



**MALARIA
A MAJOR CAUSE OF CHILD DEATH
AND POVERTY IN AFRICA**



CONTROLLING THE MALARIA BURDEN IN AFRICA – KEY ACTIONS FOR UNICEF

- Strengthen UNICEF input to evidence-based antenatal services
- Forge partnership with the Expanded Programme on Immunization for joint programming of insecticide-treated nets and intermittent preventive treatment (i.e., treatment of infants with an antimalarial drug linked to immunization delivery, currently under study)
- Provide Roll Back Malaria leadership to expand availability and coverage of insecticide-treated mosquito nets, including forecasting and procurement
- Offer continued UNICEF leadership in the monitoring and evaluation of Roll Back Malaria progress towards the Millennium Development Goals
- Work with Roll Back Malaria partners to coordinate effective country programming support.

Cover photo: Spreading a cloth around her, her baby strapped to her side, a woman in the town of Xai-Xai, Gaza Province, Mozambique, prepares for home after a day's work at the market.

THE BURDEN OF MALARIA

Every year malaria, a parasitic disease spread by the bite of a mosquito, results in 300 million to 500 million clinical cases and causes more than 1 million deaths. Mostly it is young children under the age of five in sub-Saharan Africa who are affected, dying at the rate of nearly 3,000 every day. In Africa, malaria causes approximately 20 per cent of all child deaths. Some children suffer an acute attack of cerebral malaria that quickly leads to coma and death; others succumb to the severe anaemia that follows repeated infections, or to the consequences of low birthweight caused by malaria infection in the mother's womb.

Those children who escape death are not untouched by the disease. Malaria also hinders the development of those who survive. In sub-Saharan Africa, the disease is responsible for 30 per cent to 50 per cent of all outpatient visits to clinics and up to 50 per cent of hospital admissions.

Malaria contributes to increased maternal morbidity and mortality. Malaria during pregnancy is the major cause of

In Africa, malaria sickens and kills many children like 16-month-old Said in the United Republic of Tanzania.

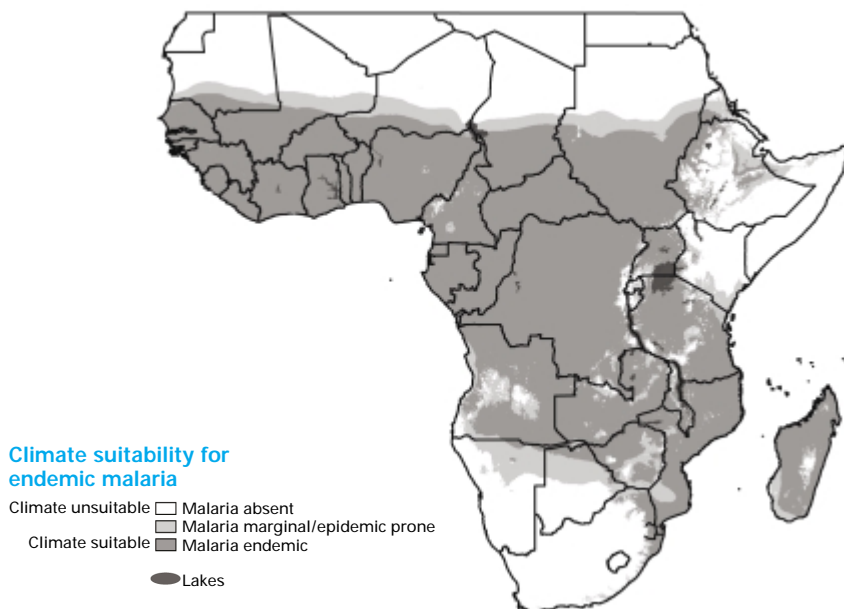


low birthweight in sub-Saharan Africa. The disease also has a crippling effect on the continent's economic growth and perpetuates vicious cycles of poverty. It costs Africa US \$10 billion to \$12 billion every year in lost gross domestic product – even though it could be controlled for a fraction of that sum.

RENEWED URGENCY TO ROLL BACK MALARIA

Africa is now at a critical stage in the struggle against a disease that saps its development. Without intervention, the crisis will deepen. But if national and global commitment and support for the Roll Back Malaria initiative can be put into action on the ground, then the devastation being wrought by malaria can be reversed.

DISTRIBUTION OF ENDEMIC MALARIA



This map does not reflect a position by UNICEF on the status of any country or territory or the delimitation of any frontiers.

Source: MARA/AMRA collaboration (Mapping Malaria Risk in Africa), July 2002.

The Roll Back Malaria Partnership was launched in 1998 by the World Health Organization, the United Nations Children's Fund, the United Nations Development Programme and the World Bank to galvanize global support, mobilize resources and build partnerships to reduce the malaria burden. The partnership is now focusing its efforts at country and community levels to make cost-effective interventions more readily available to those at risk.

Governments and other Roll Back Malaria partners all know what must be done. Goals and targets have been agreed upon by the international community. UNICEF is firmly committed to achieving the Millennium Development Goals of a two-thirds reduction in under-five childhood mortality, and to halt and reverse the incidence of malaria by 2015. This will be done in accordance with the Abuja malaria summit targets for 2005:

- At least 60 per cent of those at risk from malaria, especially young children and pregnant women, to benefit from the best use of insecticide-treated nets.
- At least 60 per cent of those suffering from malaria to have access to effective and affordable treatment within 24 hours.
- At least 60 per cent of pregnant women at risk from malaria to have access to effective preventive treatments.

WE HAVE THE TOOLS AT HAND

We have effective tools at our disposal that can make a difference. Widespread use of insecticide-treated mosquito nets can reduce child mortality by 20 per cent. This mortality reduction can be further improved by ensuring prompt access to effective antimalarial treatment. One new intervention that can bring quick results is the intermittent preventive treatment (IPT) of malaria during pregnancy, which involves giving two

or three doses of an antimalarial drug, sulfadoxine-pyrimethamine (SP), during the second and third trimesters of pregnancy. This will significantly reduce the proportion of low-birthweight infants and will also reduce maternal morbidity. The provision of intermittent preventive treatment for infants, linked to the routine immunization schedule, is now on the horizon.

However, serious challenges still exist. Many child deaths occur at home, where families are without access to life-saving treatments or prevention. And malaria drug resistance is intensifying in many parts of Africa. Household use of insecticide-treated nets is currently low and there are many constraints to regular and timely re-treatment of these nets.

WIDESPREAD USE OF INSECTICIDE-TREATED NETS IS CRITICAL

One of the major breakthroughs of recent years is the realization that mosquito nets treated with insecticide provide a much higher degree of protection against malaria than other nets. As well as stopping their



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In addition to the insecticide-treated net that protects this mother and child, breastmilk provides the infant with sound nutrition and reduces the risk of infection.

bite, the treated nets kill mosquitos. Properly used, insecticide-treated nets can cut malaria transmission by at least 50 per cent and child deaths by 20 per cent.

The use of insecticide-treated nets during pregnancy provides significant protection against maternal anaemia and low birthweight, major contributors to neonatal mortality. In addition, use of these nets benefits the infants who sleep under them with their mothers, by decreasing exposure to malaria infection and subsequent severe disease.

However, by 2002 fewer than 5 per cent of sub-Saharan African children were sleeping under insecticide-treated nets. And fewer than 15 per cent were sleeping under any net at all. At the present rate of progress, Africa will fail to reach the Abuja malaria targets.

The principal problem is the gap between what nets cost and what families can and will pay for them. Research in Africa indicates that treated mosquito nets are too expensive for or are unavailable to the most vulnerable: pregnant women, children under five years of age and the poorest families and communities.

UNICEF'S APPROACH TO INCREASING THE USE OF INSECTICIDE-TREATED NETS

UNICEF supports the distribution of insecticide-treated nets to vulnerable groups through targeted subsidies in order to accelerate net usage in Africa and maximize public health benefits. In doing so:

- The aim is to ensure that all pregnant women, infants and young children have use of insecticide-treated nets.
- Insecticide-treated nets must be made affordable, particularly for the most vulnerable groups.



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In Zambia, a community malaria committee discusses the value of inexpensive, locally available mosquito nets treated with insecticide.

- National health systems should initially strive to achieve high net usage by the most vulnerable groups, while stimulating the private sector to produce enough nets for future needs.

UNICEF lauds the new technology of long-lasting insecticidal nets (LLINs), in which the insecticide is incorporated into the netting at the factory. The net continuously releases insecticide, repelling and killing mosquitoes for four to five years. UNICEF is working with partners to ensure that this technology is deployed as rapidly as possible, and that supplies of LLINs can be increased to meet demand.

Strengthening antenatal care

As a part of effective antenatal care, the provision of insecticide-treated nets can be combined with intermittent preventive treatment in partnership with national reproductive health and Safe Motherhood programmes. This would ensure the provision of an affordable treated mosquito net to each pregnant woman at her first antenatal visit, for use particularly throughout pregnancy and during the lactating period. Newborn infants sleeping with their mothers will also benefit during the vulnerable period of infancy. Since some 70 per cent of women in sub-Saharan Africa receive antenatal care at least once during a pregnancy, a high proportion of women can be reached in this way.

Strengthening infant health

Overall strengthening of health services for young children and collaboration with other key programmes for child survival, such as the Expanded Programme on Immunization, nutrition and the Integrated Management of Childhood Illness, are essential for an effective malaria programme. Infant and child health prevention programmes in malaria-endemic countries emphasize that all infants should sleep under insecticide-treated nets, initially under the mother's mosquito net. Mosquito net distribution can therefore also be linked to routine childhood immunization programmes. UNICEF proposes that the prime caregiver be provided with a treated mosquito net when routine childhood immunization takes place. This would ensure net coverage for every child throughout infancy. In selected instances, distribution of insecticide-treated nets should be linked to immunization campaigns. This has proven effective in Ghana, Zambia and other countries.

To further reduce mortality from malaria, it is essential to provide access to effective treatment within 24 hours of illness and as close to home as possible, especially for young children. To ensure prompt and effective malaria case management, the distribution of

ROLL BACK MALARIA PARTNERSHIPS FOR MOTHER AND CHILD HEALTH

	Antenatal	Child
Roll Back Malaria	Intermittent preventive treatment (IPT) with an antimalarial drug Insecticide-treated mosquito nets (ITNs)	Insecticide-treated mosquito nets
Expanded Programme on Immunization	Tetanus toxoid	Child immunization
Nutrition	Iron and folate	Iron Vitamin A Breastfeeding
Prevention of mother-to-child transmission of HIV	Screening Antiretroviral drugs	Antiretroviral drugs
C-IMCI (Community component, Integrated Management of Childhood Illness)	Community capacity development	Community capacity development Home/Community management of malaria and pneumonia



At a hospital in Rwanda, a nurse demonstrates how to treat a mosquito net with insecticide to prevent malaria.

pre-packaged antimalarial drugs at the time of routine immunization, for later home use, should also be considered.

Community capacity development

In developing countries, the majority of child deaths occur in the home, so services must not focus only on clinics and hospitals. UNICEF's approach includes helping communities recognize and take effective action against malaria. To reduce childhood death and disease, partnerships need to be strengthened between health facilities and communities.

Re-treatment of nets

Until long-lasting insecticidal nets are more widely available, strategies and plans must be in place to ensure that existing nets are re-treated with an effective insecticide on a regular basis. Community-level health

workers, trained volunteers, community groups or village health committees can distribute insecticide kits and ensure proper and timely re-treatment. Re-treatment should be free, if possible, as this has been shown to result in higher re-treatment rates and overall mosquito net usage.

CONCLUSION

UNICEF is committed to supporting countries in scaling up malaria prevention and control programmes. In addition to technical support, this includes the identification of resource gaps, both human and financial, and helping to ensure that these gaps are addressed. UNICEF has already assisted several African countries in making substantial progress to combat malaria. The case studies on the following pages illustrate the importance of strong commitment by governments and communities. These examples chart the way forward for a broader regional effort against the disease.

CASE STUDIES

BENIN

Improving malaria case management

In Benin, as in many other countries in sub-Saharan Africa, some 70 per cent of child deaths are caused by five preventable conditions: malaria, diarrhoea, measles, pneumonia and malnutrition. Malaria is the main cause of hospital visits and deaths of children under five. In 1999, Benin introduced the Integrated Management of Childhood Illness (IMCI) programme and chose Ouémé District as the initial implementation site. IMCI programmes have three components: strengthening the national health system, improving the skills of health workers, and improving family and community practices.

Strategy

The Ministry of Health put in place a Management Committee of IMCI partners, led by the Ministry's Secretary-General. The United States Agency for International Development (USAID) funded many of the technical activities, UNICEF provided most of the logistical support and WHO supported training and capacity-building.

Results

The main achievement was better case management of malaria by health workers, especially in the diagnosis of danger signs and referral of very sick patients to the nearest health facilities. Steps are being taken to improve family and community health practices, including use of insecticide-treated nets. Almost half the population of Benin now benefits from the programme.

Lessons learned

The most important lesson learned is that partnerships between health ministries and WHO, USAID and UNICEF can reduce the cost of IMCI programme implementation. This model can be used to improve community health practices and to strengthen links between communities and their national health systems.

MALAWI

Promoting malaria prevention during pregnancy

Malaria is the leading cause of illness and death in Malawi and the most frequent cause of outpatient consultations and hospital admissions. The majority of the population lives in poverty, with almost 20 per cent of children dying before the age of five. About 30 per cent of these deaths are caused by malaria. Approximately two thirds of women are anaemic during pregnancy and up to 40 per cent of women pregnant for the first or second time have placental malaria at the time of delivery, resulting in an increased incidence of low birthweight and higher neonatal and infant mortality rates.

Strategy

Malawi was the first country in Africa to adopt sulfadoxine-pyrimethamine as the primary therapy for malaria. This change was necessitated by the high level of resistance to chloroquine by the malaria parasites, leading to frequent failure in treatment response. With UNICEF support, Malawi is scaling up the implementation of intermittent preventive treatment to avoid infection with malaria by providing two doses of sulfadoxine-pyrimethamine to all pregnant women during the second and third trimesters. UNICEF is also supporting Malawi's rapid expansion of the use of insecticide-treated nets by pregnant women and young children through distribution of subsidized nets at antenatal and maternal/child health clinics.

Results

A recent household survey in the town of Blantyre showed increased use of intermittent preventive treatment during pregnancy, a one-third reduction in placental malaria infection, a reduction by half in the number of low-birthweight babies and a 35 per cent reduction in the incidence of anaemia among mothers.

The Demographic and Health Survey in 2000 found that 94 per cent of pregnant women made at least one visit to the antenatal clinic, and that 76 per cent of pregnant women received the first dose of intermittent preventive treatment. However, only 37 per cent of women received a full two-dose course, indicating that further work is necessary.

Lessons learned

Several factors have contributed to the widespread use of intermittent preventive treatment in Malawi. They include: development of a national policy on intermittent preventive treatment by the Ministry of Health and Population; working closely with UNICEF, WHO, USAID, Population Services International and other Roll Back Malaria partners on programme implementation; high use of antenatal care by pregnant women; increased access to health information and services by communities; and a ten-week training course for Health Surveillance Assistants, to enable them to serve as health agents in their communities.

MOZAMBIQUE

Community capacity development and malaria control

Malaria is the number one cause of illness in Mozambique, accounting for more than 40 per cent of outpatient consultations, 60 per cent of paediatric inpatients and a third of hospital deaths. Poor, rural communities tend to suffer the effects of malaria more than urban communities because of greater numbers of infective mosquitoes, poor access to health care, inadequate knowledge of how to avoid malaria and its risks, and limited funds for prevention measures such as insecticide-treated nets.

Strategy

In Zambézia and Gaza Provinces, UNICEF supports the implementation of a community capacity development strategy based on local participation. Communities are encouraged to analyse their health situation and make their own choices about appropriate tools to combat malaria. A participatory tool kit has been developed to improve knowledge about malaria, sanitation, hygiene and nutrition. UNICEF works with the Ministry of Health and other partners to ensure that they have access to insecticide-treated nets and appropriate drugs.

Results

Implementation began in two districts of Zambézia Province and has since expanded to 12 districts. By the end of 2003, it will be in action throughout the province, which has a population of 3.5 million. There are now 500 community councils, reaching some 400,000 people. Most councils have chosen insecticide-treated nets as their preferred method of malaria prevention, and more than 200,000 nets have been sold, resulting in an average net coverage rate of 37 per cent for pregnant women and 27 per cent for children. One hundred and twenty five councils have achieved greater than 60 per cent coverage of vulnerable groups.

After major floods in southern Mozambique in 2000, the Ministry of Health, UNICEF and several non-governmental partners distributed 200,000 nets free of charge to affected families. Participatory approaches were used to increase the community's capacity to recognize the symptoms of malaria, identify risk groups and correctly use and re-treat the nets. Over 250,000 people in seven districts participated in activities to enhance community capacity development. A survey conducted 10 months later revealed high levels of knowledge about malaria and excellent net retention, with more than 97 per cent of the nets still in use.

Lessons learned

The programmes in Zambézia and Gaza Provinces demonstrate the benefits of a participatory approach to community capacity development. Among populations where participatory processes were used, 93 per cent cited insecticide-treated nets as a malaria prevention method as compared to only 15 per cent among those who attended theatre presentations where the nets were demonstrated. The use of insecticide-treated nets can be an important component of post-emergency rehabilitation activities when distributed in conjunction with comprehensive participatory education.

UNITED REPUBLIC OF TANZANIA

Preventing child deaths through malaria control

Malaria accounts for more than a quarter of all deaths of children under five in the United Republic of Tanzania. More than 31 million people are at risk of malaria infection, including 5.5 million children under five years of age. Recent research has shown that the use of insecticide-treated nets would effectively prevent malaria and reduce illness and death. In a rural population of 60,000, the use of these nets was linked to a 27 per cent reduction in deaths of children aged from one month to 4 years. Children sleeping regularly under insecticide-treated nets were generally healthier and grew better than those not using nets.

Strategy

During the 1980s, mosquito nets were expensive (\$10 to \$15 each) and net usage was low. The United Republic of Tanzania was the first African country to remove taxes and tariffs on mosquito-netting materials, a major factor in the expansion of the net-production industry. Social marketing of insecticide-treated nets started on a small scale in 1997 and now covers the whole country. Currently three manufacturing companies produce more than 4 million nets per year, enough to supply the local market and create a thriving export trade.

UNICEF supports malaria projects in two rural districts, Kibaha and Kilosa, with financial support from the United Kingdom National Committee for UNICEF. UNICEF works closely with the Ministry of Health to seek ways to reach the most vulnerable members of the population. This has included designing community-participation activities to promote the use of insecticide-treated nets by pregnant women and young children. These activities are ongoing and the results are promising.

Malaria prevention is one of many integrated initiatives in Kibaha and Kilosa and another five 'Early Childhood Development districts'. Village Child Health Days are held monthly, children are immunized and weighed,

their weights are charted and discussed and caretakers are given advice on nutrition. During antenatal care visits, pregnant women receive intermittent preventive treatment to protect them against malaria and protect their unborn children against premature birth and low birthweight. The aim is to provide the most critical and affordable interventions that maximize health benefits for women and young children.

Results

By 2002, the cost of a net in the United Republic of Tanzania had dropped to \$3.50 and net coverage rose to 37 per cent of households: 71 per cent in urban areas and 10 per cent to 57 per cent in rural areas. Through the Global Fund to Fight AIDS, Tuberculosis and Malaria, the country has secured financial support for a national voucher plan to distribute insecticide-treated nets to the most vulnerable groups: young children and pregnant women. The voucher plan will reduce, by about two thirds, the cost of mosquito nets for pregnant women attending antenatal care services. The plan will also provide free insecticide re-treatment kits to caregivers who bring infants for routine immunization services.

Lessons learned

The United Republic of Tanzania has shown that it is possible to scale up the use of insecticide-treated nets within a short period of time through the reduction of taxes and tariffs on netting materials and insecticides; social marketing of nets, especially in rural areas; and the use of vouchers for the most vulnerable groups – children and pregnant women. The use of antenatal clinics and Village Child Health Days has been very effective in promoting maternal and child health.

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