

## Early Head Start

### Program description:

Early Head Start is a federally funded program for low-income pregnant women and families with infants or toddlers that aims to enhance children's development and health and strengthen families. Families can receive services until the children are three years old. Early Head Start accounts for 10 percent of the Head Start budget; program providers determine the specific services offered following Head Start guidelines.

Typical age of primary program participant: 1

Typical age of secondary program participant: 20

### Meta-Analysis of Program Effects

Outcomes Measured	Primary or Secondary Participant	No. of Effect Sizes	Unadjusted Effect Sizes (Random Effects Model)			Adjusted Effect Sizes and Standard Errors Used in the Benefit-Cost Analysis					
			ES	SE	p-value	First time ES is estimated			Second time ES is estimated		
						ES	SE	Age	ES	SE	Age
Crime	P	1	0.00	0.05	1.00	0.00	0.05	10	0.00	0.05	20
Test scores	P	1	0.01	0.05	0.87	0.01	0.05	10	0.01	0.03	17
K-12 grade repetition	P	1	-0.04	0.09	0.55	-0.04	0.09	10	-0.04	0.09	17
K-12 special education	P	1	-0.09	0.08	0.18	-0.09	0.08	10	-0.09	0.08	17
Externalizing behavior	P	1	-0.04	0.05	0.59	-0.04	0.05	10	-0.02	0.02	15
Internalizing symptoms	P	1	-0.05	0.05	0.46	-0.05	0.05	10	-0.02	0.02	15
Years of education	S	1	0.00	0.05	1.00	0.00	0.05	29	0.00	0.05	39
Public assistance	S	1	-0.07	0.06	0.29	-0.07	0.06	29	-0.07	0.06	39
Substance abuse	S	1	-0.01	0.11	0.90	-0.01	0.11	29	-0.01	0.11	39
Employment	S	1	0.00	0.05	1.00	0.00	0.05	29	0.00	0.05	39
Major depressive disorder	S	1	-0.05	0.05	0.52	-0.05	0.05	29	-0.01	0.05	31
Earnings	S	1	0.02	0.06	0.77	0.02	0.06	29	0.02	0.06	39

### Benefit-Cost Summary

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2011). The economic discount rates and other relevant parameters are described in Technical Appendix 2.	Program Benefits					Costs	Summary Statistics			
	Partici-pants	Tax-payers	Other	Other Indirect	Total Benefits		Benefit to Cost Ratio	Return on Investment	Benefits Minus Costs	Probability of a positive net present value
	-\$145	\$1,516	\$149	\$744	\$2,264	-\$10,420	\$0.22	n/e	-\$8,156	17%

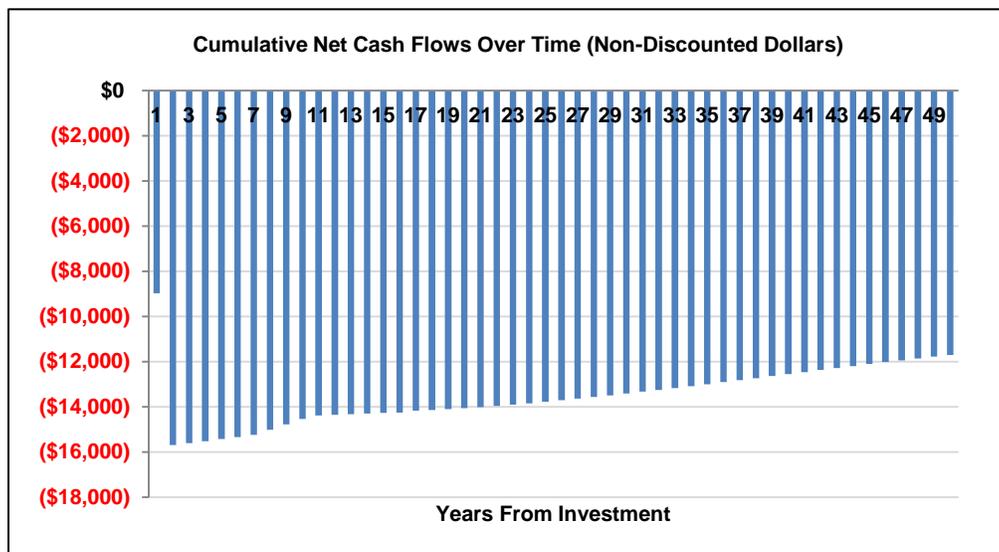
### Detailed Monetary Benefit Estimates

Source of Benefits	Benefits to:				
	Partici-pants	Tax-payers	Other	Other In-direct	Total Benefits
<b>From Primary Participant</b>					
Crime	\$0	\$0	\$0	\$0	\$1
Earnings via test scores	\$382	\$141	\$0	\$63	\$585
K-12 grade repetition	\$0	\$23	\$0	\$11	\$33
K-12 special education	\$0	\$264	\$0	\$129	\$393
Health care costs for disruptive behavior symptoms	\$6	\$20	\$19	\$10	\$55
<b>From Secondary Participant</b>					
Earnings via extra year of education	\$125	\$46	\$0	\$21	\$191
Earnings via depressive disorder	\$80	\$30	\$0	\$15	\$125
Health care costs via depressive disorder	\$44	\$132	\$130	\$66	\$371
Public assistance	-\$783	\$861	\$0	\$430	\$508

### Detailed Cost Estimates

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The uncertainty range is used in Monte Carlo risk analysis, described in Technical Appendix 2.	Program Costs			Comparison Costs			Summary Statistics	
	Annual Cost	Program Duration	Year Dollars	Annual Cost	Program Duration	Year Dollars	Present Value of Net Program Costs (in 2011 dollars)	Uncertainty (+ or - %)
	\$7,600	2	2010	\$1,679	2	2010	\$10,441	10%

Source: U.S. Department of Health and Human Services, Administration for Children & Families, <http://www.acf.hhs.gov/programs/ohs/about/fy2010.html>.



### Multiplicative Adjustments Applied to the Meta-Analysis

Type of Adjustment	Multiplier
1- Less well-implemented comparison group or observational study, with some covariates.	1.00
2- Well-implemented comparison group design, often with many statistical controls.	1.00
3- Well-done observational study with many statistical controls (e.g., instrumental variables).	1.00
4- Random assignment, with some implementation issues.	1.00
5- Well-done random assignment study.	1.00
Program developer = researcher	1.00
Unusual (not "real-world") setting	1.00
Weak measurement used	1.00

The adjustment factors for these studies are based on our empirical knowledge of the research in a topic area. We performed a multivariate regression analysis of 336 effect sizes from evaluations of early childhood education programs. The analysis examined the relative magnitude of effect sizes for studies rated a 1, 2, 3, or 4 for research design quality, in comparison with a 5 (the Technical Appendix describes these ratings). We weighted the model using the random effects inverse variance weights for each effect size. The results indicated that research designs 2, 3, and 4 should have an adjustment factor greater than 1 and research design 1 should have an adjustment factor of slightly less than 1. Using a conservative approach, we set all the multipliers to 1.

The analysis also found that effect sizes were statistically significantly lower when the program developer was involved in the research evaluation, when the program was implemented on a pilot basis, or when a weak outcome measure was used. We also set these discount rates equal to 1.

### **Studies Used in the Meta-Analysis**

- Roggman, L. A., Boyce, L. K., & Cook, G. A. (2009). Keeping kids on track: Impacts of a parenting-focused early head start program on attachment security and cognitive development. *Early Education and Development, 20*(6), 920-941.
- Vogel, C. A., Xue, Y., Moiduddin, E. M., Carlson, B. L., & Kisker, E. (2010, December). *Early Head Start children in grade 5: Long-term follow-up of the Early Head Start research and evaluation study sample* (Final Report) (Document No. PR10-61). Princeton, NJ: Mathematica Policy Research.