



# Malaria Control and Immunization: a sound partnership with great potential

Malaria control and immunization programmes share a common commitment to improving child and maternal health, primarily through preventive interventions. Currently, WHO and UNICEF are developing more integrated programming approaches, and this statement outlines potential areas for further collaboration.

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## List of abbreviations

- ACSD:** Accelerated Child Survival and Development
- DPT:** diphtheria-pertussis-tetanus
- EPI:** Expanded Programme on Immunization
- GAVI:** Global Alliance for Vaccines and Immunization
- GFATM:** Global Fund to fight AIDS, Tuberculosis and Malaria
- IPT:** intermittent preventive treatment
- ITN:** insecticide-treated net
- RBM:** Roll Back Malaria
- SP:** sulfadoxine-pyrimethamine
- SIA:** supplementary immunization activity
- TT:** tetanus toxoid

## 1. Introduction

Malaria control and immunization programmes, which are high on the public health agenda of many countries, include some of the most cost-effective health interventions known. Both are demanding in terms of human and financial resources, and both seek to achieve the highest possible coverage. High population coverage of immunization and malaria interventions among young children and pregnant women will be necessary for achievement of the Millennium

Development Goals to reduce child mortality and improve maternal health.

At present, immunization programmes – which have a purely preventive focus – are generally better developed and are reaching more children than malaria control programmes, which are more complex and include both curative and preventive components. Although collaboration has been limited to date, there is scope for exploring, developing, and expanding cross-programme synergies within the context of scaling-up national programmes.

## Immunization

At the United Nations Special Session on Children in May 2002, the international community renewed its commitment to the immunization goals of eradicating poliomyelitis, eliminating maternal and neonatal tetanus, reducing measles mortality by half, and, by 2010, ensuring routine immunization coverage of 90% nationally, with at least 80% coverage in every district.

The strategies of the Expanded Programme on Immunization (EPI) for achieving these goals include:

- strengthening the delivery of routine immunization services;
- periodic supplementary immunization activities (SIAs) or mass campaigns; and
- improved surveillance and monitoring.

Support for increasing routine immunization and facilitating the introduction of new vaccines is achieved through bilateral collaboration and a number of established global partnerships for immunization, including the Polio Eradication Initiative, the Measles Initiative, and the Global Alliance for Vaccines and Immunization (GAVI).

## Malaria control

There have been dramatic changes in malaria globally over the past two decades. Chloroquine resistance is spreading and there is good evidence that mortality increased in the 1990s.<sup>1</sup> During the same period, however, a number of scientific breakthroughs demonstrated the efficacy of novel control tools and approaches.

In response to the increasing malaria burden and the opportunities presented by new tools, the Roll Back Malaria (RBM) Partnership was launched in 1998, with the aim of reducing the malaria burden by at least 50% by the year 2010 by the application of evidence-based interventions through strengthened health services. In 2000, African heads of state

resolved to ensure 60% coverage of ITNs by 2005 particularly for pregnant women and children under 5 years (Abuja targets). The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) was established in 2002, giving malaria-endemic countries access to additional external funding for malaria control.

There are coordinated efforts to scale up three core malaria interventions (see p. 4) – insecticide-treated nets (ITNs), intermittent preventive treatment in pregnancy (IPT), and early and effective treatment of clinical cases – the efficacy and cost-effectiveness of which have been well documented in Africa, south of the Sahara. The priority target groups for these interventions are pregnant women and children under 5 years.

### DISEASE BURDEN

#### Malaria

1. One in five of the world's population is at risk of malaria.
2. Each year, there are at least 300 million episodes of malaria in the world.
3. Malaria causes about 1 million deaths per year globally; 90% of these deaths occur in Africa, south of the Sahara, and are mainly of young children.

*Malaria costs Africa US\$ 12 billion every year in lost productivity, reduced household income, and expenditure on treatment. It slows economic growth by 1.3% per year.*

#### Vaccine-preventable diseases

1. One-quarter (33.2 million) of the children born each year are unimmunized and have no protection from common preventable diseases.
2. Each year, 1.6 million children under 5 years – mostly in the world's poorest countries – die from diseases that can be prevented by vaccination.
3. While global immunization coverage (DPT3) is estimated to be 73%, there is great inequality between and within regions/countries. In many countries in Africa, routine immunization coverage rates are below 50%.

## 2. Collaboration between malaria control and immunization

Malaria control and immunization are major preventive health programmes, both seeking to achieve high population coverage. They have several characteristics in common:

- Similar programme components (training, supervision, supply and distribution, commodity forecasting, monitoring and evaluation, communication) for service delivery are aimed at the same target groups – pregnant women and children under 5 years.
- At district and peripheral levels, it is usually the same staff who are involved in delivery of immunization and malaria control services – training and supervision requirements are similar.

- The physical infrastructure is often the same.
- The two programmes have similar logistic requirements, with a supply chain necessary for delivery of services to the most rural and remote areas of the country.
- The software tools, such as maps and population data, are the same.
- The survey and monitoring techniques are similar.

These overlaps and similarities make it imperative to coordinate and seek synergies by working together from the level of the village up to the headquarters of international organizations.

## 3. Potential areas for collaboration

In general, the operational infrastructure of EPI programmes is already well developed in most countries and can therefore act as a vehicle or platform for delivery of malaria interventions. In this way, it is likely that coverage of both malaria and immunization interventions can increase among the target groups. Some examples of joint delivery of services that are now being applied in some settings, or that could be applied, are described

in the table next page. In addition to the provision of commodities described in the table, other potential areas for collaboration include:

- **Social mobilization and education** on malaria at immunization contacts and during “pre-campaign” mobilization by volunteers.
- **Geographical reconnaissance, surveying, and monitoring.** The two programmes use similar

<sup>1</sup> WHO/UNICEF. *The Africa malaria report, 2003*. Geneva, World Health Organization, 2003 (WHO/CDS/MAL/2003.1093).

reconnaissance instruments and population data for planning field operations. Needs and coverage can be assessed in the same household surveys.

• **Training and supervision.** Generally, the tools and methodologies developed by EPI need to be examined for use by malaria control staff. When similar tools have been developed, EPI programme managers could provide valuable assistance with the design of malaria control training. In some countries, it may now be possible to consider the recruitment to national malaria programmes of staff previously trained for polio campaigns.

As countries orient their health systems increasingly towards decentralized planning based

on needs and resources, and carefully planned and coordinated use of human and other resources by the major preventive programmes, strengthening of health services will be increasingly important.

During emergencies, access to essential services is often disrupted. Uninterrupted access to life-saving vaccines for children – as well as malaria prevention and control interventions (particularly ITNs) for all at risk – is a public health priority. It is an important element in a comprehensive response to health needs in refugee camps and camps for internally displaced persons. The continuation of malaria control and immunization services is essential, even in war and other emergency situations.

Malaria intervention	Routine EPI	Supplementary immunization activities (SIAs) or campaigns
1. ITN	Delivery of treated nets directly or through vouchers to pregnant women and/or children under 1 year at time of vaccination (e.g. TT, DPT, and measles).	Delivery of free treated nets, or vouchers, to children under 5 years.
2. Insecticide	Distribution of insecticide for net re-treatment at routine EPI, in areas with at least 30% net coverage.	Net treatment campaigns as part of any (semi-)annual outreach campaign.
3. Pre-packaged antimalarials	Provision of stand-by treatment for home use at immunization contacts (e.g. DPT, measles).	Provision of stand-by treatment to caregivers of children under 5 years.
4. IPT for pregnant women	IPT with sulfadoxine-pyrimethamine (SP) can be provided at the same time as tetanus immunization if this occurs in the second or third trimester (after quickening).	Not applicable

## 4. Practical experiences

In countries such as Viet Nam, where malaria control programmes have specialized staff who are managed by local health services, outreach operations and logistics are often shared between malaria control and EPI. In Cambodia, during the 1990s, as the malaria control programme developed rapidly and was relatively well supported financially, the malaria control outreach operations for ITNs “hosted” not only EPI but also vitamin A distribution and deworming. In most Asian countries, however, the scope for collaboration may be limited to sub-national levels because malaria is usually highly focal, while immunization programmes strive towards full population coverage.

Recently, measles campaigns and ITN outreach campaigns in Ghana and Zambia have been combined.

In several countries, ITNs are now distributed to infants at the time of routine immunization visits. An example is the Accelerated Child Survival and Development Programme (ACSD) in west Africa, supported by UNICEF. One of the defining features of the ACSD is the target of increasing routine EPI coverage and distribution of subsidized ITNs to pregnant women and fully immunized (DPT3/measles) children. Senegal’s ACSD experience, highlighted next page, provides a good example.

In Zambia, in June 2003, a measles campaign was combined with distribution of vitamin A, mebendazole, and ITNs in five districts selected by the national malaria control programme.

The national EPI and malaria control programmes carried out the combined campaign with support from the Red Cross, the Centers for Disease Control and Prevention, and United Nations Foundation, UNICEF and WHO.

In four districts ITNs were distributed at the vaccination sites; in the fifth, ITNs were given to suitable commercial outlets and redeemed by vouchers distributed at the SIA.

Community mobilization worked very well: the availability of ITNs publicized beforehand generated great interest and served as an additional incentive for mothers to bring their children for measles vaccination.

Observations from a community cluster survey showed that ITN coverage in excess of 80% had been achieved for pregnant women, children under 5 years, and households in all five districts; ITN coverage was comparable and uniformly high across economic strata. Despite the fact that ITNs were distributed during the low-transmission season, more than 50% of villagers reported use of the ITNs by children during the previous night.

## RBM strategy includes three core interventions

### Insecticide-treated nets (ITNs)

High ITN coverage and use have been shown to reduce all-cause child mortality by 20%, and to significantly reduce both anaemia in pregnant women and the incidence of low birth weight. High coverage can also protect others living in the same community. Increasing coverage among pregnant women and children under 5 years is therefore a priority for all national malaria control programmes. Nets should be re-treated after three washes or at least once a year. Long-lasting insecticidal nets, which are effective for the lifespan of the nets (4–5 years), have yet to become widely available. Various experiences in ITN distribution have been synthesized in a consensus document, which recognizes that the key to success is complementarity between the public and private sectors. In general, established commercial distribution systems are an efficient means of distribution of nets, and re-treatment should be provided as a free service.<sup>2</sup> However, sustained provision of subsidized or free ITNs to vulnerable groups such as pregnant women and children under 5 years is required for achieving public health benefits.

### Intermittent preventive treatment (IPT) in pregnancy

The current recommendation for IPT is a full curative dose of sulfadoxine–pyrimethamine (SP), two or three times during pregnancy (depending on HIV status in the community), given during the second and the third trimesters. Recent research has shown that intermittent preventive treatment for infants, consisting of a single dose of SP given at 2, 3, and 9 months at the time of routine EPI vaccination, can reduce clinical malaria and anaemia during the first year of life. It is expected that, by 2006, there will be sufficient evidence on efficacy and safety for WHO to formulate a recommendation on this intervention.

### Early and effective treatment of clinical cases

Treatment for malaria illness should start as soon as possible after the onset of symptoms, preferably within 24 hours. Treatment for children generally follows syndromic guidelines based on fever or recent history of fever in areas of stable transmission. Where the access to health services is limited, stand-by (home) treatment for young children is required.

<sup>2</sup> Scaling up insecticide-treated netting programmes in Africa: a strategic framework for coordinated national action. Geneva, World Health Organization, 2002 (WHO/CDS/RBM/2002.43)

## Senegal ACSD programme

The ACSD programme in Senegal distributes subsidized ITNs through routine EPI activities at health centres and to fully vaccinated (DPT3/measles) children. Subsidized ITNs are also distributed during antenatal care visits.

The national government has established a standardized subsidized price for ITNs and has established a mechanism whereby payment for one ITN can be made in installments, at each of the five routine EPI visits.

Distribution of ITNs is monitored monthly at the health-centre and community levels. Results after 18 months of implementation indicate significant increases for both measles vaccination (from 34% to 64%) and ITN coverage (from 3% to 45%). Among pregnant women there has been a significant increase in the numbers of women attending at least 3 antenatal visits, and ITN coverage in this group has increased from 3% to 64%.

The key challenge is to ensure that the distribution of ITNs is well timed relative to the malaria season, when demand is greater.

## 5. The next steps

- UNICEF and WHO will work together with governments and partners to consolidate experiences and lessons learned on combined services and reciprocal benefits of collaboration. This will include evaluation of the recent measles/ITN campaigns and routine EPI/ITN delivery.
- Based on such experiences, a framework for action will be formulated for discussion with national programmes and partners.
- UNICEF and WHO will work with national programmes to promote collaboration and shared service delivery in identified countries.
- UNICEF and WHO departments dealing with malaria and immunization will assess EPI training materials, their use and relevance in relation to each other's programme.
- Future training packages for malaria control, especially those intended for management at district level, should include relevant EPI concepts and methodologies, and tools for micro-planning for combined service delivery.
- UNICEF and WHO will request financial and planning institutions to consider this initiative for inclusion in health sector planning activities at the country level.