



OVERCOMING the burden of MALARIA:

Perspectives from the frontline

Malaria remains a major threat to maternal and child health in Africa. Public health experts and officials have long agreed that prevention through wide-scale use of insecticide-treated nets (ITNs) is the most viable way to prevent and control malaria. Yet donors and governments have committed too few resources to increasing ITN use among pregnant women and children. As a result, ITN coverage is still woefully low among the most vulnerable. Clearly, if malaria is to be overcome, this gap between intentions and practice must be closed.

Evidence from a pilot program conducted by Together Against Malaria (TAM TAM) in Kenya suggests that, in areas of high malaria and HIV prevalence, **delivering fully subsidized ITNs through prenatal clinics is a highly cost-effective way to achieve the much needed increase in coverage among pregnant women and children. Such a distribution strategy improves maternal and child health beyond the immediate reduction in the risk of malaria. It gives pregnant women further incentive to go to the prenatal clinic early and so enables them to take advantage of available services, including those aimed at preventing mother-to-child transmission of HIV.** To improve maternal and child health in poor countries, governments and international organizations must allocate more funds towards fully subsidizing the delivery of ITNs through prenatal clinics at a larger scale.

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Together
Against
Malaria

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MALARIA AND MOTHER-TO-CHILD TRANSMISSION OF HIV ARE MAJOR THREATS TO MATERNAL AND CHILD HEALTH IN AFRICA

PREGNANT WOMEN AND CHILDREN ARE THE MOST VULNERABLE TO MALARIA

Pregnant women are the main adult risk group for malaria. Every year, malaria in pregnancy causes 10,000 maternal deaths and accounts for up to 14 percent of all babies born with low birth-weight, the leading risk factor for neonatal and infant mortality. Childhood malaria can lead to epilepsy, and severe neurological disorders. Altogether, malaria causes at least 20 percent of all deaths in children below five years of age in Africa.

MOTHERS WITH HIV ARE AT RISK OF TRANSMITTING THE VIRUS TO THEIR BABIES

Mother-to-child transmission (MTCT) of HIV is the principal source of HIV infection among infants. Over half a million children die of AIDS each year. Prevalence of HIV among pregnant women now exceeds 30 percent in several parts of southern and east Africa. In the absence of any intervention, 25 to 40 percent of HIV positive women will transmit the virus to their babies. Most infants born with HIV die before they reach the age of five.

PREVENTION TOOLS EXIST, BUT THEY REMAIN INACCESSIBLE TO THE MOST VULNERABLE

A FULL ITN SUBSIDY IS NEEDED TO INCREASE ITN COVERAGE AMONG THE MOST VULNERABLE

ITNs are the most viable way to prevent and control malaria. In areas of stable malaria, use of ITNs can reduce child mortality by about 20 percent. However, as of 2002, only 15% of African children below 5 years of age slept under a net, and only 2% under a treated net. In Kenya, less than 7 percent of pregnant women own or sleep under an ITN. This is partly because, at US\$6, the cost of an ITN remains prohibitively high for many of the most vulnerable. Cost-sharing is often proposed as a sustainable way to increase ITN ownership. But, since most of the would-be participants subsist on less than US\$1 a day, it is clear that ITNs would still be too expensive under such programs. In addition to governments earmarking more funds for ITNs, an immediate increase in ITN coverage can be achieved through a full subsidy by NGOs and the international community.

AN INCREASE IN THE NUMBER OF WOMEN WHO KNOW THEIR HIV STATUS IS NEEDED TO REDUCE THE INCIDENCE OF MOTHER-TO-CHILD TRANSMISSION OF HIV.

The risk of MTCT can be reduced by 30 to 50 percent through a short-course of cheap antiretroviral prophylaxis, Nevirapine, for a cost of US\$4 per mother-child pair. Where Nevirapine is unavailable, the risk can still be reduced through safe obstetric practices and adapted infant feeding methods. But, to take advantage of any measure to reduce the risk of MTCT, a woman must first know and accept her own HIV status.

Few African women of child-bearing age know their HIV status. In Kenya, less than 20 percent of women between 20 and 29 years of age have ever been tested for HIV. This is partly due to poor access to voluntary counseling and testing (VCT) services for HIV as well as a dearth of real options, such as antiretroviral therapy, for HIV-positive women. To reduce the incidence of mother-to-child transmission, it is imperative that the number of women who know their HIV status be increased.

TAMTAM IS AN INITIATIVE TOWARDS AN AFRICA FREE FROM MALARIA AND HIV

TAMTAM was founded on the belief that there is an urgent need to achieve both high ITN coverage among pregnant women and high demand for services aimed at preventing mother-to-child transmission (MTCT) of HIV. An immediate increase in ITN coverage could be achieved through a full subsidy, while adequate incentives would increase demand for MTCT prevention. TAMTAM recognized that, because women value ITNs, distributing subsidized ITNs through prenatal clinics could increase uptake of prenatal care, including services aimed at preventing MTCT, such as voluntary counseling and testing.

TAMTAM works in conjunction with ICS Africa, an NGO with an extensive public health and education foothold in Kenya, and the Kenya Ministry of Health. ICS delivers long-lasting ITNs to the participating clinics. The clinics are located in an area of stable malaria transmission and high HIV prevalence. All three clinics are run by the Government of Kenya and participate in the government's Safe Motherhood Initiative. Services offered include intermittent malaria prophylaxis and counseling on how to reduce the risk of MTCT. Women who are HIV-positive are referred to a hospital where they can receive free short courses of antiretroviral prophylaxis. TAMTAM complements the local implementation of Kenya's Safe Motherhood Initiative by fully subsidizing the provision of ITNs to pregnant women. The total cost is \$6 per net delivered.

Since program inception in July 2003, every woman has been given a free ITN upon her first visit to one of the three participating prenatal clinics. In just 18 months, the program has touched the lives of over 6,000 women and their children.

Comparison of data collected at the three program clinics and their counterparts in nearby areas (not yet benefiting from the program) allowed TAMTAM to gauge the overall impact and cost-effectiveness of the program.

KEY FINDINGS:

① PROVIDING FREE ITNs THROUGH PRENATAL CLINICS

INCREASES UPTAKE OF AVAILABLE SERVICES

Providing prenatal clinics with free ITNs for their clients induced a 70 percent increase in enrollment (at least one visit) and a 47 percent increase in participation (at least one revisit). This result suggests that the program was successful both at increasing ITN ownership among pregnant women and at increasing the coverage of the Kenyan Government's Safe Motherhood Initiative.

② PROVIDING FREE ITNs THROUGH PRENATAL CLINICS

INCREASES ITN COVERAGE AMONG THE MOST VULNERABLE

Follow-up by ICS suggests that 100% of women visiting program clinics received the free ITN. Random home visits paid to 213 clients a few months after their first prenatal visit suggest that 85 percent sleep under the ITN with their new-borns every night. This confirms TAMTAM's guiding premise that women value ITNs as a health commodity.

③ PROVIDING FREE ITNs THROUGH PRENATAL CLINICS

INCREASES THE UPTAKE OF VOLUNTARY HIV TESTING

By increasing the number of women who visit a prenatal clinic and so receive information and counseling on mother-to-child transmission of HIV, TAMTAM induced a 40 percent increase in the uptake of HIV testing by women. This result is remarkable since Nevirapine was not yet available at the program clinics and a limited number of the staff had been trained on counseling and prevention services. Contingent upon women taking the appropriate measures to prevent MTCT once they know that they have HIV, the provision of free ITNs through prenatal clinics could contribute to a substantial decrease in the number of babies infected with HIV.

④ PROVIDING ITNs THROUGH PRENATAL CLINICS SAVES

THE LIVES OF CHILDREN AT REMARKABLY LOW COST

Cost-effectiveness analysis suggests that, in areas of stable malaria transmission and very high HIV prevalence, providing free treated nets to pregnant women through prenatal clinics could save the lives of at least 21 babies per 1,000 pregnancies, at a cost of \$279 per life saved. This corresponds to a cost of \$12 per disability adjusted life year (DALY) averted, which is less than 50 percent of the World Bank's threshold of \$25 for cost-effectiveness.

Providing free ITNs through rural prenatal clinics improves maternal and child health at low cost by

- 1) immediately reducing the burden of malaria, and
- 2) increasing the uptake of available prenatal services, including voluntary counseling and testing for HIV

TAMTAM ADVOCATES

MAKING THE DELIVERY OF FREE ITNs THROUGH PRENATAL CLINICS THE MAINSTAY OF MALARIA PREVENTION STRATEGIES

Distributing free ITNs through prenatal clinics achieves an immediate increase in ITN usage among pregnant women and children. Furthermore, by giving women further incentive to seek prenatal care early, it increases the number of women taking advantage of available services, including those for preventing mother-to-child transmission of HIV. The program achieved a 70 percent increase in enrollment and a 47 percent increase in participation in publicly provided prenatal services. A 40 percent increase in women getting tested for HIV could be attributed to the program. Given these results, TAMTAM seeks to scale up its program to cover other areas with an equally high burden of malaria and HIV. TAMTAM also advocates making the delivery of free ITNs through prenatal clinics the mainstay of current and future strategies to prevent malaria among pregnant women and children.

Pledges notwithstanding, precious little has been done to increase ITN ownership among the most vulnerable. Scaling-up this approach would close the gap between intentions and practice and give mothers in poor countries a real chance to overcome the burden of HIV and malaria.



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A copy of the paper presenting detailed results of the evaluation is available.
Email request to Pascaline Dupas at dupas@nyu.edu

**Together
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TAMTAM is a 501(C)(3) charitable organization, so donations are tax-deductible in the United States. A treated mosquito net costs \$US6 (delivery cost included) and can protect a household from malaria for 5 years. Each cent donated to TAMTAM goes towards the purchase and delivery of ITNs, as TAMTAM is entirely run by volunteers.

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