

Costing Social and Behavior Change Programming—The Role of the Denominator



Breakthrough RESEARCH is gathering, analyzing, and sharing evidence on the costs and impact of social and behavior change (SBC) interventions to support the case that investing in SBC is crucial for improving health and advancing development. A review of the SBC costing literature identified 147 studies on SBC costs, methodological shortcomings, and knowledge gaps that can be addressed in new SBC costing studies.¹ To address these gaps, Breakthrough RESEARCH issued the *Guidelines for Costing of Social and Behavior Change Health Interventions*,² which lay out 17 principles for conducting high-quality costing studies. This is the first in a series of brief reports intended to complement the guidelines and support a Community of Practice around SBC costing by highlighting important issues and practices for SBC costing.

The foundation of any social and behavior change (SBC) intervention cost analysis is a thorough and reliable costing that adheres to the *Guidelines for Costing of Social and Behavior Change Health Interventions* and incorporates all relevant activity costs, including human resources, training, media, as well as other operational costs.² Knowledge of the total costs of an SBC intervention is, in and of itself, useful for donors and program planners to assist with budgeting future projects and their understanding of an intervention's costliest components.

For even greater SBC programming relevance, costs can be linked to denominators for comparisons with other interventions. This *SBC Costing Community of Practice*

brief examines three types of denominators to inform SBC researchers and implementers on the most appropriate denominators for an SBC costing study.

Linking total costs to SBC denominators typically results in a *unit cost* study, which allows calculation of how much an intervention costs per unit. The Global Health Cost Consortium defines unit cost as “the average cost of an intervention, service, or output.”³ Results of studies reporting unit costs for SBC interventions have been collated and are available in the [Unit Cost Study Repository](#), and examples of unit cost denominators are shown in Table 1 (next page).

TABLE 1 EXAMPLES OF DENOMINATORS USED TO CALCULATE SBC UNIT COSTS

| Program outputs | Health behaviors | Health impact |
|-------------------------------|---|--|
| Person exposed | Person/child sleeping under an insecticide-treated net (ITN) | Malaria infections averted |
| Person informed | | Birth complications averted |
| Person attended/participating | Women receiving intermittent preventive treatment in pregnancy (IPTp) | Child wasting prevented |
| Person recalled campaign | Child vaccinated for measles | Unintended pregnancies averted |
| Person screened | Infant exclusively breastfed for 6 months | HIV infections averted |
| Person/child targeted | Woman receiving antenatal care | Lives saved |
| SMS sent | Woman delivering in a health facility | Healthy life years (HLYs) saved |
| Peer educator | Person tested for HIV | Deaths averted |
| Provider trained | Person initiating preexposure prophylaxis (PrEP) for HIV | Disability-adjusted life years (DALYS) averted |
| Patient contacted | Person using condoms | |
| Group session | Persons discussing family planning | |
| School or class participating | Family planning acceptor | |
| | Couple year protection by family planning | |

The *marginal cost* of producing an additional unit, such as reaching one additional person with group counseling, can also be calculated.³ Costing studies often differentiate between the overall unit (or average) cost for an intervention and marginal cost, as marginal costs are expected to decline as interventions are scaled up, due to expected efficiencies when operating at an expanded scale. One study in Kenya found that the average unit cost for a community integrated prevention campaign was approximately \$42 per person in the initial campaign, but the average unit cost was projected as \$32 per person participating in an expanded version, due to fewer costs required for future planning and initial implementation, as well as increased reliance on local (vs. international) staffing.⁴

Denominator 1: Program outputs

Several program output denominators can be considered for SBC interventions. The most appropriate unit of analysis largely depends on the type of SBC intervention. For one-way communication interventions, such as those utilizing mass media, the unit cost is often the cost *per person exposed*, with the denominator the number of people who “watched” or “listened to” the intervention. More interactive communication interventions, such as interpersonal communication, often examine the cost *per person participating*, such as the number of people “visited” or who “received counseling.” Other SBC output unit costs include the cost *per provider trained*, for behavior change

interventions targeting providers, and the cost *per person contacted* for text and phone messaging SBC interventions that target individuals.

Unit costs for program outputs can be particularly informative for comparing different approaches for delivering SBC intervention strategies. One study in Bangladesh examined the costs of women’s participation in individual SBC counseling for maternal and child mortality reduction, revealing different unit costs based on when during her pregnancy a woman participated in the intervention (e.g., during antenatal care, delivery, or postnatal care).⁵ Another study in South Africa compared the costs of public health SMS campaigns for deaf clients using internal resources to contracting with private providers, finding that the “in house” approach was considerably more cost-efficient.⁶

Denominator 2: Health behaviors

When looking beyond program outputs to adopting health behaviors as a denominator, the unit cost required for changing an individual’s behavior can be calculated, allowing examination of the relative costs of behavior change among two or more SBC interventions. One study in Northern India compared different components of a behavior change communication campaign on the cost per additional person using a condom and the cost per additional person engaging in interpersonal communication

around HIV.⁷ Another study calculated costs per attributable behavior change for multiple SBC interventions and behaviors, finding wide variability in unit costs.⁸

To obtain data on a health behavior that can be used as a denominator, an effectiveness evaluation typically is necessary. The advantage of linking a costing study with an effectiveness evaluation is that one can compare the cost per behavior change across different kinds of SBC interventions. For example, if a program's objective is to increase use of modern contraception in a population, an intensive SBC interpersonal counseling intervention may require a higher cost per person participating than a less intensive SBC intervention, but the more intensive intervention may be more effective in increasing contraceptive use—and thus has a lower cost per person adopting modern contraception.

Denominator 3: Health impacts

Studies that examine the relative costs of health behavior change are often referred to in the literature as *cost-effectiveness analyses* (CEAs), although technically CEAs should examine denominators that represent health gains, such as lives saved or deaths averted.⁹ Other examples of health impact denominators from the literature include cost per malaria infection averted, cost per child wasting prevented, and cost per HIV infection averted.^{10–12}

An important health outcome used in CEAs for SBC is the cost per *disability-adjusted life year (DALY) averted*, which combines years of life lost due to early death and years of healthy life lost due to disability.¹³ Calculating the cost per DALY averted allows for the assessment of impacts across SBC interventions in multiple health areas, including integrated SBC programming: For example, the impacts of an SBC program that focuses on reproductive health, nutrition, and malaria prevention can be aggregated into this one measure. Additionally, cost-effectiveness can be evaluated by comparing the cost per DALY averted for a specific health SBC intervention to the gross domestic product (GDP) per capita for a given country. According to the World Health Organization, interventions that yield a cost per DALY averted below one times the GDP per capita are considered “highly cost-effective,” and those under three times the GDP per capita are “cost-effective.”¹⁴ Using GDP per capita as a benchmark is useful in gauging the overall cost-effectiveness of an SBC intervention, particularly when one is not comparing different SBC interventions.

For most CEAs, a model is needed to translate health behaviors into health impacts, although some effectiveness studies may be able to capture changes in mortality and morbidity over the study period. Existing models include the [Lives Saved Tool \(LiST\)](#) for maternal and child health, [OpenMalaria](#) and [Spectrum Malaria](#), and the [Impact 2](#) model for family planning. If models that calculate health impacts do not already exist, one can be built if a sufficient literature base exists to inform key assumptions and parameters.

Choosing the right denominator

When crafting an SBC costing study and considering which denominator is most appropriate, several factors are important. Table 2 (next page) summarizes study characteristics for each denominator category.

Three primary factors should be considered when choosing the primary denominator for a costing analysis (Figure 1, page 5). First, *What is the primary purpose of the study?* The first principle of the SBC costing guidelines describes the various financial and policy questions that can be addressed in costing studies. A unit cost analysis based on program outputs is particularly suited for budgeting and planning, as well as identifying the most efficient approach to reaching a target audience. For example, one could compare a mass media campaign disseminated via radio and television to determine which approach is most cost-efficient in reaching the target audience of young mothers. In contrast, denominators measuring health behaviors and health impacts are better suited for economic evaluations, which seek to determine relative intervention cost-effectiveness as well as understanding which programming strategies are most cost-effective in improving health. Cost-effectiveness results, if favorable, can also be used to advocate for further investments in particular forms of SBC.

A second key factor in determining the most appropriate denominator is *What type of study is financially and administratively feasible?* When utilizing program outputs as the denominator, data on the selected denominators (e.g., persons targeted, exposed, participated) are needed. These data are typically obtained from program management and evaluation systems, although existing survey data on mass media exposure data are sometimes available. For health behavior or health impact denominators, SBC costing data must be linked to an effectiveness evaluation of the SBC intervention.

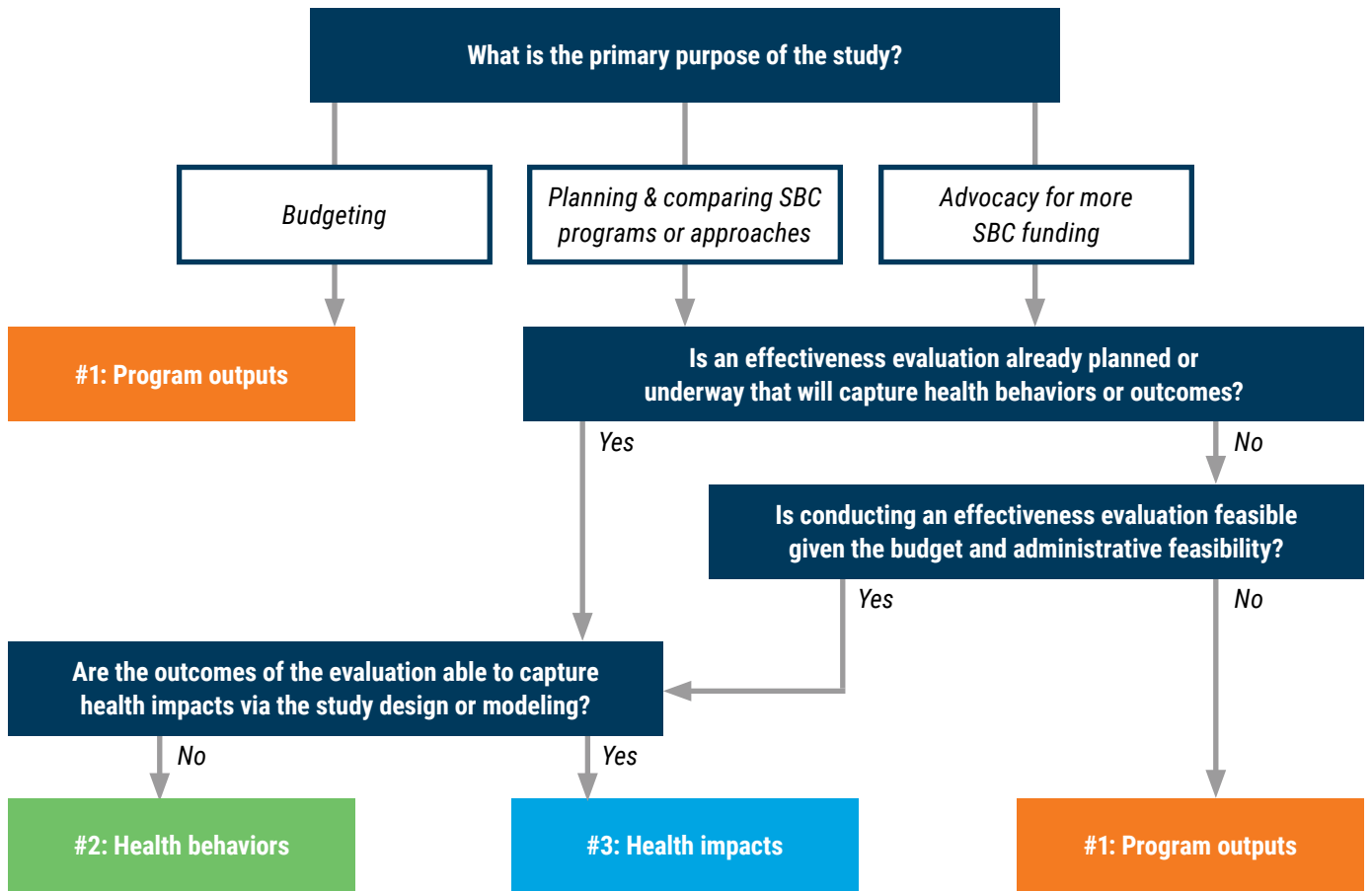
TABLE 2 STUDY CHARACTERISTICS BY DENOMINATOR CATEGORY

| Denominator | Program outputs | Health behaviors | Health impacts |
|------------------------------|--|---|--|
| Study type | Unit cost study | Costs per behavioral outcome | Cost-effectiveness |
| Primary purposes | Budgeting and planning Comparing SBC interventions to improve technical efficiency | Evaluating the cost per health behavior Examining the relative costs for improving health behaviors between two or more interventions for planning purposes Advocating for additional investments within a health field | Evaluating the cost per health impact Examining the relative cost-effectiveness on achieving health impact between two or more interventions for planning purposes Advocating for additional investments across health areas |
| Questions addressed | How much does the intervention cost per person reached/exposed/participated/ etc.? How do unit costs compare based on SBC approach or location? Which approach is more efficient in reaching the population of interest? | How much does the intervention cost per desired health behavior? How do the costs per health behavior compare based on SBC approach or location? Which approach is most cost-efficient in improving health behaviors? | How much does the intervention cost per desired health outcome? How do the costs per health outcome compare based on SBC approach or location? Which approach is most cost-effective at improving health outcomes? |
| Comparability | Across similar SBC interventions | Across interventions focused on a specific health behavior | Across health interventions and can examine across health areas if using denominators like DALYs averted or HLY saved |
| Required information | Cost of intervention + Data on how many people were exposed to or participated in the SBC intervention (e.g., number participating in group counseling) | Cost of intervention + Effectiveness evaluation of health behaviors (e.g., percent increase in discussing modern contraception with partner) | Cost of intervention + Effectiveness evaluation that assesses health impact or modeling to calculate health impact (e.g., unintended births averted, DALYs averted) |
| Examples from the literature | Kahn et al., 2011 ⁴ Hacking et al., 2016 ⁶ Sarker et al., 2013 ⁵ | Jah et al., 2018 ⁸ Kincaid and Do, 2006 ¹⁵ Sood and Nambiar, 2006 ⁷ | Boone et al., 2017 ¹⁶ Cohen and Saran, 2018 ¹⁰ Vickerman et al., 2006 ¹² |

Effectiveness evaluations, which are typically designed at the outset of an SBC intervention, require sufficient planning, staffing, and budgeting. Designing and implementing an effectiveness evaluation after an SBC intervention is implemented is difficult, because a baseline survey typically needs to be performed. Some SBC interventions are not amenable to a quantitative effectiveness evaluation, such as pilots of short duration or small sample sizes.

If an effectiveness evaluation is either underway or is feasible to implement, a third factor to consider is *Can the effectiveness evaluation capture health impacts via the study design or modeling?* Depending on the health behaviors measured and length of analysis, it may not be feasible to realistically assess changes in health impacts or utilize a model to translate behavior change into health impacts. For example, if an evaluation of an SBC intervention to

FIGURE 1 WHICH DENOMINATORS TO USE?



improve partners’ FP communication is planned one year following the beginning of an intervention, the period of time might be sufficient for capturing changes in communication patterns but more time would be needed to observe improvements in FP use.

Contributing to the SBC knowledge base

In general, if a costing study’s objective exceeds mere budgeting, usually a CEA with health impacts is the preferred denominator because it most closely captures how to achieve SBC goals—improved health. Increased evidence that SBC interventions are cost-effective, within accepted thresholds, helps bolster the advocacy case for increased SBC investments. CEAs reveal which SBC interventions are most efficient in improving health, while understanding costs per health behavior improvement is valuable for assessing SBC strategies.

When effectiveness evaluations are not available for generating costs per health impact or behavior, pursuing a unit cost study is an important contribution to the SBC knowledge base where data are lacking, particularly for integrated SBC programming, provider behavior change, and social media SBC interventions. Regardless of which denominator is used for a costing study, a thorough and reliable assessment of the total cost of SBC interventions is critical for both improving and advancing SBC research. Breakthrough RESEARCH is committed to advancing this field through robust SBC intervention costing along with increased engagement with other researchers. This series of *Community of Practice* briefs is intended to generate further discussions and collaborations for SBC costing. To contribute to this discussion, join the [SBC Costing Group on Springboard](#).

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