Washington State Institute for Public Policy

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BENEFITS AND COSTS OF PREVENTION AND EARLY INTERVENTION PROGRAMS FOR YOUTH

Frequently Asked Questions

In 2004, the Washington State Institute for Public Policy published a report entitled *Benefits and Costs of Prevention and Early Intervention Programs for Youth*. The report was requested by the Washington State Legislature during its 2003 session. The report and its two technical appendices are available on the Institute's website.[1]

In the report, we found, as of September 2004, that some prevention and early intervention programs for youth can give taxpayers a good return on their dollar. That is, we found that there is credible scientific evidence that certain well-implemented programs[2] can achieve significantly more benefits than costs. We also found, however, scientific evidence indicating that some prevention and early intervention programs fail to generate more benefits than costs.

Since the report's publication, we have fielded numerous questions about the analysis. Here we address some of the most typical questions and issues that have been raised.

Q. How do you calculate program costs? Why do some estimates differ from other sources?

A. As we note on Table 1 in our report, we express costs and benefits in 2003 dollars. Table E.3 in the Technical Appendix shows the sources we used for the cost of programs in our analysis. For example, the annual cost per youth participating in the CASASTART[sm] program was $4,700 in 1994 dollars.[3] Because it is important to use inflation-adjusted costs when conducting an economic analysis of different programs, we express the $4,700 cost figure in 2003 dollars. This is why the cost of CASASTART in our analysis is $5,559 instead of $4,700. We provide the inflation index used for all our cost estimates in Table E.1 of our Technical Appendix.[4]

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[1] <http://www.wsipp.wa.gov/rptfiles/04-07-3901.pdf>; <http://www.wsipp.wa.gov/rptfiles/04-07-3901a.pdf>; <http://www.wsipp.wa.gov/rptfiles/04-07-3901b.pdf>.

[2] We examined the effect of programs on outcomes specified by the Legislature for this study: crime, substance abuse, teen pregnancy, teen suicide, child abuse, and education.

[3] The demonstrations that were evaluated occurred from 1992 to 1996. We used 1994 as the base year for costs.

[4] We use the Implicit Price Deflator for Personal Consumption Expenditures, a national index that is forecast by the Washington State Office of the Forecast Council.

Q. How do you calculate the costs of programs that span more than one year?

A. Our cost estimates are the total costs per program participant. Some programs last less than a year; other programs last several years. We calculate a present value sum of costs over the number of years that a person participates in a program. For example, for a two-year preschool program we calculate the present value of the two years worth of costs. In all cases, we calculate the total costs of the program and the total lifetime benefits; both streams of dollars are adjusted to present value (to the point at which the investment decision must be made by the legislature) with the discount rate used for the overall analysis. Stating the costs and benefits accrued over time in present value terms is a basic tenet of economic investment analysis.

Q. Why are some program effects given higher value in the analysis?

A. The outcomes we analyzed have different economic implications. In comparing substance abuse and high school graduation outcomes for example, the economic benefits of graduating from high school are considerably greater than delaying the onset of smoking by one year. A program may have exactly the same effect sizes for the two different outcomes, but the value to society will almost certainly be different, because high school graduation carries a higher social value than a delay in the onset of smoking. Take another example: the benefits associated with a program that can reduce the probability of a youth committing a murder by 10 percent are going to be much larger than a program that achieves a 10 percent reduction in new burglary offenses, even though the effect sizes are identical. For instance, programs that reduce child abuse and neglect also reduce future crime and substance abuse and improve grade promotion, high school graduation rates, and test scores.

Q. Do you only count benefits that accrue to the government?

A. No. For all outcomes in our study we calculate the costs and benefits from three perspectives: those benefits or costs that accrue to the program participant, those that accrue to taxpayers, and those that accrue to non-program participants in other roles than as taxpayers. When summed together, the three perspectives represent total benefits and costs. We sub-divide the total costs into these three perspectives because some of the sub-categories are useful to answer certain public policy questions. As we describe in our Technical Appendix regarding crime, we estimate the value to taxpayers and crime victims (i.e., not just the government) of reducing crime by one unit.[5] We also include other non-government benefits, such as the expected increase in lifetime earnings of youth who benefit from a successful prevention program.[6]

[5] Technical Appendix, page 37.
[6] Technical Appendix, page 33.

Q. How can you compare a program that measures outcomes into adulthood with one that only measures outcomes during the preschool years?

A. We calculate the benefits of all effects over the same time periods. For example, all our earnings estimates are lifetime estimates, from age 18 to age 65. Whether these earnings result from improved educational outcomes, or whether they reflect lost earnings from substance abuse mortality, the estimates are lifetime earnings derived from the same Current Population Survey of the United State Census Bureau. We estimate how gains in, for instance, test scores, persist until the end of high school. We then use these results to evaluate the long-term economic gains of early test score improvements from pre-school programs.[7] The methods we use, including the precise equations indicating lifecycle earnings, crime, and other outcomes, are discussed fully in the Technical Appendix. Thus, for the specific outcomes we measure in our analysis—crime; education; drugs, alcohol, and tobacco; child abuse and neglect; teen births; public assistance—we estimate the long-run present value of benefits and costs associated with any scientifically-estimated program outcome.

The long-run implications of each measured outcome are estimated regardless of the age of the youth in a program. All methods used to calculate lifetime benefits are described in the Technical Appendix. For example, as we show in Appendix D.1, we use the "human capital" approach to evaluate the long-run economic benefits associated with more years of education, improvements in standardized test scores, and increased graduation rates. If a program improves any of these three human capital outcomes—regardless of the age of the youth in the program—we then evaluate the present value of the lifetime (to age 65) benefits of the improvements. This human capital model is used by economists of all political persuasions, including Nobel Prize winners.[8] To take another example, we estimate the long-run benefits of improvements that a child welfare program might achieve on reducing the rate of child abuse and neglect cases. As we describe in the Technical Appendix,[9] there is credible evidence (that we analyze empirically) indicating a causal link between substantiated cases of child abuse and certain long-term consequences such as high school graduation, crime, and substance abuse. In our economic methods, we evaluate the long-term consequences of a change in child abuse and neglect outcomes on these other outcomes.

Q. How can you compare programs with different outcomes and follow-up periods?

A. In an ideal world, all prevention programs would have long-term measures of all six of the outcomes of interest to the legislature: crime, education, substance abuse, child abuse, teen suicide, and teen pregnancy.

[7] Technical Appendix, page 30.
[8] See for example, J.J. Heckman. (2000) "Policies to foster human capital." Research in Economics 54(1): 3-56; J.D. Angrist and A.B. Krueger. (1991) "Does compulsory school attendance affect schooling and earnings?" Quarterly Journal of Economics 106: 979-1014; and E.A. Hanushek. (2003) "Some simple analytics of school quality." <http://edpro.stanford.edu/eah/eah.htm>.
[9] Technical Appendix, page 47.

In practice, some programs have long-term measures and others do not. Not all program evaluations measure all six outcomes. To limit our analysis to the lowest common denominator (only the programs that measure the same outcomes) would mean ignoring high-quality long-term studies that measure many outcomes. Such an approach would hinder, not enhance, the development of evidence-based programs. That is why programs without long-term results should be considered experimental rather than proven parts of a state's prevention portfolio.

In this regard, we think it is instructive to note how David Olds' Nurse Family Partnership program developed. Olds began his work on that program in the 1970s. The earliest results, when the children were quite young, were encouraging. Many people wanted Olds to "go national" with his program at that time. Instead, Olds wanted to further test his program and wait to see if there were long-term results before advancing. That approach paid off in that he was able to demonstrate long-term results in several outcome areas (such as crime, educational test scores, and child abuse and neglect). Olds now is taking the program to a national scale with careful attention paid to program fidelity in each application.

We think Olds' approach to careful research and development is sound. Similarly, other programs that have yet to be evaluated in the long term may eventually show positive outcomes on crime, education, substance abuse, child abuse and neglect, teen suicide, and teen pregnancy. Until these effects are proven, however, the evidence does not support including such programs in the main prevention portfolio—instead, they should be considered research and development programs and continue to be evaluated.

Q. Does your analysis treat children as costs rather than investments?

A. The research task assigned by the Washington State Legislature to the Institute was to study costs **and benefits** of prevention programs. Indeed, the majority of our work was dedicated to evaluating the benefits of investing in children. We intentionally selected economic methods that regard prevention and early intervention programs as investments. For example, we use what economists call the "human capital model" to evaluate several outcomes.[10] When an investment is made in a prevention program, money is spent today while the benefits of, say, improved school performance, are reaped for many years in the future in the form of higher income and an enriched productive adulthood. The human capital model, which we employ in our analysis, means that programs for children are indeed regarded as investments, some of which produce better returns per dollar of spending than others. The human capital model is a standard method of analysis for economists and is relied on by economists of all political persuasions, including economists who have won Nobel prizes.[11]

Q. Your report focuses on monetary outcomes. What about programs that contribute to general child well-being?

[10] Technical Appendix D, page 33.

[11] See for example, J.J. Heckman. (2000) "Policies to foster human capital." Research in Economics 54(1): 3-56; J.D. Angrist and A.B. Krueger. (1991) "Does compulsory school attendance affect schooling and earnings?" Quarterly Journal of Economics 106: 979-1014; and E.A. Hanushek. (2003) "Some simple analytics of school quality." <http://edpro.stanford.edu/eah/eah.htm>.

A. The outcomes specified by the Legislature define some of the most robust measures of general child well-being. Clearly, a child will be better off if he or she achieves better results in school, avoids criminal behavior, refrains from substance abuse, is not a victim of child abuse or neglect, does not become pregnant before the age of 18, or does not commit suicide. These are outcomes recognized as important by the Washington State Legislature.

We think the outcomes we were directed to study are quite broad and encompass many (not all, but many) of the most significant aspects of a child's development. As we note in our report, however, we did not include some other important outcomes of prevention programs (see pages 3 and 4 of the report). In fact, we suggested to the Legislature that some of these other outcomes can be the subject of subsequent research. It is difficult to argue, however, that education, crime, substance abuse, child abuse, pregnancy, and suicide, are not good measures of general child well-being.

Q. Why not use other approaches (e.g., theory-based evaluation) to assess programs?

A. When the Legislature directed the Institute to undertake this study of costs and benefits, it clearly identified specific outcomes for us to assess. To determine which prevention and early intervention programs achieve these clearly stated outcomes, we gathered all outcome-based evaluation studies written in English that we could obtain. We used modern statistical methods to assess evaluations which measured the outcomes of legislative interest and conducted a systematic analysis.[12] We reviewed over 3,000 documents in this process.

The movement toward accountability of public programs is a movement toward outcome-based (i.e., evidence-based) evaluation. Rather than simply accepting a theory about what works, legislatures and executive agencies are increasingly seeking empirical proof. That is, public entities are increasingly requiring programs to provide valid empirical tests of a theory to see if the theory actually does what it is supposed to do in the real world. We did not invent the evidence-based approach to public policy; many other public bodies and researchers have been moving in this direction for years. We refer the interested reader to the fine empirical work of the University of Colorado's Center for the Study and Prevention of Violence,[13] the Campbell Collaboration,[14] the United States Surgeon General,[15] and the work of Mark Lipsey and colleagues.[16]

We feel it would be a mistake to retreat from this nationwide movement toward rigorous testing of outcomes of public programs. In our research, we found a number of programs that were not successful in achieving their intended outcomes, as well as many that were successful. Prior to the research findings, people had various opinions about which interventions might work better than others based on theories, but there

[12] M.W. Lipsey and D.B. Wilson. (2001) Practical meta-analysis. Thousand Oaks, CA: Sage Publications.
[13] <http://www.colorado.edu/cspv/blueprints/index.html>.
[14] <http://www.campbellcollaboration.org/>.
[15] <http://www.surgeongeneral.gov/library/youthviolence/toc.html>.
[16] <http://www.vanderbilt.edu/cerm/>.

was no evidence to support these opinions. Therefore, it seems prudent for public decision-makers to take full advantage of outcome-based information when deciding how to spend scarce taxpayer dollars. That is why the research assignment given to the Institute by the Washington State Legislature was to study outcome evaluations.

Q. Why were some well-known programs for children and youth omitted from your analysis?

A. Programs may have been omitted from the analysis for six reasons, as outlined on page 3 of our report. First, we may have missed evaluations of some programs. Second, because we limited our analysis to the outcomes designated by the Legislature, some areas of prevention, such as mental health and public health, are beyond our assigned scope. Third, we excluded some programs because the evaluation design did not meet our standards that require a well-constructed comparison group. Fourth, some studies are excluded because, at present, we cannot monetize their measured outcomes. We found evaluations with good research designs, but they measured outcomes such as the Child Behavior Checklist or intentions and attitudes. For example, if a program designed to prevent teenage pregnancy measured intentions about sexual behavior, but not subsequent pregnancy, we would not have included the program. Fifth, because of resource and time constraints, we were unable to complete work on domestic violence and school violence, including bullying. Finally, we excluded some studies from our benefit-cost analysis when we could not estimate the costs of the program.