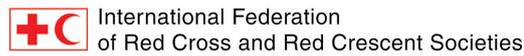


RBM Partnership
To End Malaria



**Checklist for Reporting on Malaria
Social and Behavior Change Program
Evaluations**

January 2019



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Acronyms

CONSORT	Consolidated Standards of Reporting Trials
ITN	Insecticide-treated net
M&E	Monitoring & Evaluation
MNCH	Maternal, neonatal and child health
RBM	Roll Back Malaria
SBC	Social and behavior change
TREND	Transparent Reporting of Evaluations with Non-Randomized Designs
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Introduction

Well-designed and properly executed program evaluations are the most reliable evidence for policy making.[1] Their results can affect all levels of malaria programs: from health delivery practice to national and global policy. Social and behavior change (SBC) activities—which encompasses a vast range of approaches used to promote individual behavior change, social norms, and supportive environments—are key components of many malaria programs, but they are often incompletely or inconsistently described in evaluation reports and papers.[2] This limits decision makers' ability to distinguish between good quality, strategic behavior change campaigns, and public relations efforts. It also reduces the efficiency of efforts to synthesize the effectiveness of different messages and approaches and their reproducibility. Good quality reporting is even more crucial as malaria control efforts seek to keep up with shifts in epidemiology and communication technologies. Well-written reports can lead to a better understanding of “what works” in different contexts and are crucial to maximizing investments in research.

From 2012 to 2014, representatives from a variety of research and non-profit organizations—who eventually formed the Monitoring & Evaluation (M&E) Task Force of the Roll Back Malaria Social and Behavior Change Communication Working Group—met to discuss opportunities and gaps in the monitoring and evaluation of malaria SBC programs. Among the gaps noted was a dearth of published evaluations of malaria SBC, the importance of building capacity in best practices for evaluating SBC, and a lack of essential details about interventions in the literature. The document was reviewed again during the 2017 annual meeting of the working group, with minor updates made in 2018.

The result was this guidance document—a checklist—that emphasizes the description of the SBC intervention and rationale for the SBC strategy, choice of outcomes, methods of creating comparisons; and a discussion about the effects, causal attribution, and future implications and generalizability of the results. Checklist items were grouped into three domains: intervention, study design, and discussion.

The checklist was based on the implementation and M&E best practices outlined in the *Strategic Framework for Malaria SBCC: 2018–2030*. Other materials used to develop the checklist included journal reporting guidelines for randomized control trials (Consolidated Standards of Reporting Trials [CONSORT]), non-randomized evaluations of behavioral programs (Transparent Reporting of Evaluations with Non-Randomized Designs [TREND]), and general behavior change evaluations (Working group for Intervention Development and Evaluation Research [WIDER]) [1, 3, 4]. Hundreds of leading journals have used these guidelines and they are associated with improved reporting.[5]

√	<p>DOMAIN 1: INTERVENTION DESIGN</p> <p>How the intervention was designed and a description of the intervention:</p>
	1. What behavioral problem was the SBC intervention intended to address?
	2. What findings from formative research informed the intervention?
	3. What theories were used to develop the intervention or analysis?*
	4. Are target audiences described in a way that helps readers understand the behavioral context?
	5. Are messages, materials, and activities described in terms of the program theory and intended audience? (Nice-to-have: A link to materials, resources, and research from the program)
	6. Were messages and materials tested with target audiences prior to roll out? How?***
	7. Was there a description of the duration, frequency, and quantity of SBC activities? What were the qualifications of those delivering the intervention? Was a monitoring mechanism available to verify the reach or delivery of content?
	8. How did exposure to the intervention vary? Was there substantial variation in the reach of media and community partners?*
	9. If possible: Were the costs described? Were any existing structures or resources leveraged by the intervention?***
	<p>DOMAIN 2: STUDY DESIGN</p> <p>Selection of outcomes and method of comparison:</p>
	1. How were units assigned to a study groups? If units were not randomized, what measures were taken to minimize the risk of selection bias?*
	2. If baseline information is available: Is there a comparison of baseline characteristics for socio-demographic characteristics and outcomes for each study group? What statistical methods were used to control for baseline differences?*
	3. If there was a comparison group, is there a description of the group? What messages, materials, and activities did this group receive? What efforts were made to prevent contamination?*
	4. Did the authors use the recommended outcome indicators from the RBM malaria SBC indicators guide (exposure to the SBC intervention; changes in malaria behaviors; and intermediate outcomes; such as knowledge, norms, attitudes, risk, and efficacy)? What were the effect sizes and confidence intervals?
	5. Were the selected outcomes theoretically plausible given the intervention design?***
	6. How soon after the SBC intervention was the data collected?
	<p>DOMAIN 3: DISCUSSION</p> <p>Interpretation of the results, factoring in strengths, limitations, or weaknesses of the study:</p>
	1. Are multiple criteria for causal attribution assessed?
	2. Is there a discussion on the mechanism or causal pathway?*
	3. To what extent are the findings consistent with previous research?
	4. Were alternative explanations given? This can include issues such as access, the presence of other programs in the intervention environment, psychosocial variables, or contextual events. Describe discrepancies between program design and actual implementation, particularly between final content and channel selection, and theory of change.
	5. What factors facilitated or hindered the implementation of the intervention?*
	6. Is there a discussion on the extent to which the results of the study can be generalized? Was there a discussion on cost effectiveness, scalability, adaptability, and/or sustainability?***
	7. What are the implications for future research, SBC campaigns, and policy?

*Adapted from the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement, a checklist for standardized reporting of nonrandomized controlled trials.

**Adapted from commentaries on TREND.

Details on checklist items

Domain 1: SBC intervention

(2) Formative research: In one district, the majority of women may be not aware of the importance of malaria prevention in pregnancy. In another district, most women may think that taking a medicine on an empty stomach is more dangerous than malaria during pregnancy. Formative research methods—such as focus groups, key informant interviews, surveys, and observations—can be used to understand the beliefs, preferences, constraints, motivations, current behaviors, and communication channels accessed by target audiences. This information, with behavioral theories and materials testing, provide the basis for strategically selecting messages and approaches with the best chance of producing measurable change.[2]

(3) Theories: Behavioral and social theories lend insight on why and how the communication activities may succeed. Theory helps SBC managers identify where the audience is in the process of behavior change and how they will get to the desired change. Using theory to guide to design the intervention may lead to stronger effects; and theory-based evaluations make these studies more likely to contribute to the science of behavior.[12–14] Five commonly used behavior change theories include Reasoned Action/Planned Behavior, Social Learning, Diffusion of Innovations, Health Belief Model, and Extended Parallel Processing or Fear Management.[11] In some instances, external evaluators are asked to evaluate SBC programs or analyze data sets—such as Demographic Health Surveys or Malaria Indicator Surveys—if it is not clear that behavioral theories were used. In these instances, evaluators can select associations with plausible theoretical bases and, in their write-up, discuss the role of unmeasured—and possibly relevant—theoretical factors.

(4) Target audiences: Communication activities and desired outcomes vary, depending on the communication needs of different segments of the population. Communication efforts do not necessarily need to target the general population, or even the groups that are at highest risk epidemiologically. Communication strategies identify the primary target audiences (those who will perform the key health practices) and secondary audiences (those who influence the primary audiences). Secondary audiences may be targeted because they are decision makers. Tertiary audiences—community groups, local leaders, providers—are also addressed if their support is critical.[2] Major factors, such as rural/urban setting, gender, livelihood, household role, etc., provide important insights into the behavioral context and appropriateness of the intervention design.

(5) Messages and materials: SBC campaigns range in focus. Some have a narrow focus, such as insecticide-treated net (ITN) use, which is commonly seen during the net distribution campaigns; while integrated campaigns address ITN use among other health issues, such as prompt fever diagnosis and treatment, zinc, oral rehydration salts uptake for diarrhea, and family planning. The SBC campaigns often include interpersonal communication components, such as those between a community health worker and her client; as well as mass media activities like radio, TV, and short message service messaging. Different channels have different strengths, challenges, and costs.[15] Detailed descriptions of the channels selected and the message focus will help readers understand the relevance of the measured outcomes and replicate the intervention. For interpersonal or community activities, it is also useful to know how participants were grouped.[10]

(6) Materials testing: Intervention elements should be developed and tested on a small scale with the target audience, prior to roll out. Concepts, messages, radio scripts, and prototypes of print materials can be pretested using standard research methods. The results from the pretests are used to make adjustments. Pretesting helps confirm whether storylines, messages, and materials are understood, acceptable, and have the desired effect with the intended audience. [2] Pretesting also increases the likelihood of the participant's responsiveness.[16] When in-depth audience participation is involved, such as through human-centered design, the nature of the participation should be described.

(7) Duration and intensity, qualifications of providers, and monitoring: Changes in behaviors may take months or years, depending on where the audience is in the process of change, the messages and approaches used by the campaign, how long the campaign runs, and the volume of communication activities during that period. The quality of messaging may also differ by the amount of training given to the provider/implementer. Similarly, media houses may vary in geographic reach and listenership. Establishing a monitoring mechanism through supervision reports, media monitoring reports, and activity logs helps quantify and verify the delivery of content and the intensity of activities; and if they are having the intended effect on the population. [14]

Domain 2: Study design

(10–12) Assignment method: Evaluators of SBC programs generally agree that there is no one perfect design for evaluating SBC programs. However, it is acknowledged that although randomization of individuals, facilities, or communities to control—or intervention groups—provides compelling evidence of effectiveness, it is not practical for programs that include mass media or those intended to reach the entire population. Many campaigns are designed for maximum reach and it is often difficult to prevent contamination in control areas.[17, 18]

Post-campaign cross-sectional surveys and longitudinal surveys have been used to determine if those who are exposed and those not exposed have different outcomes. Although vulnerable to threats, such as self-selection and confounding—and although direct causality cannot be determined using these designs—they have been shown to provide useful information on campaign effectiveness.[19] Threats to validity can be reduced by controlling for participant characteristics with multivariate statistical techniques, or using a time-series/panel design, so that respondents function as their own controls.

One powerful and advanced approach—multivariate causal attribution—combines theory-based structural equation modeling, propensity score matching analysis, and sensitivity analysis to create an evaluation approach that is both theory- and method-driven. The structural equation modeling enables researchers to test causal pathways; propensity score matching creates statistically matched control groups; and sensitivity analysis tests the effect of unmeasured confounders. Altogether, multivariate causal attribution makes it possible to draw a valid causal inference for how much behavior change can be attributed to the communication campaign.[20, 21]

(13) Choice of outcome measures: The indicators in the SBC malaria indicator reference guide were recommended, based on findings from the existing literature and behavior change theories. Core measures include percentage of participants who practice the desired behaviors; percentage of participants exposed to/able to recall the SBC intervention; and evidence of change in intermediate outcomes, such as knowledge, norms, attitudes, risk, and self-efficacy. Occasionally, health outcomes, such as malaria prevalence, can be reported with these outcomes. Evaluators should measure a range of proximal and distal outcomes—as described by the program theory—to help assess what parts of the process of change the SBC intervention affected.

Many, but not all, of the outcomes that SBC interventions seek to address are based on subjective outcome measures. Many outcomes can be assessed in multiple ways. When possible, descriptions of the validity, reliability, and psychometric properties of the measures used are particularly useful for assessing the quality of the outcome measures, especially when they are not widely available or discussed in the literature. As a body of evidence accumulates about the measures used in evaluating SBC, the field will be able to develop standard scales or questions to allow for comparisons across populations and interventions.

Domain 3: Discussion

(16) Causal attribution: Determining causality is a central question in evaluation. Since 1965, scientists have used Bradford Hill's list of conditions to consider before inferring causation, including—

- a. **Strength:** A large effect is more likely to be causal than a modest effect; however, correlation does not imply causation.
- b. **Consistency:** The effect has been observed repeatedly in different studies.
- c. **Specificity:** There are no alternative explanations for the effect.
- d. **Theoretical coherence:** The association is consistent with what we know about the issue; whether the intermediate and distal outcomes matched expert (theory) predictions.
- e. **Plausibility:** The effect makes intuitive or theoretical sense.
- f. **Dose-response:** Larger doses produce larger effects.
- g. **Temporality:** The cause precedes the effect.
- h. **Responsiveness to experiment:** Whether or not variations and replications were associated with varied or similar results.

As Bradford Hill notes, each criterion is necessary, but not sufficient to ascertain causation. To establish the best case for causality, evaluators should present an assessment of multiple criteria.[22]

Discussion

Although donors and governments have invested millions of dollars in malaria SBC, much remains unknown about when, where, and how it can be used effectively. Researchers need to publish their work and present it in ways that help us understand (a) the choice of outcomes selected and how they were affected by communications programs, (b) the magnitude of these effects, (c) the elements of a communication program and the context in which it operates that contribute to its effectiveness, and (d) the cost effectiveness of communications in malaria control.[23]

Investments in research will reach maximum utility if evaluation reports and published papers contain detailed descriptions of the campaign's approaches and content, including channel mix, messages, duration, reach, and frequency; as well as how these interventions were developed. This includes the theoretical principles on which they were based, the formative research that informed their design, and whether materials were tested with the target audience.

It is likely that authors will report on some items and not on others. Word limits may restrict some writers' ability to report on all the recommended items. Several ways can be used to address this. Authors can provide as much description as possible, within the limits, and then provide a link to the intervention's details online. This can be a toolkit of communication materials, program, and formative research reports, as well as the full evaluation reports or supplemental analysis. Similarly, authors can create elegant and concise ways of presenting the additional data, such as flowcharts to map the link between exposure, intermediate outcomes, and behaviors, or provide a table or textbox with the intervention details.[16]

The items in the checklist should be based on evidence, whenever possible. The reports containing the recommended information need to be examined to determine if they provide more biased results compared with those that do not contain the information.[24]

Reporting guidelines can help ensure that investments in research are used efficiently. Donors, SBC practitioners, and the public have a right to expect that research results are reported in ways that can help us understand "what works, for whom, why, when, and at what cost." [16] These suggestions are a first step toward ensuring that research reports contain sufficient information for documenting lessons learned from SBC programs, synthesizing the evidence base, improving transparency, and drawing attention to the potential rigor of well-designed and implemented SBC studies and programs.[25]

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