	0.141	10	-0.141	0.556
Disruptive behavior disorder symptoms	9	3	166	-0.233	0.114	9	-0.128	0.088	12	-0.479	0.001
Internalizing symptoms	9	2	150	-0.284	0.120	9	-0.284	0.120	11	-0.319	0.008
Crime	9	1	80	-0.441	0.273	10	-0.441	0.273	20	-0.441	0.106

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.

Detailed Monetary Benefit Estimates Per Participant

Affected outcome:	Resulting benefits:[1]	Benefits accrue to:				
		Taxpayers	Participants	Others[2]	Indirect[3]	Total
Crime	Criminal justice system	$3,095	$0	$7,075	$1,547	$11,717
Crime	Labor market earnings associated with high school graduation	$1,759	$4,143	$2,251	$0	$8,153
Disruptive behavior disorder symptoms	K-12 grade repetition	$12	$0	$0	$6	$18
Disruptive behavior disorder symptoms	K-12 special education	$536	$0	$0	$268	$803
Disruptive behavior disorder symptoms	Health care associated with disruptive behavior disorder	$825	$233	$851	$412	$2,322
Crime	Costs of higher education	($255)	($386)	($116)	($127)	($884)
Program cost	Adjustment for deadweight cost of program	$0	$0	$0	($2,402)	($2,402)
Totals		$5,971	$3,990	$10,062	($296)	$19,727

[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.

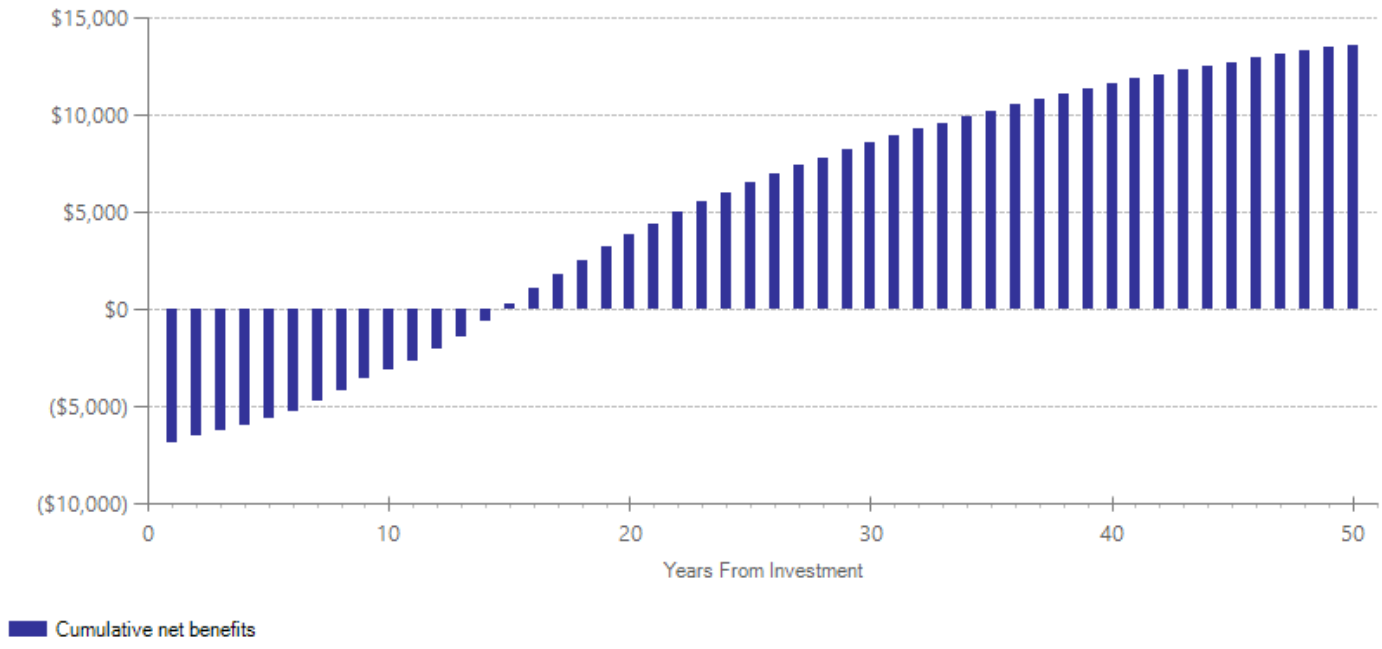
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$4,817	2012	Present value of net program costs (in 2022 dollars)	($4,804)
Comparison costs	$868	2010	Cost range (+ or -)	30%

SNAP is a 12-week program. We estimated the cost of the treatment group using cost estimates in Farrington and Koegl, 2015 (as recommended by Leena Augimeri via personal communication, August 2018). All treatment group costs were converted from Canadian dollars to US dollars using the average exchange rate from the year the costs were measured. (http://www.canadianforex.ca/forex-tools/historical-rate-tools/yearly-average-rates). Farrington, D.P., & Koegl, C.J. (2015). Monetary benefits and costs of the Stop Now And Plan Program for boys aged 6–11, based on the prevention of later offending. Journal of Quantitative Criminology, 31(2), 263-287. For the comparison group costs we use 2010 Washington State DSHS data to estimate the average reimbursement rate for treatment of child and adolescent disruptive behavior disorders.

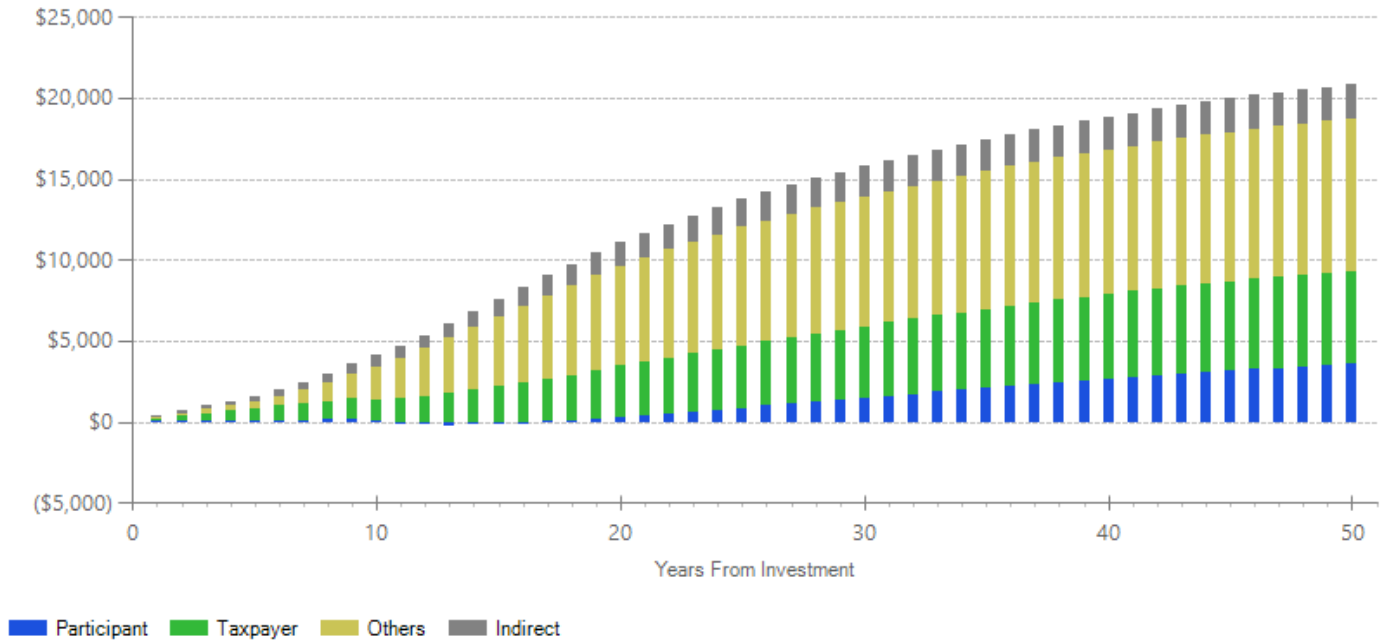
The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Benefits Minus Costs Over Time (Cumulative Discounted Dollars)



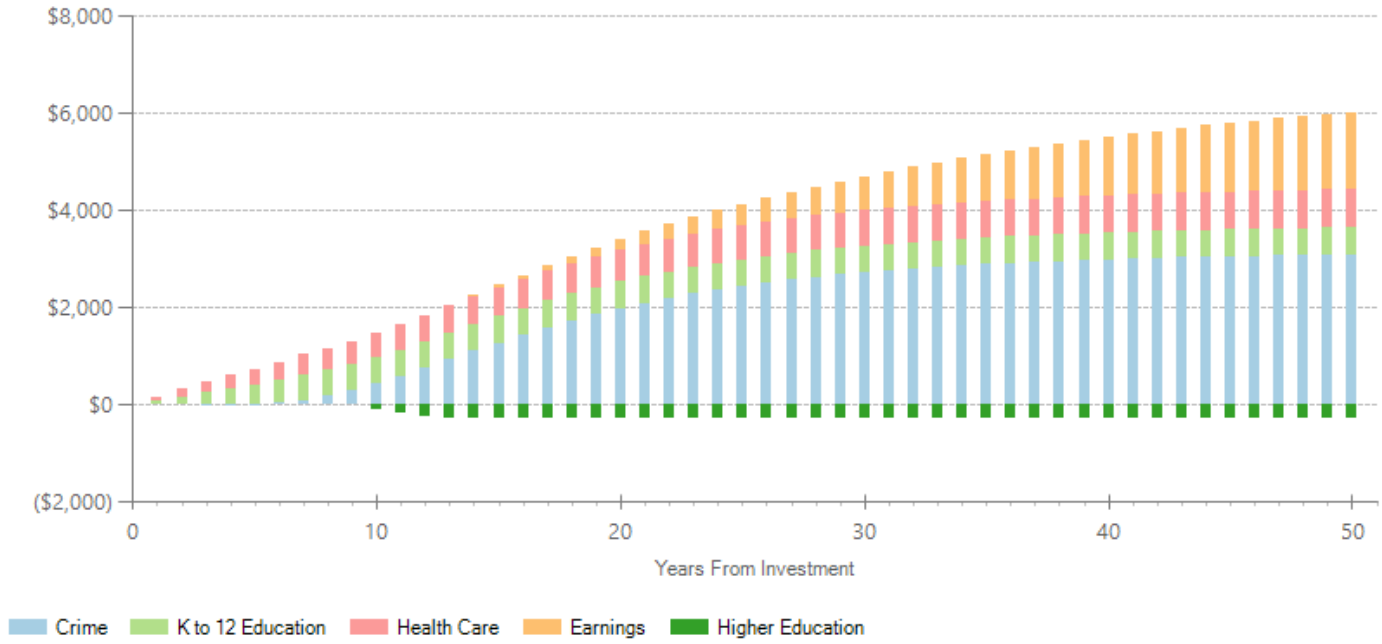
The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in discounted dollars. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost 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.

Benefits by Perspective Over Time (Cumulative Discounted Dollars)



The graph above illustrates the breakdown of the estimated cumulative benefits (not including program costs) per-participant for the first fifty years beyond the initial investment in the program. These cash flows provide a breakdown of the classification of dollars over time into four perspectives: taxpayer, participant, others, and indirect. “Taxpayers” includes expected savings to government and expected increases in tax revenue. “Participants” includes expected increases in earnings and expenditures for items such as health care and college tuition. “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. “Indirect benefits” includes estimates of the changes in the value of a statistical life and changes in the deadweight costs of taxation. If a section of the bar is below the $0 line, the program is creating a negative benefit, meaning a loss of value from that perspective.

Taxpayer Benefits by Source of Value Over Time (Cumulative Discounted Dollars)



The graph above focuses on the subset of estimated cumulative benefits that accrue to taxpayers. The cash flows are divided into the source of the value.

Citations Used in the Meta-Analysis

Augimeri, L.K., Farrington, D.P., Koegl, C.J., & Day, D.M. (2007). The SNAP™ Under 12 Outreach Project: Effects of a community based program for children with conduct problems. *Journal of Child and Family Studies, 16*(6), 799-807.

Burke, J.D., & Loeber, R. (2015). The Effectiveness of the Stop Now and Plan (SNAP) program for boys at risk for violence and delinquency. *Prevention Science, 16*(2), 242-253.

Pepler, D., Walsh, M., Yuile, A., Levene, K., Jiang, D., Vaughan, A., & Webber, J. (2010). Bridging the gender gap: interventions with aggressive girls and their parents. *Prevention Science: the Official Journal of the Society for Prevention Research, 11*(3), 229-38.

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