Procedures and analysis plan - Quantifying the economic benefits of privately funded malaria control interventions in Maragra, Mozambique

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Summary

The eradication of malaria could be accelerated by enlisting multiple non-governmental actors, including large private firms operating in endemic regions. Participation, however, relies on a clear and accurate quantification of the cost and impact of malaria control activities on economic output. This project proposes to use the case of the sugar mill of Maragra Açucar CA (southern Mozambique) to assess the impact of privately-managed indoor residual spraying on workers' economic output (in terms of both absenteeism and productivity). This document gives an overview of both the plan for data collection and analysis.

Background

The burden of malaria is extremly high in Mozambique, even by regional standards (Brundtland, 1999). With a prevalence as high as 40%, malaria accounts for 29% of all deaths, and 42% of deaths among children under five (USAID, 2011). Nearly a quarter of maternal deaths are due to malaria (K. Singh *et al.*, 2014). Along with HIV/AIDS (A. Berg *et al.*, 2014), malaria is one of the greatest threats to public health in southern Mozambique.

In addition to malaria's impact on the health of its victims, the illness also has major economic consequences for the ill. Children who survive malaria face hurdles which can have life-long economic repurcussions, particularly those related to intellectual development (such as cerebral malaria) (Idro *et al.*, 2010) and general growth anemia (Mabunda *et al.*, 2008). Their families also pay economically - 32-34% of households incur malaria-related costs which rise to the level of "catastrohpic" per the World Health Organization's standards (ie, 10% of household income or 40% of non-food income) (Castillo-Riquelme *et al.*, 2008). Though the burden of malaria is decreasing (Murray *et al.*, 2014), the costs of the disease at the individual level remain enormous, given that the disease affects primarily those with low socioeconomic status.

The economic effects of malaria are not only absorped but its direct victims, but also by the economy as a whole. Malaria control has been found to be associated with population-level economic growth in multiple studies (REFERENCES NEEDED). By eliminating early-life blocks on the development of a population's human capital, the returns on a reduction in malaria's burden are long-term and exponential.

From a public health perspective, the case for the need to control and eventually eradicate malaria is strong and has been made clear in multiple studies across time and geography. However, the role which private firms which operate in malaria endemic regions can be expected to play is less obvious, given the current lack of compelling evidence regarding the return on investment in short- and medium-terms for privately-funded malaria control activities. To the extent that many firms already carry out some form of "in-house" malaria control, analyzing those firms' data offers the unique opportunity to assess whether the benefits (in purely economic terms) of those activities outweight the costs, or vice-versa.

Study Rationale

In recent years, much of the discourse regarding malaria in endemic regions has shifted from control to eradication (CITATION NEEDED). This shift will require changes not only in the implementation of public health interventions, but also the recruitment and sustenance of multiple and novel fronts in the fight against malaria. One potential source

Control of malaria is a potential win/win for business/government

For firms to step up, compelling evidence quantifying their potential benefits is needed

Objectives

Primary objective

Quantify the direct economic benefits of malaria intervention

Specific objectives

Methods

General

Study area

Study design

Study population

Timing and duration of the study

Data collection and management

Data analysis

Ethics clearance

Confidentiality

Methodology specifications by objective

Details on and qualifications of research team

Details on members of the research team are available at www.economicsofmalaria.com.

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Appendix

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