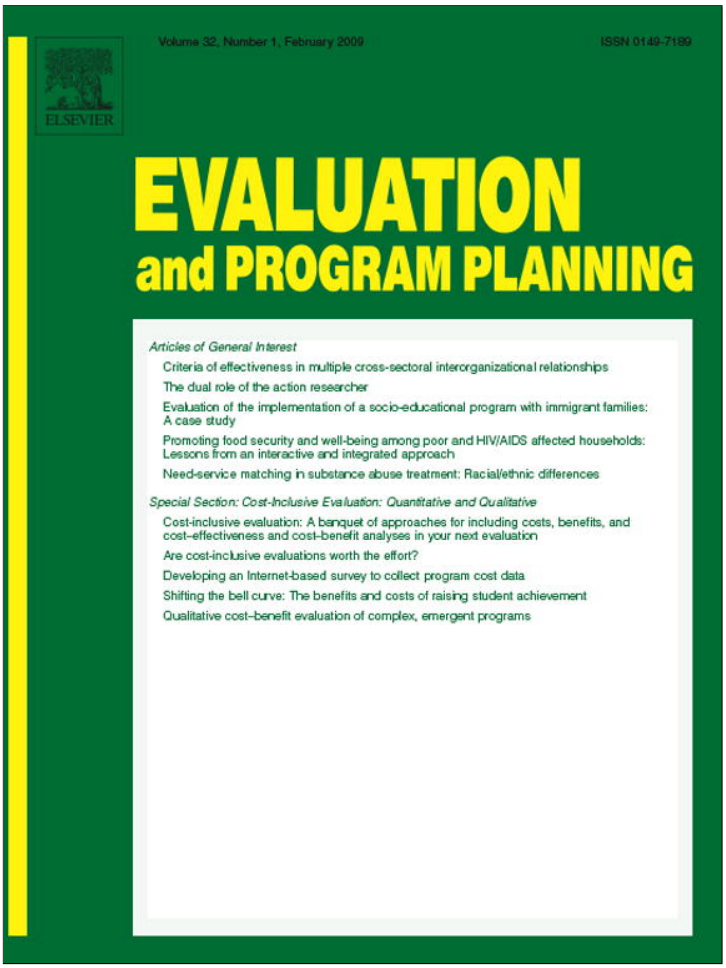

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Cost-inclusive evaluation: A banquet of approaches for including costs, benefits, and cost–effectiveness and cost–benefit analyses in your next evaluation

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ABSTRACT

An introduction to the special issue on *cost-inclusive evaluation*, providing a brief history of the use of costs, benefits, cost–effectiveness, and cost–benefit analyses in the evaluation of human services. Two tables present brief glossaries of terms and analyses common in cost-inclusive program evaluation.

"Everyone talks about costs ... but nobody evaluates them!" Well, that paraphrasing of Mark Twain's witticism[1] is no longer entirely true. Due perhaps to an overwrought concern about lack of expertise in measuring costs, combined with a strong preference to evaluate outcomes that are more socially and politically acceptable than crash "cash," evaluation has devoted overwhelmingly more articles, pages, courses, and workshops to measuring and improving outcomes than to measuring, let alone improving, costs (Yates, 1994). This, however, has begun to change. We are now entering the age of cost-inclusive evaluation (Yates, 2005), and the surge approximates the speed of a herd of rampaging ... turtles.

Gold, Siegel, Russell, and Weinstein's (1996) publication of *Cost–Effectiveness in Health and Mental Health* marked a turning point in the social acceptability of including costs in evaluation. Evaluations have, albeit rarely, incorporated costs, cost–effectiveness analysis, and even cost–benefit analysis since at least to the 1970s (e.g., Levin, 1975; Rothenberg, 1975). Reflecting developments in the field, the National Institute of Mental Health published a series of workbooks and reports by Carter and Newman (1976), Fishman (1975), and Sorensen and Phipps (1975) detailing methods of using cost–effectiveness analysis to evaluate and manage community mental health services emerging throughout the US. The mid-1970s also saw significant use of cost–benefit analyses in evaluating the extent to which mental health services reduced unnecessary use of health services (e.g., Cummings & Follette, 1976). Cost–effectiveness analysis was applied in education as well (cf. Levin, 1983). I admit that I also participated in these early efforts (e.g., Siegert & Yates, 1980; Yates, 1978; Yates, Haven, & Thoresen, 1979), publishing my first book on the topic at the end of this period (Yates, 1980). It took the prestige of Harvard and a U.S. Public Health Service-sponsored Panel on Cost–Effectiveness in Health and Medicine, however, to make what I will call *cost-inclusive* evaluation acceptable to mainstream program evaluation.

How acceptable has it become? It is still becoming so, but the variety of analyses detailed in this special issue of *Evaluation and Program Planning* illustrate not only its potential but the diverse ways in which it can become part of an evaluation. From the classic retrospective cost–effectiveness and cost–benefit analyses of Patricia Herman, Deirdre Avery, Crystal Schemp, and Michele Walsh, to the dramatic application of traditional quantitative cost–benefit analysis to innovations in education by Stuart Yeh, capped by the *qualitative* cost–benefit analysis by Patricia Rogers, Kaye Stevens, and Jonathan Boymal, the range of what costs can do for evaluation is demonstrably huge.

But how shall we *do* this sort of analysis, we whose training has been almost exclusively concerned with quantitative and qualitative study designs, methods, and theories of evaluation that can now be seen to have been almost myopically focused on *outcomes*, ignoring the quantitative and qualitative study of what it took to deliver the program to its clients — that is, resources and their

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[1] "Everyone complains about the weather, but nobody does anything about it."

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Table 1
Terms common in cost-inclusive evaluations.

Term	Definition	Example
Costs	Value (typically monetary) of the amounts of different types of resources consumed to implement the program	• $1243 per client per day of program implementation
Benefits	Value of resources produced or saved as a result of program implementation, measured in the same units as costs (typically money)	• $2506 saved per student per semester • $11,508 in additional income per year
Effectiveness	Results of program implementation that are measured in nonmonetary units	• 10.5 fewer accidents per intersection per year • .75 quality-adjusted life years added
Cost–beneficial	Favored according to results of cost–benefit analyses (see Table 2)	• The new program costs 74% as much as our old program, and produces similar cost-savings in criminal justice actions avoided
Cost–effective	Favored according to results of cost–effectiveness analyses (see Table 2)	• The new program costs 74% as much as our old program, and produces significantly better increments in Quality-Adjusted Life Years for clients
Fiscal Year (“Financial Year,” “Budgetary Year,” or “Accounting Reference Period”)	A 12-month period over which expenditures and revenues are recorded and compared, for tax, management, and accounting practices. Typically ends in a low-activity time of year, for convenience in data collection	• July 1, 2010 through June 30, 2011

costs? In this issue, Christine Caffray and Pinka Chatterji join the thin ranks of others who have developed computer programs that may reassuring evaluators that they can collect cost data without having to obtain an advanced degree in accounting or economics.

That Caffray and Chatterji's internet-based approach to assessing costs resembles to some extent instruments developed several years ago by substance abuse researchers (e.g., French, 2003; Zarkin, Dulap, & Homsi, 2004) shows that progress in incorporating costs into evaluation has varied greatly by topic area. Indeed, The U.S. Environmental Protection Agency has included cost–benefit analyses since at least the mid-1970s, shortly after its creation. The U.S. Army Corps of Engineers has used cost–benefit analysis since the U.S. Congress passed the 1936 Flood Control Act, requiring that structures intended to control floods only be erected if they could be shown to be cost–beneficial. What is remarkable now is that mainstream evaluators of social services seem ready to acknowledge the importance of adding costs to outcomes in their logic models, data collection plans, analyses, conclusions, and recommendations. The articles in this issue demonstrate what is to come in the social services, the sort of evaluations that may soon become the dominant means of answering questions about programs in manner most meaningful to those who operate, fund, and receive services from these programs.

All this being said, it may prove useful to readers to have at hand a glossary of terms unique to cost-inclusive evaluation. Table 1 presents terms that commonly appear in cost-inclusive evaluation; Table 2 describes common types of analyses that occur in cost-inclusive evaluation. Both tables use “program” as a proxy for “intervention,” “prevention effort,” “treatment,” “class,” and other common foci of evaluation. Both tables provide the terms on the left, followed by brief definitions, followed then by brief examples.

One particular insight into types of cost-oriented analyses may be better described here with text and simple formulae rather than in a table. Emphasizing a distinction noted by Patricia Rogers and colleagues in their article in this issue, and noted previously by the late Jeff Merrill and myself (Yates & Merrill, 2004), there is a difference between costs *of offering* a program, and negative monetary outcomes – sometimes also mistakenly called “costs” –

Table 2
Analyses common in cost-inclusive evaluations.

Term	Definition	Examples
Cost analysis	*Should* just measure costs *of* program implementation, but often is meant to include monetary outcomes (i.e., benefits) resulting from program as well	• $114 per client per day of outpatient services • Average of $253 was spent per treatment participant
Cost–benefit analysis (CBA)	Relationship between value of resources used by a program, and value of resources produced by program. Value is measured is same, usually monetary, units for both costs and benefits	• 2.1 ratio of benefits to costs after 1 year of program operation • Net $126 per client per year • 44 min saved for every 10 min invested in prevention
Cost–effectiveness analysis (CEA)	Relationship between value of resource used in program implementation and nonmonetary outcomes produced by program	• $51 per opiate-free day • $72 per pound lost and kept off for 6 months or more
Return on investment (ROI)	Cost–benefit analysis in which programs are viewed as means of saving money or generating income	• $1111 spent per $15,034 gain in lifetime earnings
Time to return on investment (TROI)	Typical time elapsed between program operation and occurrence of program benefits	• 4.2 years until the $1557 spent in smoking prevention services per targeted client pays for itself in reduced health care and other costs
Present value	Future costs and benefits, depreciated using one of several *discount rates* to reflect delayed value	• $1000 per year in saved medical expenses, over the 10-year period of program impact, amounts to $10,000 before present-valuing and $7722 after present-valuing, using a constant discount rate of .05
Sensitivity analysis	Examination of effects of varying specific assumptions on costs, benefits, effectiveness, and comparisons of these	• Present value of $1000 per year in saved expenses over 10 years of program exceeded program costs only at discount rates of .05 and lower
Comparison	Contrast two or more programs' costs, benefits, effectiveness, cost–benefit ratios, net benefit, cost–effectiveness ratios, return on investment, or time to return on investment	• “Statistically significantly greater net benefit for clients receiving substance abuse treatment . . .” (when cost and benefit data are collected for individual clients)

that result from the program. More simply put, cost-inclusive evaluations should measure and compare "inputs" to "outputs." For example, the value of resources used to implement a program may be compared to the value or amount of outcomes for that program:

costs → outcomes (1)

"Outcomes" can be monetary, i.e., benefits, or nonmonetary, i.e., effectiveness. It may be more meaningful to compare the costs and outcomes of one program to the costs and outcomes of another program, essentially adding "program" to what might be conceptualized as the cost → outcome equation:

costs → programs → outcomes (2)

If potential *mediators* of programs' effects on outcomes are considered, such as changes in individuals' cognitions, behaviors, or emotions, or in community awareness or organizational readiness, the cost → outcome equation becomes:

costs → programs → psychosocial mediators → outcomes (3)

As explained in more depth by Taxman and Yates (2001) and Yates (1996), this is the cost → procedure → process → outcome analysis (CPPOA) model referred to by several manuscripts in this special issue. The subjective, qualitative CPPOA reported in Yates (1999); (also detailed in Yates, Delany, & Lockwood-Dillard, 2001) has largely escaped attention to date.

Well, enough history: this was only meant as an appetizer; on to the main course! The following four articles will hopefully inspire you and your colleagues to involve costs, benefits, and a variety of cost-inclusive analyses in your next evaluation.

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