Benefit-cost analysis in the evaluation of child welfare programs

By E. Michael Foster and E. Wayne Holden

E. Michael Foster is Professor of Health Policy and Administration at Pennsylvania State University and an IRP affiliate. E. Wayne Holden is President of ORC Macro, Inc.

Broad evaluation of the financial consequences of social programs has been somewhat of an orphan stepchild of policy analysis, especially within states. A full benefit-cost analysis is expensive and complex to implement, requiring that evaluators reach far beyond the immediate framework of the program to consider the effects of choices made across a wide programmatic and social spectrum. It takes time to do properly, and public officials tend to need swift answers. But particularly now, as greater integration of social welfare programs is actively under consideration in many jurisdictions, benefit-cost analysis should be a central tool of social welfare program evaluation.

This article suggests how a benefit-cost analysis of child welfare programs might be set up, describing the structure of the analysis, identifying potential data sources, and noting difficulties.[1] An accompanying brief article (pp. 50–52) describes a benefit-cost analysis of an early childhood intervention program, the Chicago Child-Parent Centers, carried out as part of the evaluation by the Chicago Longitudinal Study under the direction of IRP affiliate Arthur Reynolds.

Spanning multiple programs at the local, state, and federal level, child welfare expenditures annually exceeded $14 billion in the late 1990s. These expenditures had for some time been growing substantially; between 1986 and 1996, for example, federal foster care maintenance payments grew almost fivefold. In consequence, states began to experiment with different arrangements for organizing and delivering child welfare services, in the hope of controlling program costs and improving outcomes for children. Beginning in 1998, the federal government began allowing states to waive certain child welfare program requirements under Titles IV-B and IV-E of the Social Security Act. The waivers, which both reflected and further stimulated state initiatives, allowed states to change policies and service delivery. For example, states could now use IV-E funds for therapeutic, aftercare, or home-based services that previously had to be funded from Medicaid or block grants, and could introduce service innovations such as managed care.

By February 2003, 26 Child Welfare Waiver Demonstrations had been implemented in 17 states. The federal Administration for Children and Families (ACF) that administers the waiver program summarized the tenor of these waivers as follows:

> Collectively, the demonstration projects are aimed at reducing the number of children in foster care, the length of time in foster care, the use of more restrictive and costly placement settings, re-allegations of abuse and neglect, and re-entry into foster care. Some states have proposed discrete interventions focused on specific child welfare populations, while others are experimenting with flexible use of funds to produce system-wide reforms.[2]

Under the waivers, states are required to evaluate policies implemented or services provided. Such evaluations must assess the cost effectiveness of the project and its fiscal consequences for state and local jurisdictions. A primary reason for this mandate is to ensure that the program meets a key requirement of the waiver—that it be "cost neutral," i.e., federal expenditures should be no higher in the new program than they would be in the absence of a waiver.

The fiscal analysis does, however, highlight two other possible consequences of a program innovation. First, the spillover of program effects onto other levels of government and onto the child's family may result in "cost shifting," where expenditures move from one budget or payment source to another; for example, the costs of mental health services may be shifted from Medicaid to Title IV-E. Cost shifting may or may not be associated with actual changes in the child's condition or circumstances. If such changes do occur, then a second consequence, "cost offset," may come into play; for example, improvements in the child's condition may reduce the need for special services. Some offsets might actually be negative in the longer term, say if children returned to the community become involved in delinquency.

Cost neutrality, cost shifting, and cost offset naturally lead to a benefit-cost analysis more extensive than the "fiscal analysis" required under the terms of the federal waivers, which primarily emphasize budgeted government expenditures closely connected to the program un-

der analysis. A full benefit-cost analysis includes all resource uses. Some costs will be "opportunity costs," which do not involve an explicit payment but may require the time of parents and caregivers. Others will be societal—the costs to victims of crime or the benefits of a lower crime rate.

Steps in a benefit-cost analysis

The steps in a benefit-cost analysis can be succinctly conveyed (see box) but the choices prove to be much more complicated. Defining the program in this example is relatively simple: we establish it as the IV-E waiver. But the costs and benefits of a program will vary with the perspective. Costs important from one perspective will be irrelevant from another—social welfare agencies, for example, generally ignore costs that do not appear on their budgets. Some policy outcomes may be a cost from one perspective and a benefit from another; mental health services may return a child to the family (a benefit to the family and the mental health agency), but if the family thereby becomes eligible for cash assistance, the state's Temporary Assistance for Needy Families (TANF) agency incurs a cost.

A benefit-cost analysis therefore needs to specify one or more perspectives. In the example we use, there are at least four points of view: (1) the child's family or caregivers; (2) state agencies, both child welfare and other relevant agencies such as Medicaid or TANF providers; (3) other members of society, including taxpayers, victims of crime, and private or community services; and (4) society as a whole, a category which comprises the other three.

The time frame—the period during which the policy or program will be evaluated—differs from the analytic horizon—the period over which costs and benefits will be measured. In this example, the time frame is set by the waiver period. But services received during childhood may affect (indeed, are intended to affect) a child through the transition to adulthood and beyond. For example, intensive studies of early childhood interventions such as the Chicago Child-Parent Centers have commonly continued into early adulthood, decades after the evaluation was implemented (see the accompanying article by Reynolds and colleagues). The analytic horizon is therefore likely to be limited mainly by practical concerns: available resources, or the ability of the evaluators to track participants over time or to project future costs and benefits.

Steps in a Benefit-Cost Analysis

1. Define the program, policy, or intervention being evaluated.
2. Specify the study perspectives.
3. Select the time frame and analytic horizon.
4. Identify relevant benefits and costs.
5. Measure those effects in dollar terms.
6. Produce a summary measure of the policy's net benefits.

Under the child welfare waivers, the outcomes are fairly generally specified as the improved health and safety of children, greater permanency of placement, better school performance, and reduced delinquency. Valuing these benefits and their costs in dollar terms involves multiple sources of data and a series of methodological choices. Reducing delinquency, for example, means fewer dollars spent in the juvenile justice system, but how should a dollar value be placed on crimes uncommitted or the benefits to the family of the child who remains out of the court system? The *net* benefits of a program also involve discounting (the conversion of future costs and benefits into today's dollars) and sensitivity analyses (the recalculation of costs and benefits under alternative but plausible assumptions).

Counting the costs and benefits of a Title IV-E waiver

Table 1 summarizes the potential sources of costs for program and service changes and for the consequences of those changes, categorizing them by the four primary perspectives we specified earlier. These categories represent the dollar costs and savings alone, and so only partly capture the effects of the waiver. For example, the personal or caregiver costs of abuse and neglect are identified as the costs of the medical services involved; these are clearly modest when compared to the emotional or social costs. Moreover, policy and program changes designed to reduce government expenditures in the long run may not do so in the shorter term. For example, the costs per participant of services under the first years of the Wisconsin welfare reforms (W-2) considerably outpaced Wisconsin's per capita expenditure under the last years of AFDC.

Among the outcomes listed in Table 1, delinquency and school performance are only two of many outcomes that might be analyzed if research resources allowed. Children leaving foster care, for example, are at risk of behaviors and outcomes costly to themselves and society: substance abuse, homelessness, victimization, early pregnancy, and future welfare use.[3] Any improvements in these long-term outcomes that emerge from the waiver program are only partially captured through improved schooling and reduced delinquency.

As simply one example, we consider in detail the potential costs and benefits associated with one outcome from

Table 1
Identifying Costs and Benefits

Change/Outcome	Perspective			
	Parents and Caregivers	Government Agencies	Other Members of Society	Society as a Whole
Policy Changes	Costs of care (time and money)	Child welfare administrative costs Court costs	Taxes to pay for administrative and court costs	Resources used to administer programs and courts
Service Changes	Time and money costs	Medicaid expenditures Block grant expenditures	Taxes to pay for services and programs	Resources used to provide services
Accelerated Permanent Placement of Child	Costs of care (time and money)	TANF payments Medicaid expenditures Child welfare expenditures Adoption assistance	Community services Taxes to pay for services and programs	Resources used to provide services and care Resources used to administer programs Parental or caregiver time
Health and Safety	Costs to parents of services related to abuse and neglect	Child protection services, including court costs	Taxes to pay for services and programs	Resources used to provide services
Child's School Performance	Costs of services Time spent dealing with school-related problems	Expenditures on school and school services	Taxes to pay for services and programs Future taxes paid by child Effect on community	Parental or caregiver time Productivity and related societal benefits Resources used to provide services and schooling
Child's Delinquency	Time and money costs of delinquent child	Juvenile justice costs	Costs of victimization Taxes to pay for juvenile justice costs	Parental or caregiver time Costs to victims Juvenile justice costs

Table 1: acceleration of the child's permanent placement, either by reuniting the child with the parents or caregivers, or through adoption into another family.

Reunification has implications for many government programs, including other sources of child welfare funds, TANF, and Medicaid. Increases in these payments represent costs to taxpayers and, except for TANF cash assistance, they are also costs to society. State policy determines how other state funds, such as the Social Services Block Grants (SSBG), are used to fund child welfare programs such as family support, protective services for children, and special services for children at risk. Children returned home under the waiver might use any or all of these services.

TANF payments seem likely to increase under child welfare waivers: when children return to parents or kin, the family may thereby become eligible for cash assistance. But these payments, which constitute a cost to the state and to taxpayers, are a benefit to the family. Reunification may also produce emotional benefits for the family, but it consumes resources of time in caregiving and cash—for example, for child care or health services not covered under Medicaid. Other social groups may accrue costs, as children and their families make greater use of the services of community or nonprofit agencies. From a broader societal perspective, however, the benefits and costs of reunification may offset each other.

Adoption. To the extent the waiver increases the rate of adoption without improving a child's need for special services, it may increase the cost of assistance the state offers to families willing to adopt such a child. But services to a child in foster care may improve a child's condition, increase the likelihood of adoption, and reduce the need for special services thereafter. This seems less likely if the waiver is aimed at children with particularly severe emotional and behavioral problems; in this respect, the intended target population of the waiver-based program enters into consideration of its benefits and costs.

Sources of data

Because the effects of a waiver program may be complex and far-reaching, the data needed to understand them must be drawn from multiple sources. These will include (1) government payments under a variety of programs, (2) estimates of parental time and financial resources, and (3) estimates of costs and benefits to other members of society.

Government payments

Administrative data on public costs such as those for TANF or adoption assistance are widely available, though the quality and accessibility of actual expenditure (as opposed to budgeted) data vary greatly. Tracking a family's Medicaid costs represents a special challenge because parents or caregivers may not accurately report their use of services or know the costs for particular services. Access to some data, such as child protective data, may require informed consent of the subjects.

One goal of a benefit-cost analysis is to identify those individuals for whom the costs of the waiver were particularly high or low, perhaps in order to target future waivers to specific groups for whom the net benefits are large. Aggregate program expenses for treatment or comparison groups will not provide these kinds of answers; instead, evaluators must have data concerning payments made on behalf of and services provided to individuals. Such records must often be gathered from programs at different levels of government, posing serious problems of confidentiality, access, accuracy, and reliability, as well as technical difficulties in linking very different types of data. Management information systems or billing data may not track participation in services or programs funded through block grants. Payments may not be linked to specific individuals or services. Estimating the actual costs of family preservation or a service provided to a particular child may therefore be next to impossible. One alternative may be to obtain estimated costs for similar services from other studies.

Costs to parents

Self-reports appear to be the only feasible source of such information. Information on parents' time use can be converted to dollars using an estimated value of parental or caregiver time. There is some debate over how to value this time and over the appropriate measure of opportunity costs—the value of the activities forgone to participate in services or to monitor the child. One argument is that this time may not otherwise be spent productively—parents' leisure time may simply be reduced. The counter argument is that parents may miss work or have less time for productive activities such as housework or caring for other children. Furthermore, from an economist's perspective, lost leisure time has value as a good that parents choose to consume, and for which they pay through reduced earnings. Such "lost" time is in general valued at the individual's wage rate.

Costs and benefits for other members of society and for society as a whole

Changes in health and safety, school performance, and delinquency all affect society more generally.

Health and safety. Medical services and child welfare programs (including court costs) may be estimated in dollars using self-reports or administrative data. What of the extreme case where abuse results in the death of the child? Considerable controversy surrounds the valuing of human life but even conservative estimates may exceed several million dollars.[4] These costs are borne by the child's family, taxpayers, and society at large.

School performance. The costs of schooling and school services can be estimated from self-reports, review of school records, school budgets, and national cost estimates. There are, for example, estimates of the benefits of high school completion, including increased earnings and broader social benefits.[5]

Delinquency. Self-reports of crime and involvement with juvenile justice are merely a starting point; an accurate accounting will require review of court records. It may be difficult to estimate court costs or the costs of time spent in juvenile detention facilities in a specific community or state. One alternative, again, is to draw upon estimates from elsewhere—the Washington Institute of Public Policy, for example, provides estimates of juvenile justice facility costs—but these may be of limited applicability outside a particular area.[6] General estimates of the costs to victims, including medical costs, time lost from work, and pain or suffering, do exist and make it possible to value self-reported crimes in dollar terms.[7]

Calculating and presenting net benefits

Calculating net benefits involves more than simply subtracting gross costs from gross benefits.[8] One must allow for future changes, for example, as children leave foster care and make the transition to adulthood. Because a dollar today is worth more than a dollar next year, even in the absence of inflation, future payments must be converted into their current value, but neither government agencies nor academics have been able to settle on a single discount rate. The best approach is to employ several within the range of annual values commonly used (2–10 percent), thus providing a plausible range of estimated net benefits.[9]

More important, however, is that net benefits are so presented as to reflect their true uncertainty. As with any calculation based on a sample of study participants, the net benefits for a given evaluation would be different were a different sample chosen for evaluation. For this reason, net benefits have a sampling error, as does the mean, or any sample statistic. This uncertainty can be captured by producing a confidence interval for the net benefits.

Other forms of uncertainty are introduced by the choices the evaluator makes—which measure or dollar figure to use from the range of costs for juvenile detention, for example. Sensitivity analyses, in which the evaluator calculates net benefits using a reasonable range of figures, will illustrate how the net benefit calculation changes

under alternative, plausible assumptions. Finally, it may simply be impossible to measure some benefits in dollar terms, but it is important to try to quantify them as best one can with nonmonetary measures of well-being or satisfaction. These findings are particularly important if the measured net benefits are negative. In that case, the program may still be worth undertaking; the policymaker needs to decide if the value of the unmeasured benefits exceeds the observed net costs of the program.

Advantages and difficulties of benefit-cost analysis

The advantages

The outcomes traditionally used to evaluate child welfare programs have generally focused on limited goals, such as length of placement or reunification, and have followed children for a relatively short time afterward. Child welfare professionals have increasingly come to realize that these criteria are too narrow and can lead to policy decisions that are bad for children—reunification, for example, may not promote long-term success. They are thus moving toward a broader array of outcomes that include measures of school performance and educational achievement, among others.[10] Some evaluators have suggested the children be followed for a minimum of three to five years after leaving the child welfare system.

As perspectives and outcomes expand, benefit-cost analysis provides a way of prioritizing a potentially very large body of information, focusing on those outcomes that have the greatest potential benefits or costs from a particular perspective. Benefit-cost analyses of waiver programs can document shifts in expenditures among different services and describe the distribution of expenditures across different types of individuals. For instance, total expenditures may remain the same but the waiver may reduce (or increase) the concentration of expenditures on a few high-cost children—information of real importance to policymakers. As noted earlier, waivers may dramatically change the types of services children receive. TANF expenditures will almost certainly rise if greater numbers of children are reunited with families. Medicaid expenditures may drop as Title IV-E funds are used to cover more services, or may increase as these funds are used to link individuals and families to new services. A benefit-cost analysis also emphasizes that a waiver mechanism is more than a matter of fiscal reform or the reorganization of service delivery, and that it may have far-reaching effects outside these narrow boundaries on other organizations, communities, and society as a whole.

The difficulties

One problem associated with benefit-cost analysis is overreliance on net benefits as the criterion for determining a project's merits. Although a benefit-cost analysis can document the differential effects on taxpayers, parents, and so on, the net benefit figure, a measure of efficiency, simply subtracts all (discounted) costs from benefits without regard to who bears the costs or reaps the benefits. An obvious alternative criterion is equity.

A second, related pitfall is an exaggerated sense of precision attached to the net benefits. As we noted earlier, confidence intervals and sensitivity analyses should accompany any presentation of the benefits and costs, providing readers with a sense of the degree to which the study's findings might be a chance occurrence or might be sensitive to assumptions made in performing the analysis. At best, a benefit-cost analysis can only provide a range of plausible estimates.

Third, any benefit-cost calculation is limited to *measurable* costs and benefits. Possible nonmonetary costs and benefits should also be included in the report.

Looming above these pitfalls is the question of the cost of such a thorough analysis. Obtaining and manipulating large administrative databases, amassing the necessary budget data, finding and surveying families (many of them disadvantaged and unstable), and tracking outcomes over time are all very expensive undertakings. True, the quantity and quality of public administrative data are improving. This is in part because of the increased importance of longitudinal data to policymakers and program administrators who must track families over time to fulfill the requirements of laws such as the 1996 welfare reforms. Federal requirements to develop comprehensive databases on child outcomes have also stimulated better data gathering.[11]

Evaluators may reduce costs by relying on unconfirmed self-reports or national estimates, but will thereby reduce accuracy. One option is to lower the analytic horizon, for example by considering only benefits and costs until the child's 18th birthday. The evaluation will then likely underestimate the waiver's benefits, for the transition to adulthood is a crucial marker of the success or failure of a child welfare policy. If the net benefits observed during a shorter period are positive, then the results of the analysis may still be clear. If they are not, then the study findings and policy implications remain ambiguous.

Another option for reducing expenses is to limit the scope of the analysis to certain outcomes or behaviors and ignore others, as we earlier demonstrated in limiting consideration to school performance and delinquency. But how should we choose those outcomes? Importance to policymakers is one criterion; the potential dollar magnitude of the effects is another. Relevant benefits and costs are typically identified on the basis of the theory underlying the program or policy as well as prior research and practice. Limiting the list to a manageable size requires that the evaluators engage in a complex balancing act on

the basis of often insufficient information. How closely are particular data about policy and service changes linked to the desired outcomes? How large are the costs of collecting such information? Prior research may suggest outcomes that are likely to be most sensitive to the waiver program, but there may be very little prior research to draw upon.

Benefit-cost analysis has been an often neglected or underfunded feature in the evaluation of large federal demonstration programs. Yet it is consistent with the growing emphasis on broader outcome measures for child welfare programs and, indeed, for social programs in many other areas. The Title IV waiver demonstration programs provide a unique opportunity for the rigorous evaluation of alternative service organization and delivery mechanisms in the child welfare area, and a broad benefit-cost analysis should be seen as an essential feature of this kind of evaluation. ■

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[1]This summary is based upon E. M. Foster and E. W. Holden, "Benefit-Cost Analyses of the Child Welfare Demonstration Projects: Understanding the Resource Implications of the IV-E Waivers," *Children and Youth Services Review* 24, nos. 6/7 (2002): 431–53, which is used here by permission of the publisher.

[2] Description from the ACF Web site, <http://www.acf.hhs.gov/programs/cb/initiatives/cwwaiver.htm>.

[3]M. Courtney, "The Costs of Child Protection in the Context of Welfare Reform," *Future of Children* 8, no. 1 (1998): 88–103.

[4]R. Zerbe and D. Dively, *Benefit-Cost Analysis in Theory and Practice* (New York: Harper Collins College Publishers, 1994).

[5]M. Cohen, "The Monetary Value of Saving a High-Risk Youth," *Journal of Quantitative Criminology* 14 (1998): 5–33.

[6]Washington Institute for Public Policy, *The Comparative Costs and Benefits of Programs to Reduce Crime: A Review of National Research Findings with Implications for Washington State* (Olympia: Washington Institute for Public Policy, 1999).

[7]M. Cohen, T. Miller, and S. Rossman, "The Costs and Consequences of Violent Behavior in the United States," in *Understanding and Preventing Violence: Consequences and Control of Violence,* ed. A. Reiss and J. Rother (Washington, DC: National Academy Press, 1994), 4:67–166.

[8]R. Plotnick, "Using Benefit-Cost Analysis to Assess Child Abuse Prevention and Intervention Programs," *Child Welfare* 78, no. 3 (1999): 381–407.

[9]The Office of Management and Budget uses 2 percent, the Congressional Budget Office uses 10 percent. These figures assume costs and benefits are already adjusted for inflation.

[10]One example is the Casey Outcomes and Decision-Making Project, whose publications include *Improving the Quality of Children's Services: A Working Paper on Outcome-Based Models of Service Delivery and Managed Care*, and *Assessing Outcomes in Child Welfare Services: Principles, Concepts, and a Framework of Core Indicators*, available on the Web site of the American Humane Society, <http://www.americanhumane.org/site/PageServer?pagename=pc_best_practice_casey_homepage>. "Measuring Success in Child Welfare," a Web site maintained by the Children and Family Research Center of the School of Social Work at the University of Illinois at Urbana-Champaign, summarizes the Casey and similar initiatives: <http://cfrcwww.social.uiuc.edu/pubs/Natl.Surv/backgrnd.htm>.

[11]J. Waldfogel, "Child Welfare Research: How Adequate Are the Data?" *Children and Youth Services Review* 22, no. 9/10 (2000): 705–41.