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MONITORING AND EVALUATING DELIVERY SYSTEMS FOR INSECTICIDE-TREATED NETS: THE TANZANIAN NATIONAL VOUCHER SCHEME

by Kara Hanson and the Tanzanian National Voucher Scheme Monitoring and Evaluation Team

Increasing ITN coverage is seen as a valuable means to progress towards the Millennium Development Goals¹. However, there remains considerable debate about how best to deliver nets and design and target subsidies in order to achieve an appropriate balance among the objectives of equity, efficiency, and sustainability²⁻⁵.

One key delivery issue is scale of operation: many ITN projects have been implemented on a very small scale, covering individual communities or a small number of districts. Only a few ITN delivery models have been expanded to operate at a national scale. These latter models include the integration of ITN distribution with immunization campaigns⁶⁻⁷ and social marketing through public sector facilities⁸.

The Government of Tanzania was awarded a grant from the Global Fund for AIDS, TB and Malaria (GFATM) to scale up ITN delivery using an innovative voucher scheme that delivers subsidy to the biologically vulnerable. The vouchers are known as *Hati Punguzo* in Kiswahili, meaning discount card. Currently every pregnant woman is eligible to receive a fixed value (approx US\$2.45) voucher at her first antenatal care visit. She can use this as partial-payment for an ITN of her choice from any participating retailer.

Given that the voucher scheme is fully integrated within the existing health system structure, and reinforces the commercial distribution system, it has theoretical advantages over other delivery systems in terms of sustainability. However, the effectiveness of vouchers in achieving high levels of coverage in vulnerable groups has yet to be proven.

In order to provide timely information on the impact of the voucher scheme and the success of the



implementation processes to the implementing partners, an independent approach to monitoring and evaluation has been adopted in Tanzania. This monitoring and evaluation will supply data to inform the international public health community about the effectiveness and cost-effectiveness of using vouchers to deliver ITNs. The Ifakara Health Research and Development Centre (IHRDC) and the London School of Hygiene and Tropical Medicine (LSHTM) were contracted by the Government of Tanzania to conduct this independent monitoring and evaluation.

A multidisciplinary approach to the evaluation was agreed to by the partners, and the parameters for key outcome measures that would facilitate a comprehensive understanding of this delivery system were defined. The outcome measures included the following:

- (1) ITN coverage among target groups
- (2) Provision and use of Reproductive and Child Health (RCH) services as a point of voucher delivery
- (3) Misuse of vouchers
- (4) Impact of the voucher system on the commercial ITN market
- (5) Cost and cost-effectiveness of the voucher scheme.

The principle of triangulation of data sources was adopted and multiple evaluation tools were developed. Data on coverage of ITNs, provision of RCH services,

misuse of vouchers and stakeholder analysis were collected from 4 complementary sources: (1) Annual national household surveys, with a sample size large enough to estimate ITN use in under 5s at the district level, were conducted over 2 years; (2) Health facility surveys collected data on antenatal service provision and voucher related indices, and interviewed pregnant facility users in the same clusters as the household survey sample; (3) Focus groups and in-depth interviews were used for further investigation where more clarity was required on issues raised by the household and health facility surveys; (4) Voucher tracking, which involved following up a sample of issued vouchers by interviewing recipients, was used to find the extent to which vouchers and nets reached their target group.

Data on the impact of the voucher system on the commercial ITN market were compiled from a retail audit conducted over two rounds of a random selection of shops across multiple districts. Finally the economic and financial costs of the voucher scheme were estimated using a standard health economics methodology.

These data, collected from multiple disciplinary perspectives, will provide evidence for Tanzania, and ultimately other African countries, to guide informed choices about which delivery strategies to select when scaling-up interventions for health. This is of particular relevance at a time when other critical interventions need to be implemented such as artemisinin-based combination therapies (ACTs) for malaria control and antiretroviral drugs (ARVs) for HIV/AIDS.

The current phase of monitoring and evaluation activities will be completed by the end of 2006. However, from the international perspective, the results will have much greater meaning if they can be compared with alternative delivery schemes which are operating at scale. Such studies would vastly enrich the evidence about how best to achieve high and sustained levels of ITN coverage.

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ACHIEVING SUSTAINABLE MALARIA PREVENTION THROUGH A MARKET-BASED APPROACH

by David McGuire

Malaria continues to kill more than two million people in Africa each year, mainly in the sub-Saharan region. Between 300 and 500 million people suffer from malaria; one out of 20 children dies of malaria before the age of five. Families are often forced to spend 20% of their income on malaria treatments while public health institutions spend up to 40% of their budgets on outpatient malaria treatment.

In an attempt to address the ongoing suffering caused by malaria, the United States Agency for International Development (USAID) established the **NetMark** program through the Academy for Educational Development (AED). NetMark is working to reduce malaria cases and deaths in Africa by increasing the **availability, affordability and use** of insecticide-treated mosquito bednets (ITNs) through partnerships with local stakeholders, commercial net and insecticide manufacturers and their African distributors.

To do so, Netmark uses three main strategies:

- ◆ Create and expand commercial ITN markets to help make this lifesaving product readily available long after NetMark ends;
- ◆ promote ITNs through consumer education about malaria and correct net use; and
- ◆ target subsidies to help the poorest and most vulnerable obtain ITNs through the same convenient commercial outlets used by wealthier populations.

Implementation of the NetMark program focuses on sub-Saharan Africa, where 90% of malaria deaths occur. NetMark currently has full programs in seven countries (Ethiopia, Ghana, Mali, Nigeria, Senegal, Uganda, and Zambia) and has provided limited support in Zimbabwe and Cameroon.

Results to Date

The following NetMark results are based on retail audits, sales data from partners, and household surveys conducted in 2000 and 2004:

Millions more people know about the dangers of malaria and are sleeping under ITNs.

- ⇒ NetMark's communication activities have helped teach more than 100 million people about the dangers of malaria and how ITNs can prevent it.
- ⇒ In four of the eight NetMark countries surveyed in 2004, it is estimated that almost 15 million more people were protected from malaria by ITNs than before NetMark began activities in 2000.

Nets are getting to the poorest people.

- ⇒ NetMark's programs have benefited the lower socio-economic groups as much as or more than the wealthiest groups. In Ghana, Nigeria, Senegal and Zambia, the poorest 40% of the population own 33% of the nets.
- ⇒ Awareness of ITNs has increased from an average of 43% in 2000 (Nigeria, Senegal and Zambia) to 82% in 2004. Ownership of ITNs has increased from 5% to 27% over the same period.
- ⇒ NetMark has demonstrated that voucher programs are feasible in sub-Saharan Africa. In Ghana, Nigeria, Senegal and Zambia, more than 500,000 pregnant women and mothers of children being vaccinated received vouchers at health clinics and redeemed them for discounted or free ITNs sold in commercial outlets. 76% of those vouchers have been redeemed.



More nets, ITNs, and LLINs (long-lasting ITNs) are being produced.

- ⇒ NetMark has helped African manufacturers increase the quality and quantity of their production.
- ⇒ It has stimulated the creation of an African Net Manufacturers' Association; and
- ⇒ It has developed a new environmentally-friendly process for making LLINs that has led to the construction of a new factory in Thailand that will produce 5 million LLINs in 2006. This technology was shared with 39 companies in 2005 and will be adopted by some African manufacturers in 2006.
- ⇒ Commercial net sales in NetMark countries between 2002 and 2006 are estimated at over 38 million. Sales of treatment kits through the commercial sector have surpassed 14 million during the same period. In many countries, the commercial sector is the primary supplier of nets used in the home.

Competition has dramatically lowered the costs and increased the availability of ITNs.

- ⇒ ITNs now cost 30% - 75% less than untreated nets did in 2000. This has been driven in large part by

the market competition established by NetMark and the increase in ITN brands now available. The decrease in price ranges from \$1 to \$20 in NetMark countries.

⇒ Before NetMark, few nets were treated with insecticide, which makes them twice as effective at preventing malaria. Now, 65% of nets owned in NetMark countries are treated.

NetMark is a case study in successful public-private partnership.

⇒ Since 1999, NetMark has developed partnerships with 37 African and 9 international commercial partners. These partners have invested more than US\$31 million dollars in country programs and have contributed to the development and support of retail markets. This translates into approximately US\$1 invested by the commercial sector for every dollar invested by USAID. In 2005 NetMark leveraged over US\$3 in commercial investment for every USAID dollar spent.

⇒ NetMark's broad marketing effort encourages other companies to make and sell ITNs. This will ensure a sustainable supply of nets when donors are no longer willing or able to supply free nets for all of sub-Saharan Africa's 689 million people.

⇒ The estimated cost per net delivered through NetMark and its African partners is \$1.75. This cost-effective model results in maximum return on donor investment and minimizes wasted tax dollars.

The Future

Challenges still lie ahead. Public policy must continue to support ITNs. The commercial sector must have a role. Free and subsidized ITN programs must be fully targeted to the poorest to ensure health impact, equity and prevent the undermining of commercial investments in local capacity building. NetMark and partner marketing efforts must continue to build sustainable demand. NetMark's commercial partners

must expand their investment in ITNs to replace the support provided by NetMark. Under these conditions, the ITN market will continue to grow while serving the public health fight against malaria.

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Selected Reading

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Upcoming Events

- **Fifth AMANET Biennial Conference**
Date: 26 February 2007 to 01 March 2007
Location: Zanzibar, Tanzania
<http://amanet-trust.org/fbc/>



The number of children that will die today from malaria would fill 7 jumbo jets.
Worldswimformalaria.com

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www.healthbridge.ca/mosquitonets_e.cfm

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