

Introduction to the Special Issue on Cost-Effectiveness Analysis

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Communication is at the heart of behavior change programs in developing countries. It is hard to imagine a program designed to bring about some type of change in behavior or health status that does not utilize at least some type of directed communication. How effective are these interventions, however, in bringing about the desired change? And at what cost? This special issue of the *Journal of Health Communication* examines the state of the art for addressing the familiar question, “What is the bang for the buck?”

We expect this issue to be of interest to two main audiences: (1) health communication specialists interested in designing the most effective programs on limited budgets, and (2) researchers/evaluators interested in applying state-of-the-art methods for conducting cost-effectiveness analysis of communication programs for behavior change.

Health communication programs aim to bring about change in individual behaviors and social norms using some combination of (1) mass media, (2) community-level interventions (e.g., community mobilization), and (3) interpersonal communication/counseling (Piotrow, Kincaid, Rimon, & Rinehart, 1997). Programs today tend to incorporate the highly effective elements of entertainment education (Singhal & Rogers, 2004). Earlier evaluations often measured the effects of a program consisting of a few or even a single communication channel in a limited geographical area. Today’s communication programs, however, often use a more comprehensive approach consisting of multiple, mutually reinforcing media. For example, the national HIV/AIDS prevention programs in many developing countries today use all three types of communication listed above, linking messages from the mass media to community-level activities, often through visual branding and a memorable tag line. These “full-coverage programs” potentially reach all members of the population, which is highly appealing to communication specialists wishing to achieve the greatest possible impact. Yet the potential reach of full coverage programs creates major methodological challenges to evaluators charged with measuring their effectiveness.

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While it is of some interest to measure the effectiveness of communication interventions in a limited geographical setting, the real challenge is to evaluate the impact of large-scale (national level) communication programs in which governments and international donor agencies have invested thousands if not millions of dollars.

In this issue, we examine the state of the art for costing communication programs as well as measuring their effectiveness, as necessary elements in establishing cost-effectiveness. Our review of the literature suggests that the costing of communication programs—where done at all—lacks standardized procedures that would allow for comparisons across programs. The articles in this issue briefly describe the techniques used to date in costing programs and most acknowledge limitations in this respect, resulting in a call for greater attention to costing in future studies.

Yet measuring effectiveness proves to be the greater challenge. In evaluations of national-level or full-coverage communication programs, the randomized trial—widely used in public health to measure effectiveness—is almost never a viable option. The evaluator cannot randomly allocate subjects to experimental (exposed) and control (nonexposed) groups if broadcast media are involved. Even quasiexperimental designs using comparison (nonequivalent control) groups with similar socio-demographic characteristics to the population exposed are rarely feasible. Other quasiexperimental designs (e.g., time series, separate sample pretest post-test design) may be useful in tracking change but fail to control for confounding factors, especially history (Fisher, Foreit, Laing, Stoeckel, Townsend, et al., 2002). Thus, evaluators faced with the challenge of full-coverage problems rely increasingly on more sophisticated analytic techniques, including econometric methods such as simultaneous equations models, propensity score matching, or longitudinal/panel data methods as reflected in the articles in this issue. Some health communication specialists will be able to follow the advanced statistical techniques described by the authors; many will not. To this latter group, we strongly recommend identifying collaborators who can apply these techniques to your programs.

As the authors in this special issue indicate, the challenge in evaluating the cost-effectiveness of health communication programs is (1) to obtain appropriate estimates of costs, and (2) to measure the effectiveness of the program in bringing about the desired change. Depending on the design of the analysis, the data allow one to answer a series of questions:

1. What is the cost per person reached by different channels or by any channel?
2. Which channel produced the greatest change for the cost?
3. What would be the incremental change in outcome expected from a specific increase in cost?
4. How do communication programs and their subcomponents—individually and in combination—rank in cost-effectiveness relative to other programs and interventions that also seek to effect behavior change?

This special issue begins with a review of the existing literature on the cost-effectiveness of communication programs to produce health outcomes, both in developed and developing countries. Hutchinson and Wheeler (in the first article in this issue) identify 45 studies that meet their criteria for rigor and relevant health outcomes. They also outline the methodological approaches used to date in arriving at these results. They conclude with an appeal for more systematic attention to the measurement of costs in future studies on this subject.

Next, Guilkey, Lance, and Hutchinson provide an insightful overview of the methodological challenges inherent in calculating the effectiveness and cost-effectiveness of communication programs. They identify problems inherent in this type of evaluation—such as controlling for nonrandom exposure, national and subnational program designs, and targeting of interventions—and they provide guidance in addressing them. This article serves as an excellent reference for researchers and evaluators interested in conducting cost-effectiveness analysis (CEA) on communication programs.

The following four articles present the results from cost-effectiveness analyses conducted in developing countries. Kincaid and Do address the question of cost per new acceptor of family planning and increase in contraceptive prevalence in the Philippines, attributable to a nationally televised program consisting of four spots. In addition to giving an in-depth discussion of methods, the authors also emphasize the role of theory in the design and evaluation of programs. Hutchinson, Lance, Guilkey, Shahjahan, and Haque follow with a cost-effectiveness analysis of the Smiling Sun campaign in Bangladesh, designed to bring about changes in the use of health services for improved maternal and child health: antenatal visits and childhood immunizations. This article is unique in evaluating both the national-level campaign and local promotional activities.

The final two empirical papers involve HIV/AIDS. Sweat and coauthors Kerrigan, Moreno, Rosario, Gomez, Jerez, Weiss, and Barrington determine the cost-effectiveness of two approaches to averting HIV infections among commercial sex workers in the Dominican Republic: one employing an environmental approach, the second combining the environmental approach with a structural approach. This article is unique among this set of articles in using an outcome measure that can be compared readily across different types of interventions: disability adjusted life years (DALYs). Sood and Nambiar evaluate a mass media campaign on HIV prevention in India, focusing on the relative impact and cost-effectiveness of three different components—a television drama, a reality show for youth, and television spots. Their analysis also examines factors that mediate behavior change in different components of the campaign.

Finally, Frick provides a commentary that describes this set of articles in the larger context of cost-effectiveness analysis in other areas of public health and health care utilization. He specifically discusses the role of cost-outcome analysis in the decision-making process for resource allocation.

This special issue provides researchers and evaluators with an understanding of the analytic techniques needed to measure the cost-effectiveness of comprehensive programs—with multiple, mutually reinforcing channels designed to reach all segments of the population. Yet it does not provide a generalizable answer to the question, what are the most cost-effective channels for delivering a health communication program, for several reasons. First, the number of CEA studies on health communication programs in developing countries is still very limited. It would be hazardous to draw conclusions from such a small sample of studies. Second, the outcomes measured are not comparable across studies; indeed, only the Sweat and colleagues' article uses DALYs, a measure that allows for comparisons across programs that is still very uncommon in the evaluation of health communication programs. Third, the intended audiences vary greatly, even across the four studies presented herein: men and women of reproductive age, caretakers of children, and commercial sex workers. The effectiveness of communication using different channels and media formats differs depending on the characteristics of the population (e.g., levels of literacy, access to media, urban/rural residency, age, sex).

Our purpose in publishing this special issue is to promote the greater use of cost-effectiveness analysis in relation to behavior change programs. With the eventual accumulation of studies, one can envision the future possibility of meta-analyses that will yield valuable data on the relative cost-effectiveness of different communication channels or different approaches to behavior change (e.g., structural versus environmental). Moreover, we aspire to learning more about the effectiveness of different media channels for specific audiences. Finally, as more data become available on the cost-effectiveness of communication programs, we will look to such meta-analyses to provide a basis for determining the “reasonable cost” for a specific health communication intervention designed to produce a certain level of change. Because of marked differences in the costs of media production and diffusion in different countries and in the characteristics of intended audiences, such data are more likely to suggest trends than provide definitive conclusions. Yet cost-effectiveness data will contribute to more rational decision making in the allocation of resources to communication programs.

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