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## Investing in social and behavior change is cost-effective for improving malaria behaviors in Tanzania

Breakthrough RESEARCH

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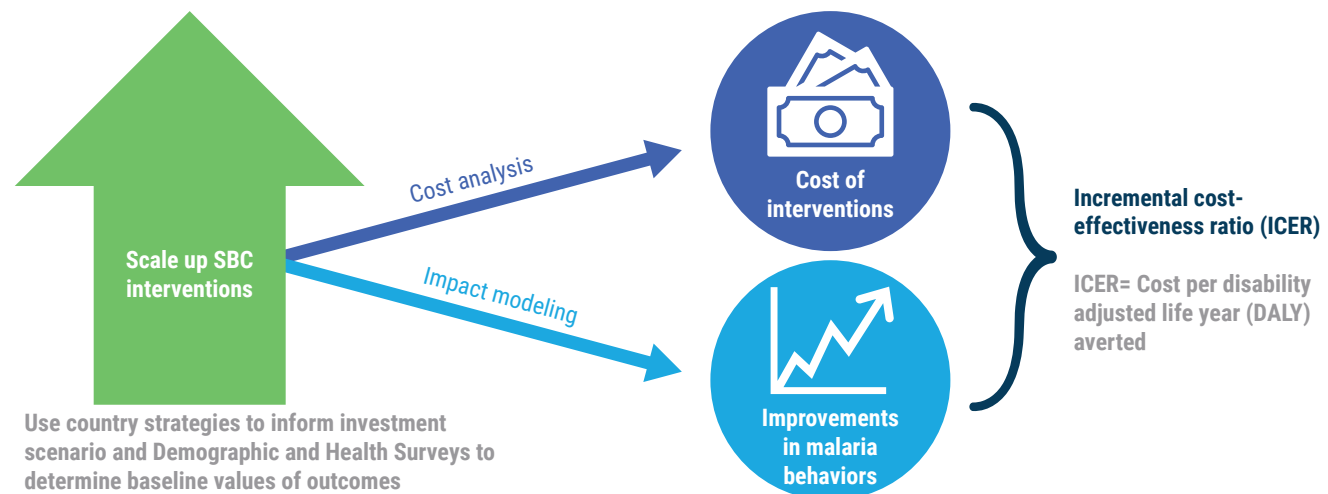
Social and behavior change (SBC) interventions are considered an essential part of malaria prevention and treatment interventions, yet gaps in information on the cost and impact of SBC mean decisionmakers have underappreciated the value of SBC for contributing to improved health outcomes.

To address this issue, Breakthrough RESEARCH has leveraged evidence from 112 studies on the impact of SBC interventions on malaria health behaviors and 70 studies on general SBC intervention costs to model the cost-effectiveness of SBC programming for malaria in the **Business Case for Investing in Social and Behavior Change for Malaria**.<sup>1</sup>

## Key Points

1. A review of the literature found that **SBC improves the use of insecticide-treated nets (ITNs)**. Studies show that SBC interventions are positively associated with increased ITN use both directly and via intermediate determinants that impact ITN use, including malaria-related knowledge, positive attitudes toward ITNs and malaria prevention, and communication about ITNs with family, friends, and others about ITNs.
2. The literature also indicates **that SBC improves care seeking for fever and treatment adherence** as components of malaria case management. Interventions were found to have a positive relationship directly with care seeking for fever and treatment adherence as well as through improved knowledge of malaria causes, symptoms, and treatment.<sup>2</sup>
3. **Cost-effectiveness modeling results indicate that malaria SBC interventions are highly cost-effective.** In addition to synthesizing the literature on general SBC costs and SBC effectiveness for malaria-related health behaviors, we used national planning documents to estimate five-year investment scenarios (2019–2023) and national survey data on baseline health behaviors and intermediate determinants of behaviors to calculate an incremental cost-effectiveness ratio (ICER). In this model, the ICER is the incremental cost per disability-adjusted life year (DALY)<sup>3</sup> averted, a common metric for assessing cost-effectiveness (Figure 1). The results of the investment case scenarios modeled in Tanzania and Côte d’Ivoire indicate that SBC investments for malaria are highly cost-effective based on World Health Organization (WHO) benchmarks.<sup>4</sup>

**FIGURE 1: APPROACH FOR EXAMINING COST-EFFECTIVENESS**



<sup>1</sup>Effectiveness studies were reviewed examining the links between SBC interventions and three malaria outcomes: ITN use, components of malaria case management, and the use of intermittent preventive treatment in pregnancy (IPTp). However, due to data limitations, the model did not ultimately incorporate SBC related to IPTp.

<sup>2</sup>While malaria SBC works through intermediate determinants beyond knowledge, such as attitudes, beliefs, and social norms, there was not enough published evidence to model these pathways.

<sup>3</sup>One DALY represents the loss of the equivalent of one year of full health. DALYs for a disease or health condition are the sum of the years of life lost due to premature mortality (YLLs) and the years lived with a disability (YLDs) due to prevalent cases of the disease or health condition in a population” (WHO, <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/158>, accessed 15 April 2021).

<sup>4</sup>The WHO threshold for a highly cost-effective intervention is a cost per DALY averted lower than one times the gross domestic product per capita. (WHO Commission on Macroeconomics and Health 2001).

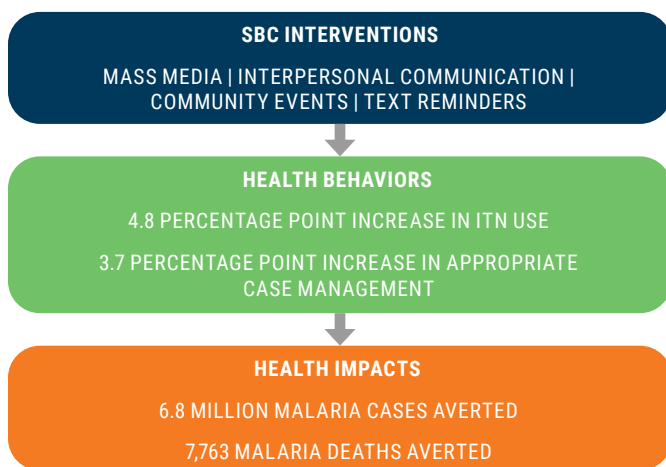
## SBC FOR MALARIA: A COST-EFFECTIVE INVESTMENT IN TANZANIA

The Breakthrough RESEARCH business case for investing in SBC for malaria modeled SBC cost-effectiveness of malaria SBC in Tanzania by combining evidence on the cost and effectiveness of SBC for malaria-related health behaviors with country-specific data on the current malaria context and an estimated five-year investment scenario based on national planning and implementation reports from the United States Agency for International Development and the Global Fund.<sup>5</sup> In Tanzania, an integrated SBC program includes SBC interventions aimed at improving the use of ITNs and care seeking for fever and treatment adherence, such as mass media campaigns, interpersonal communication, community events, and text message reminders related to malaria treatment.

### Impact

In 2019, 46% of Tanzanians reported using an ITN the previous night. Using the literature on SBC effectiveness to model change in the use of ITNs over the 2019 to 2023 investment scenario, SBC investments would increase ITN use by 4.8 percentage points. Appropriate case management, defined as the completion of a full course of recommended antimalarial treatment for malaria cases, was 25% in 2019. As a result of malaria SBC, this would increase by 3.7 percentage points over the five-year investment scenario by improving care seeking for fever and adherence to treatment. Over five years, these percentage point gains in malaria behaviors result in approximately 6.8 million malaria cases and 7,763 deaths averted. These impacts are specific to malaria; however, the other health impacts from the integrated SBC program related to family planning, HIV, and maternal and child health are not captured in this analysis.

**FIGURE 2: MALARIA SBC LEADS TO SUBSTANTIAL HEALTH IMPROVEMENTS**



### Breakthrough RESEARCH

This activity is being implemented as part of Breakthrough RESEARCH. Breakthrough RESEARCH catalyzes social and behavior change (SBC) by conducting state-of-the-art research and evaluation and promoting evidence-based solutions to improve health and development programs around the world. Breakthrough RESEARCH is a consortium led by the Population Council in partnership with Avenir Health, ideas42, Institute for Reproductive Health at Georgetown University, Population Reference Bureau, and Tulane University.

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### Breakthrough RESEARCH

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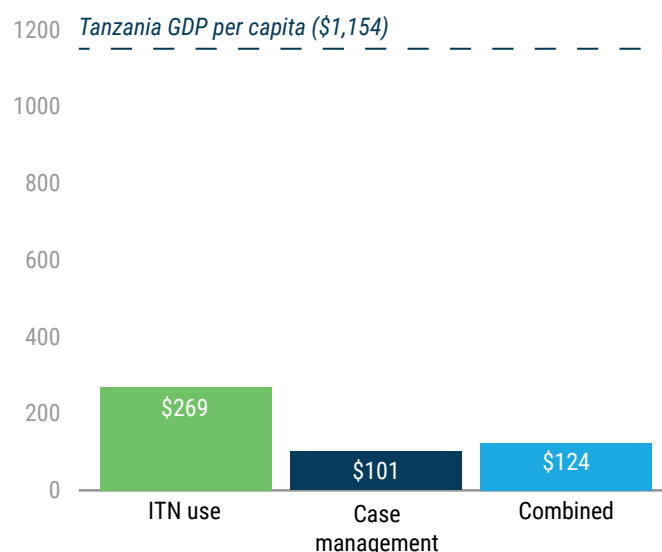
### Cost

The total SBC costs were calculated by multiplying unit costs for general SBC activities documented in the literature and the total expected reach of SBC programming based on national planning reports. The annual costs for SBC for the 2019 to 2023 investment scenario in Tanzania are estimated at \$8.6 million in 2019 United States dollars (USD).<sup>6</sup> Note that these costs represent the total integrated SBC costs, which could not be separated from the malaria-specific costs for this analysis.

### Cost-effectiveness

Five-year SBC investment scenarios addressing ITN use and care seeking for fever and adherence in Tanzania result in a cost per DALY averted of \$124. This result is far below Tanzania's gross domestic product (GDP) per capita of \$1,154 and thus considered highly cost-effective based on WHO standards.

**FIGURE 3: COST PER DALY AVERTED SHOWS MALARIA SBC AS HIGHLY COST-EFFECTIVE IN TANZANIA (2019 USD)**



<sup>5</sup>Reports used to inform the investment scenarios include the Tulonge Afya annual reports for 2018 and 2019 and the 2020 first quarter quarterly report, the Tanzania US President's Malaria Initiative operational plans for 2019 and 2020, and the Global Fund project Kiungo cha Mabadiliko ya Kutokomeza Ugonjwa wa Malaria Project 2019 annual and January–June 2020 semiannual report.

<sup>6</sup>Tanzania's SBC program integrates messaging across multiple health areas (e.g., malaria, family planning, maternal and child health), which likely results in efficiencies and thus lower costs. The unit costs used here do not reflect those efficiencies and data are not available at present to inform alternative unit costs for integrated SBC. As such, the actual total costs for SBC in Tanzania may be lower in Tanzania than the costs presented here.