

August 2008

INSECTICIDE TREATED NETS

IMPACT ON HEALTH AND PRODUCTIVITY, AND DETERMINING WILLINGNESS TO PAY

Principal Researchers: Profs. Brian Blackburn (Stanford), Aprajit Mahajan (Stanford) and Alessandro Tarozzi (Duke)

Partner Organization: Bharat Integrated Social Welfare Agency (BISWA), Orissa

CMF Research Associate: Daniel Kopf

Timeline: Baseline completed in June 2007 and the project completion is expected in February/March 2009

Funding: Biotech International generously donated 7500 untreated nets for the free treatment groups. Other fundings come from CMF, Stanford PFIIS, OTL and SCID.

Unit of randomization: Panchayat (1 village within each panchayat)

Surveys: Individuals (tested for malaria, filariasis and anemia) and households. Village-level information also collected to a limited extent.



BACKGROUND

The use of insecticide treated nets (ITNs) for the prevention of malaria has been advocated by several international bodies. Multiple studies have shown that ITNs significantly reduce malaria-related morbidity and mortality. However, despite numerous efforts by various advocacy groups and governments, the adoption rate of ITNs in many malaria-endemic areas remains low. Reasons for the poor usage of ITNs include logistical difficulties, social acceptance, and cost.

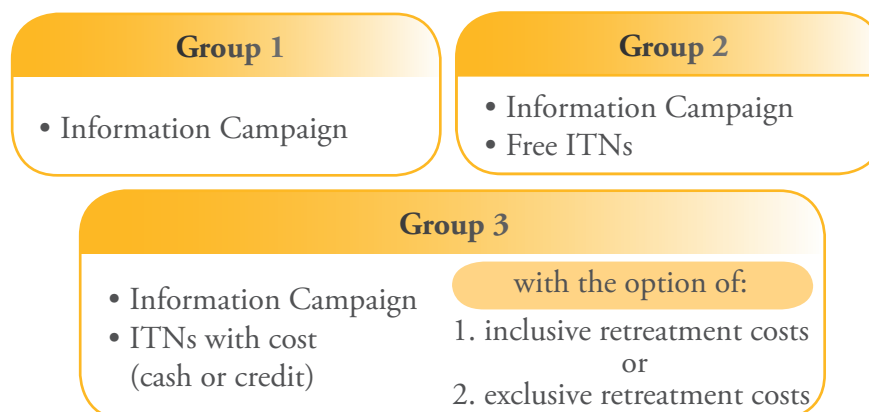
In areas such as Orissa, India's poorest state, the cost of purchasing nets sufficient to protect all members of a family can represent a substantial portion of monthly income. In this context, micro-credit contracts, which allow spreading the cost over time, could positively influence uptake of ITNs.

This project is being implemented in collaboration with BISWA, an NGO-MFI, in the malaria-endemic areas of Orissa. The project utilizes multi-filament polyester nets provided by Biotech International and the nets are treated with Bayer deltamethrin insecticide. The primary goal of the project is to test several different financial approaches to ITN provision. The second goal is to quantify the impact of these nets on not only health outcomes but also on crucial socio-economic indicators such as adult economic activity and child schooling. A precise knowledge of all these benefits is important not just for quantifying the direct and indirect impact of ITNs but for marking the first step in understanding the low adoption rates we see today. There is some evidence that individuals respond in seemingly counter-intuitive ways to health-improving interventions. For instance, some studies have noted a steady drop-off in ITN re-treatment over time, considerably accelerated if the re-treatment is not provided free, despite the low cost of re-treatment and the enhanced protection against mosquitoes provided by the insecticide. The third goal is to understand the causes of this behavior in order to help design delivery mechanisms that mitigate these problems.

As in the case of [the Chulha \(cooking stoves\) project](#), the objective is to identify interventions which are complementary to microfinance and can have a strong impact on household income and wealth. The eventual goal would be to take these interventions to scale by effectively marketing these ideas and providing households with microfinance to purchase these products.

RESEARCH DESIGN

Following the baseline survey, the intervention was implemented in 150 villages across 5 districts of Orissa. The sample villages were randomly selected into three different groups. One third of the villages was given only an information campaign, an approximately hour long session on the causes and effects of malaria and the use of bednets as a preventive measure. Another third was given the same information campaign as well as enough free nets to cover all or most members of the household with emphasis on covering all under-5 and pregnant women. The third group of villages was exposed to the information campaign and then offered the opportunity to purchase bednets from BISWA either on credit or in cash. In addition, the third group was offered two different purchasing contracts, one that was inclusive of retreatment and one that was exclusive of retreatment. The diagram below demonstrates different treatment for each of the three groups.



Since the group assignment is done through a random process, any differences we observe across different groups at the end of the study can be attributed to the particular intervention in question. For instance, the comparison between Group 1 and 2 will provide the true impact of ITNs when they are provided for free. Similarly, by comparing outcomes between Group 2 and 3 we can estimate the impact of ITNs under two different delivery schemes - free ITNs and ITN delivery through micro-credit contracts. Furthermore, the two different purchasing contracts offered to those in Group 3 enable us to describe and understand if and whether there are systematic differences between households that opt for the commitment product (i.e. the loan product with retreatment) versus that don't. This could also further our understanding of whether and in what way commitment of consumers in such health interventions affects the final outcomes. Such information can then be incorporated into the development of health intervention programs in the future.

PROJECT STATUS

The baseline survey was conducted in May and June of 2007. The first round of intervention, in which the information campaign and distribution and treatment of nets were performed, was completed in September and October of 2007 in all 150 study villages. The second round of the intervention for Group 3 was conducted in October-November 2007. The second round of the intervention gave the clients an opportunity to observe the efficacy of the nets and make up their mind to purchase them. A short take-up survey was also administered to those in Group 3 to further understand the SHG members purchasing decision.

The first round of retreatment for the nets was completed in April-May 2008 and the second round will be completed in September-October 2008. The follow up survey is to be conducted in November-December of 2008.