Vocational and employment training

Juvenile Justice

Benefit-cost estimates updated December 2016. Literature review updated September 2015.

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: Vocational and employment training programs for juvenile offenders can be community-based residential and non-residential programs or take place during incarceration. Training typically consists of classroom-based or unpaid job experiences that teach juveniles employable skills such as construction and carpentry trades, landscaping, or culinary arts. Most programs combine vocational skills training with academic education or tutoring and provide some job search assistance such as interview preparation, resume building, or job placement services over a period of three to ten months.

The studies included in this meta-analysis consist of federal government-initiated workforce training programs that have an offender subgroup, state juvenile justice department programs, and programs operated through private organizations (i.e. the Homebuilders Institute). Using regression analysis on the studies included in the meta-analysis, we tested whether specific program components (vocational education, employment experiences, academic education, etc.) have a differentiated effect on crime. Programs with a vocational education component have greater reductions in crime with a statistically significant effect ($p = 0.0001$). However, the interaction between participation in vocational education and months spent in the program has a significant negative effect. That is, the longer a subject participates in vocational education, the greater the increase in crime ($p = 0.0087$). Programs with an academic education component also show reductions in crime ($p = 0.0531$) and no statistically significant interaction with months in the program. Programs that utilize unpaid employment experiences show statistically significant increases in crime ($p = 0.0001$).

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$5,322	Benefit to cost ratio	$1.39
Participants	$2,314	Benefits minus costs	$2,899
Others	$4,618	Chance the program will produce benefits greater than the costs	55 %
Indirect	($1,831)		
Total benefits	$10,424		
Net program cost	($7,525)		
Benefits minus cost	$2,899		

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	$2,002	$4,667	$1,009	$7,679
Labor market earnings associated with employment	$3,151	$1,431	$0	$0	$4,582
Property loss associated with alcohol abuse or dependence	$3	$0	$5	$0	$8
Public assistance	($796)	$1,873	$0	$945	$2,022
Health care associated with educational attainment	($11)	$38	($44)	$21	$4
Costs of higher education	($33)	($22)	($10)	($11)	($76)
Adjustment for deadweight cost of program	$0	$0	$0	($3,795)	($3,795)
Totals	$2,314	$5,322	$4,618	($1,831)	$10,424

[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.

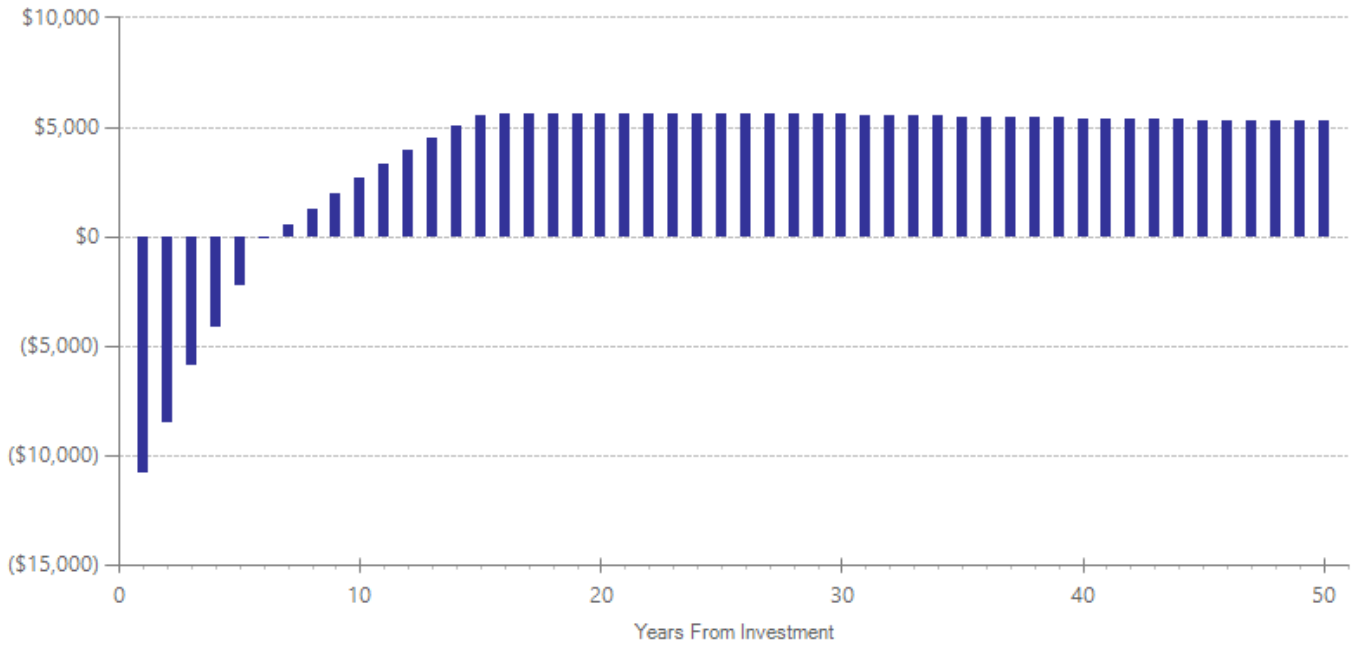
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$7,500	2014	Present value of net program costs (in 2015 dollars)	($7,525)
Comparison costs	$0	2014	Cost range (+ or -)	10 %

We calculated the cost per participant from the literature in the meta-analysis, based on 6.5 months, weighted by the number of youth served by these programs. Our weighted average cost estimate also incorporates the cost per participant of youth served by a similar (non-residential) program in Washington.

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	12	2413	-0.084	0.042	19	-0.084	0.042	29	-0.082	0.052
Employment	3	431	0.140	0.202	18	0.140	0.202	28	0.140	0.488
Earnings	4	1065	0.075	0.047	22	0.000	0.018	23	0.075	0.115
Alcohol use in high school	2	344	-0.125	0.140	18	-0.125	0.140	28	-0.125	0.373
Illicit drug use in high school	2	344	0.110	0.173	18	0.110	0.173	28	0.110	0.526
High school graduation	2	419	0.010	0.323	19	0.010	0.323	29	0.010	0.975
GED attainment	4	869	0.282	0.135	19	0.282	0.135	29	0.282	0.037
Public assistance	3	1032	-0.132	0.074	19	-0.132	0.074	29	-0.132	0.073

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

Bloom, H.S., Orr, L.L., Bell, S.H., Cave, G., Doolittle, F., Lin, W., & Bos, J. M. (1996). The benefits and costs of JTPA Title II-A programs: Key findings from the National Job Training Partnership Act study. *The Journal of Human Resources, 32*(3), 549-576.

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Gruenewald, P.J., Laurence, S.E., & West, B.R. (1985). *National evaluation of the New Pride replication program, final report–Volume II: Client impact evaluation.* Pacific Institute for Research and Evaluation (PIRE).

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Washington State Institute for Public Policy

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