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Awareness and acceptance of alternative interventions for malaria control among stakeholders in Tanzania: a community engagement process

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Abstract

Background: Despite great progress made over the past decade, malaria continues to be a significant threat to human health globally, where more than three billion people are at risk of malaria. Current malaria vector control tools have contributed to significant declines in malaria burden over the recent decades, but these interventions are rapidly reaching their limits due to challenges with resistance to public health insecticides and antimalarial drugs, changes in mosquito behaviours and sub-optimal access and compliance to malaria control interventions. It is increasingly recognized that alternative interventions are needed to supplement the current interventions to speed up malaria control and elimination efforts. In order to ensure that new or alternative interventions are appropriate and effective, it is crucial that all key stakeholders are appropriately and adequately engaged. However, currently there is limited information on how alternative interventions may be perceived by the stakeholders, and limited information on the best strategies to engage the stakeholders in research and implementation of the interventions . My PhD aimed to explore and assess awareness and acceptance of alternative interventions for malaria control and elimination among key stakeholders in Tanzania, as a first step towards developing a stakeholder engagement model towards effective malaria control and elimination in Tanzania.

Aims: The overall aim of the PhD was to assess awareness and perceptions of the alternative interventions for malaria control and elimination among key stakeholders in Tanzania, and to explore opportunities for improving malaria control and elimination efforts through stakeholder engagement. It had the following specific objectives: To explore opinions of stakeholders on the need and potential of alternative interventions for malaria control in Tanzania; 2. To investigate community perceptions regarding genetically-modified mosquitoes (GMMs) and their potential for malaria control in Tanzanian villages; 3. To investigate key obstacles and opportunities relevant for effective rollout of larviciding for malaria control in southern Tanzania; and 4. To explore perceptions and recommendations for housing improvement for malaria control among in malaria endemic settings in southern Tanzania.

Methodology: An exploratory sequential mixed-methods approach was used, incorporating focus group discussions (FGD), key informant interviews (KII) and survey questionnaires. A series of FGDs were done with representatives of key stakeholder groups in the country to explore their views and opinions regarding the alternative technologies for malaria control. Preliminary findings from the FGD were used to develop a questionnaire to assess the baseline awareness and acceptance of the alternative among the stakeholders. Key informant interviews (KII) were conducted with district malaria control officials to explore their awareness, experiences and perceptions of larviciding as an alternative malaria control intervention in Morogoro region.

Key findings: The following key findings were observed in this study: (i) There was an overall agreement among stakeholders that the Tanzanian government has made great efforts in malaria control over the past couple of decades. There was also an overall agreement that the current interventions were not sufficient to help achieve malaria elimination by 2030. (ii) Larviciding was the most preferred alternative intervention to invest in by all stakeholder groups. However, its implementation was shadowed by a number of limitations including insufficient knowledge among the district and local implementers as well as inadequate funding, brought on by lack involvement of local organization in the implementation. (iii) Mosquito modification technology generated mixed views between the stakeholder groups. While community members, policy makers and regulators indicated varying degrees of support for this technology, research scientists expressed skepticism, question whether the country is ready for such an advanced technology. The concept of genetic modification was not new among the community members; they were able to draw similarities with their practices of cross-breeding domestic animals and using hybrid crop seeds. (iv) Housing improvement was the most understood and the most preferred alternative intervention among community members, who viewed it as the most sustainable intervention in eliminating malaria and many other infectious diseases. However, this intervention drew skepticism among policy makers, regulators and research scientists who questions its sustainability. (v) Effective stakeholder engagement was recommended as the most crucial determinant of success in malaria control and elimination efforts in Tanzania.

Conclusions: Different stakeholders preferred different interventions; however larviciding was overall the most accepted intervention. While implementation of larviciding has already commenced across the country, further research into this intervention revealed a number of gaps, which will need to be responded to for its success. Stakeholder engagement was recommended to be a crucial aspect in determining the success of the malaria control efforts in Tanzania.

Effective stakeholder engagement is therefore an essential component in determining and implementing malaria control interventions. Stakeholders in this study propose engagement methods that build equal partnership with all key actors of malaria control including local public and private organizations, and not only improve knowledge of malaria transmission and its control among the key players, but also take into account the needs and preferences of the targeted communities. Further research is needed to determine stakeholder engagement models that can be effective in different malaria endemic settings. Likewise, additional research is needed to thoroughly explore the potential of the other preferred interventions, i.e. housing improvement and mosquito modification technology in malaria control and elimination in Tanzania.

Key words: Malaria control and elimination, alternative interventions, stakeholder engagement, housing improvement, larviciding, mosquito modification technologies.