Nurse Family Partnership for Low-Income Families

Program description:

The Nurse Family Partnership program (http://www.nursefamilypartnership.org/) provides intensive visitation by nurses during a woman's pregnancy and the first two years after birth; the program was developed by Dr. David Olds. 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.

Typical age of primary program participant: 1

Typical age of secondary program participant: 17

Meta-Analysis of Program Effects

Outcomes Measured	Primary or Second-ary Partici-pant	No. of Effect Sizes	Unadjusted Effect Sizes (Random Effects Model)			Adjusted Effect Sizes and Standard Errors Used in the Benefit-Cost Analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Crime	P	1	-0.70	0.21	0.00	-0.17	0.21	15	-0.16	0.23	19
High school graduation	P	1	0.04	0.16	0.81	0.01	0.16	19	0.01	0.16	19
Test scores	P	2	0.13	0.07	0.04	0.13	0.07	5	0.08	0.04	17
Child abuse and neglect	P	1	-0.88	0.22	0.00	-0.22	0.22	15	-0.22	0.22	17
K-12 grade repetition	P	1	0.14	0.12	0.26	0.14	0.12	12	0.14	0.12	17
K-12 special education	P	1	0.29	0.16	0.07	0.29	0.16	12	0.29	0.16	17
Disruptive behavior disorder symptoms	P	1	-0.22	0.09	0.01	-0.22	0.09	12	-0.09	0.04	17
Crime	S	2	-0.26	0.37	0.48	-0.05	0.37	31	-0.05	0.37	41
High school graduation	S	2	0.10	0.09	0.27	0.10	0.09	23	0.10	0.09	23
Public assistance	S	3	-0.17	0.12	0.16	-0.09	0.12	28	-0.09	0.12	38
Substance abuse	S	3	-0.27	0.31	0.38	-0.07	0.31	28	-0.07	0.31	38
Employment	S	3	0.12	0.09	0.18	0.09	0.09	26	0.09	0.09	36

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 Invest-ment	Benefits Minus Costs	Probability of a positive net present value
	$10,291	$6,219	$3,158	$3,112	$22,781	-$9,600	$2.37	6%	$13,181	80%

Detailed Monetary Benefit Estimates

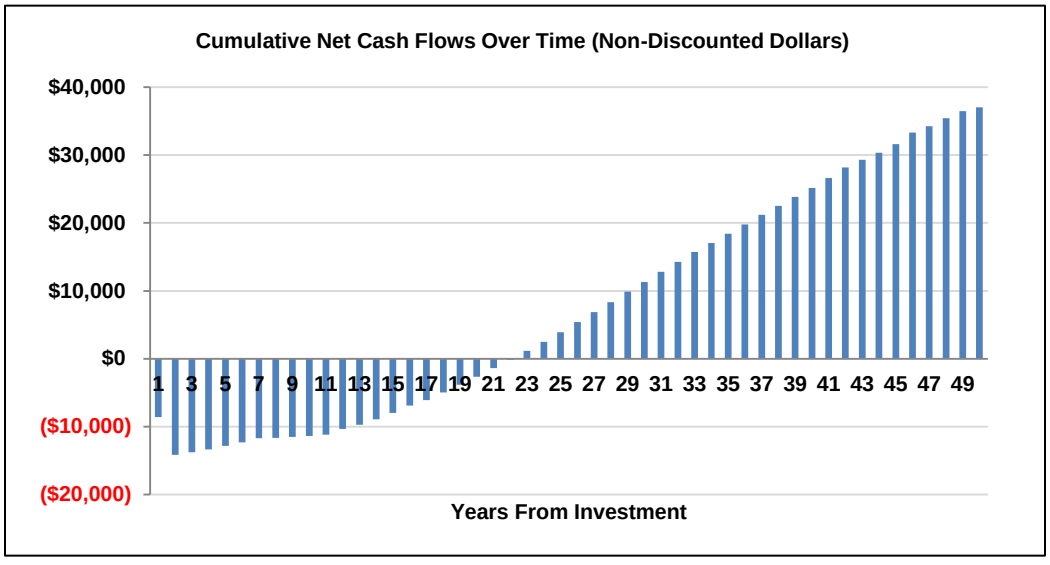
Source of Benefits	Benefits to: Participants	Taxpayers	Other	Other Indirect	Total Benefits
From Primary Participant					
Crime	$0	$939	$2,634	$476	$4,049
Earnings via high school graduation	$40	$15	$0	$9	$64
Earnings via test scores	$3,165	$1,165	$0	$578	$4,908
Child abuse and neglect	$696	$113	$0	$56	$865
K-12 grade repetition	$0	-$108	$0	-$54	-$162
K-12 special education	$0	-$1,047	$0	-$526	-$1,573
Property loss from illicit drug disorder	$0	$0	$1	$0	$1
Health care costs for disruptive behavior symptoms	$20	$59	$58	$30	$166
Health care costs via education	-$3	$26	-$19	$13	$17
From Secondary Participant					
Crime	$0	$341	$1,269	$163	$1,773
Earnings via high school graduation	$7,378	$2,715	$0	$1,360	$11,453
Public assistance	-$869	$956	$0	$485	$572
Health care costs via education	-$135	$1,046	-$785	$523	$649

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 – %)
$5,383	2	2007	$0	1	2007	$9,595	10%

Source: Average annual expenditures per family and average length of service provided by Kristen Rogers at Nurse Family Partnership, Northwest Regional Office July, 08.



Multiplicative Adjustments Applied to the Meta-Analysis

Type of Adjustment	Multiplier
1- Less well-implemented comparison group or observational study, with some covariates.	0.5
2- Well-implemented comparison group design, often with many statistical controls.	0.5
3- Well-done observational study with many statistical controls (e.g., IV, regression discontinuity).	0.81
4- Random assignment, with some RA implementation issues.	0.81
5- Well-done random assignment study.	1.00
Program developer = researcher	0.25
Unusual (not “real world”) setting	0.5
Weak measurement used	0.54

The multipliers for these studies are based on a multivariate regression analysis of 106 effect sizes from evaluations of home visiting programs within child welfare or at-risk populations. The analysis examined the relative magnitude of effect sizes for studies rated a 1, 2, 3, or 4 research design quality, in comparison with a 5 (see Technical Appendix II for a description of these ratings). We weighted the model using the random effects inverse variance weights for each effect size. The results indicated that research designs 1 and 2 have effect sizes about twice the size of studies rated as a 5, and research designs 3 and 4 have effect sizes about 24 percent higher than a 5.

The analysis also found that effect sizes were statistically significantly higher when the program developer was involved in the research evaluation, or when a weak outcome measure was used.

Studies 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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Sidora-Arcoleo, K., Anson, E., Lorber, M., Cole, R., Olds, D., & Kitzman, H. (2010). Differential effects of a nurse home-visiting intervention on physically aggressive behavior in children. *Journal of Pediatric Nursing, 25*(1), 35-45.