

# REACHING THE POOR WITH HEALTH SERVICES

2008

## Tanzania

### Social Marketing for Malaria Prevention— Increasing Insecticide Treated Net Coverage

Malaria infects over 500 million people worldwide each year. The most vulnerable are infants, young children, and pregnant women. Pregnant women are vulnerable, their immunity to malaria is decreased during pregnancy, especially the first and second pregnancies, while young children have not yet developed immunity to malaria. The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) estimated malaria caused more than 3,000 child deaths a day, mostly in Africa in 2003.

Insecticide treated nets have been shown to effectively reduce malaria mortality on average by 18% among children in Sub-Saharan Africa and increase the proportion of improved birth outcomes. WHO promotes increasing insecticide treated net coverage and the Abuja Declaration signed by African leaders at the African Summit on Roll Back Malaria in 2000 called for protecting 60 percent of children with insecticide treated nets by 2005.

#### Meet the Challenge

The principal challenge to achieving the Abuja Declaration goal was to develop an efficient, equitable and sustainable mechanism to deliver insecticide treated nets to the poor and most vulnerable segments of the population. One method—social marketing, employs the principles and practices of commercial marketing techniques to deliver socially beneficial goods at affordable, and often, at subsidized prices to particular groups. Social marketing of insecticide treated nets, through a public-private partnership and meaningful community participation in Tanzania, has successfully and quickly increased the distribution of mosquito nets among the poorest populations, particularly children and pregnant women. This program has resulted in improved health out-

comes with respect to morbidity and mortality impact of Malaria on the population of children.

#### Strategic Planning

The KINET project, sought to increase coverage of insecticide treated nets to a defined population in Tanzania, targeting pregnant women and the mothers of children under the age of 5 years through combined social marketing and community participation techniques. Initiated in 1997, it was implemented by the Ifkara Health Research and Development Center (IHRDC) in the Kilombero and Ulanga districts in Southwestern Tanzania. Located on the low terrain of the flood plain of the Kilombero River, both districts experience high levels of rainfall annually from November to May and are high transmission areas for malaria, particularly during the rainy season.

To determine the project's effectiveness of benefiting the poor, it had a built-in evaluation component and collected baseline information on demographics, risk factors for child mortality, and knowledge about childhood diseases. Marketing research determined access, knowledge and preferences relating to mosquito nets and their usage. This provided a reference point for evaluating the achievements of the initiative.

The information collected showed that although villagers perceived a link between mosquitoes and malaria, the link between malaria and the children's deaths was not as evident to them. This is because many people did not believe the enlarged spleen, convulsions or high fever were caused by malaria.

Marketing research established the availability of nets and that mosquito nuisance was the main reason for their use in the 37% of homes found to have at least one net in 1996.



Insecticide treatment of nets was rare, though people were familiar with the idea. Thus, though knowledge about the availability of nets existed, their use was viewed mainly as a convenience rather than as a disease prevention tool. These findings highlighted another challenge to net ownership, the need to change the mindset of individuals regarding the purpose of the nets and they served as a basis for the subsequent planning of the project.

### **Community Participation**

Community participation in the early stages of the program and their continued involvement in development of the product contributed greatly to the development of an effective social marketing strategy as well as to the success of the project. Sensitization meetings allowed community leaders to express their concerns with the project, at the same time allowing researchers the opportunity to identify opportunities for utilizing strengths within the communities, as well as weaknesses and potential threats to the success of social marketing efforts requiring their attention. The selection of products, the development of a marketing strategy, including the message to be disseminated and the product delivery method represented a true collaborative effort between the marketing research team and the targeted population. This process differs from traditional marketing methods where decision making is generally controlled by the seller.

The KINET project worked closely with local health and education authorities to develop an information, education, and awareness communication strategy guided by fundamental social marketing principles that include: promoting certain messages together with a product carrying an appealing brand name and logo; the marketing should be consumer oriented; and specific populations are targeted (Andreasen, 1995) The knowledge and understanding gained by the KINET team regarding the preferences and the socioeconomic status of community members as well as the community's awareness of the importance of having a successful program created a foundation for collaboration and dialogue between the team and community members in exploring the concepts of sustainability and cost recovery.

### **Product Choice and Pricing**

The brand name chosen for the treated nets and insecticide was "ZUIA MBU" (which means prevent mosquitoes in kiSwahili). The actual products selected were dark green high quality polyester nets in two sizes (100 x 180 x 150 cm and

130 x 180 x 150 cm); and a water-based formulation of lambda-cyhalothrin (ICON TM) insecticide for treating and saturating the mosquito nets. It was packaged in a 6 ml sachet, enough to re-treat one net thus eliminating the potential danger of exposing children or other individuals in the household to surplus insecticide.

Product pricing was decided through a combination of village sensitization meetings and past experience of affordability in other areas. Marketing research revealed local people were willing to pay near cost recovery for the nets and a little less than cost recovery for the insecticide sachets. The nets were sold for TZS3000 (US \$5.00 in 1997) and the insecticide sachets for TZS250 (US \$0.42 in 1997).

### **Product Promotion through Effective Communication**

Seeking to improve general awareness and knowledge about the association between malaria and ill health and the protective nature of insecticide nets, the IHRDC and the District Health Management Team developed a promotional campaign and materials designed with the findings from the research conducted about community perceptions of severe childhood disease. The promotional schemes included setting up posters, billboards, distributing leaflets, exercise books used in schools, etc. Mass communication campaigns were organized around sporting events, local drama presentations, and other forms of entertainment such as singing/dancing, and product launching parties. The strategy developed was disseminated to the sales agents and resource people from the villages (including leaders, primary school teachers and maternal and child health aides). Clinic health aides were trained to speak to pregnant women and mothers of young children. Interpersonal interaction during message delivery is an important component of social marketing.

### **Distribution**

The products were distributed through a combination of public and private outlets. Sales agents were nominated from each village by community leaders and members in conjunction with program personnel in open meetings. These included health workers, parish priests, community leaders and shopkeepers. They were remunerated on a commission basis and a reward system was established for retailers who met or exceeded targets. The agents were trained to treat the nets and keep sales records. Subsequent bi-annual training and review sessions were conducted. Initially, project person-

nel distributed the product to sales agents. As the program's coverage area grew, wholesalers assumed this role.

## Evaluation

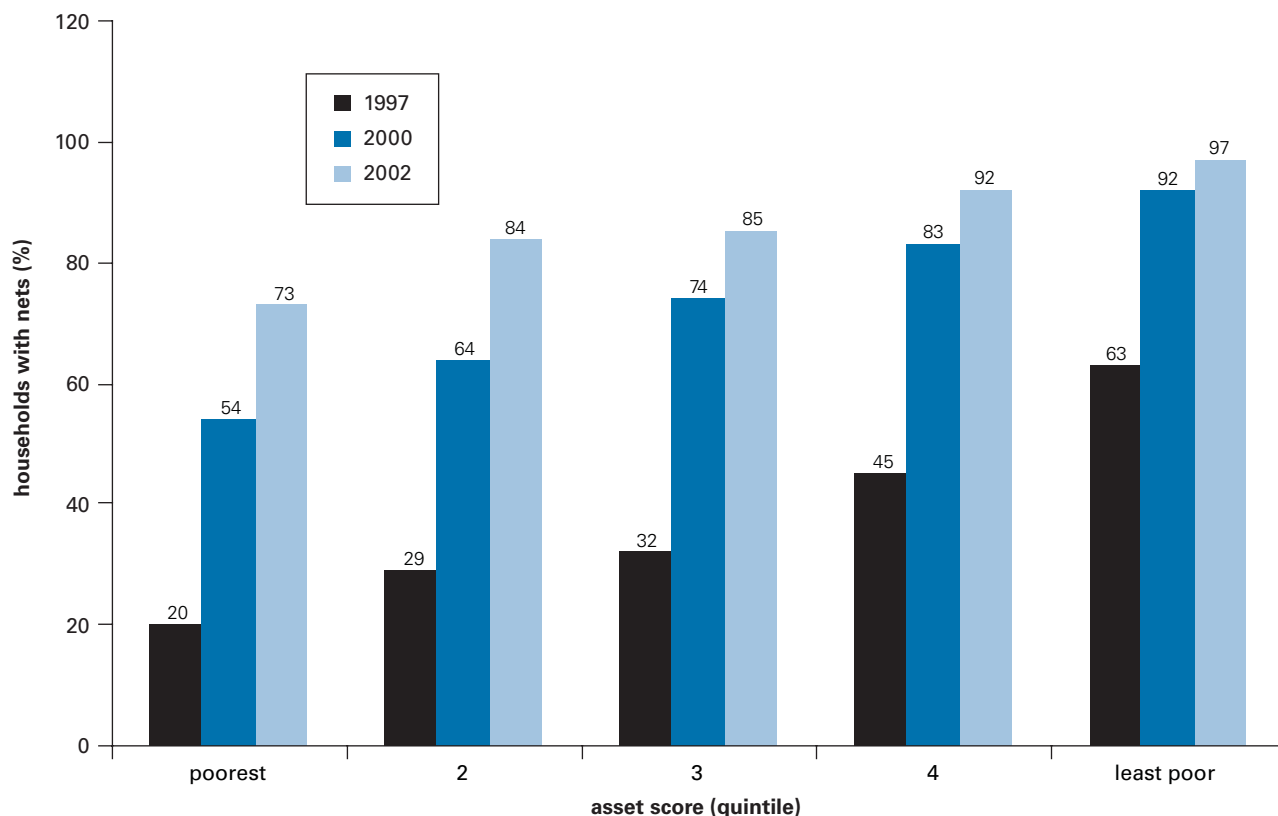
One important feature of the project was the identification of a specific area to provide a sampling frame for evaluation of the program. A demographic surveillance system was established in 1996 by way of a complete census of the population covered in Phase I of the project which included 55,000 people living in 11,000 households in 18 villages. The census collected baseline vital statistics data on the population, and mapped residences as well as temporary structures farmers erected to be close to their fields. Subsequently, each household interviewed at baseline was visited every four months to record changes in the composition of the population such as migration into or out of the area, births, pregnancies, and deaths. In addition, data about ownership of nets and other assets such as a tin roof, a radio, or a bicycle were collected and a socioeconomic status score was calculated for each

household. With the scores, the approximately 12,000 households surveyed were ranked by quintiles. Over the life of the program a variety of surveys and assessments were conducted to provide baseline data and record changes, as well as post-implementation research to evaluate the program's success in terms of its outcome in percentage in net utilization as well as the impact of increased utilization on childhood malaria morbidity and mortality outcome indices.

## Distributional Outcomes

Between 1997 and 2000 this social marketing program effort was able to bring about more than 100% increase of using the insecticide treated nets in the number of individuals living with the 1st to 4th lower quintiles of the economic index. Net use in the poorest quintile was at 20% in 1997 and rose to 73% by 2002. The poorest/least poor ratio (an indicator of equity), went from 0.3 at baseline to 0.75 after five years. The proportion of net ownership in 1997, 2000 and 2002 is displayed by economic status in Figure 1.

Figure 1. Household net ownership before and after social marketing, by socioeconomic status in 1997, 2000 and 2002



Further evidence of the social marketing program's success is the overall increase in net ownership (of insecticide treated or not treated nets) from 58% to 83%. Use of treated nets rose from 10% to 61%.

### Cost Effectiveness

The cost effectiveness of the KINET insecticide treated net distribution project in Tanzania was also evaluated. The cost for insecticide treated nets was US\$ 1,560 per death averted and US\$ 57 per disability-adjusted life year (DALY) averted. When untreated nets were factored in the costs dropped to US \$1,018 per death averted and US \$37 per disability adjusted life year (DALY) averted. The cost per death averted falls in the range of the results of randomized controlled trials in Ghana and Kenya, of US \$2,304 and US\$ 3,228, respectively, per death averted.

### Health Outcomes

Insecticide treated nets were successful in protecting children from malaria and associated conditions. Several studies assessed child survival and morbidity after program implementation. One documented an increase of 27% in survival among children between the ages of 1 month and 4 years who were insecticide treated net users. The other demonstrated that while both insecticide treated and not treated nets showed protective efficacy with respect to malaria morbidity, and specifically, anemia (classified as hemoglobin level of less than 80 g/l) and enlargement of the spleen, the protective efficacy of the treated nets was always greater. (See Table 1)

**Table 1. Protective efficacy of insecticide treated and not treated nets in Kilombero and Ulanga Districts of Southwestern Tanzania, 1999.**

	Insecticide treated	Not treated nets
Parasitemia (presence of malaria parasite)	62%	51%
Anemia (hemoglobin <80 g/l)	63%	37%
Enlarged spleen (splenomegaly)	76%	71%

Source: Abdulla et al, BMJ 2001; 322:270-273

### Program Benefits

Social marketing was successful in accomplishing an important objective of the project, making the nets available to the poorest of the poor, as well as reaching the target populations of pregnant women and children. By 2000, the program covered a population of close to 350,000 people in 122 villages in Tanzania. This effort's results highlight social marketing as an efficient, cost effective methodology for controlling malaria infection and its associated morbidity and mortality impact in children.

This model of social marketing with public private partnership implies that unlike in the case of private sector commerce the monetary return on the government's investment, if any, may not be great. Nonetheless, it transfers goods through the commercial system, thus seeking to develop a sustainable distribution method, accomplishing a social goal, while supporting commerce. Besides the immediate successful outcomes, there are also other longer term and less tangible benefits that a social marketing scheme, such as the KINET project, can potentially provide. These include education, community organization, and perspective transformation at the individual level. The long term impacts can also result through the achievement of in-country human and technical resource capacity building. The community infrastructure could potentially serve as a framework for other community health prevention initiatives.

This brief series is intended to summarize good practices in Health, Nutrition, and Population Programs benefiting the poor. This brief was adapted from Andreasen AR., Marketing Social Change: Changing Behavior to Promote Health, Social Development, and the Environment. San Francisco: Jossey-Bass Publishers; 1995; 348p.; Armstrong Schellenberg et al., Effect of large-scale social marketing of insecticide-treated nets on child survival in rural Tanzania. *Lancet* 2001;357(9264):1241-1247; Hanson et al. Cost-effectiveness of social marketing of insecticide-treated nets for malaria control in the United Republic of Tanzania. *Bulletin of the World Health Organization* 2003;81(4):269-276; Nathan et al. Mosquito nets and the poor: Can social marketing redress inequities in access? *Tropical Medicine and International Health* 2004;9(10):1121-1126; Schellenberg et al. KINET: a social marketing programme of treated nets and net treatment for malaria control in Tanzania, with evaluation of child health and long-term survival. *Transactions of the Royal Society of Tropical Medicine & Hygiene* 1999 May-Jun;93(3):225-231; Abdulla et al. Impact on malaria morbidity of a programme supplying insecticide treated nets in children aged under 2 years in Tanzania: community cross sectional study. *BMJ* 2001; 322:270-273. The views expressed in this note do not necessarily reflect those of the World Bank.

