UNHCR's Strategic Plan for Malaria Control

2008 - 2012

UNHCR
The UN Refugee Agency

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List of Acronyms

ACT	Artemisinin-based Combination Therapy
ANC	Antenatal Care
APR	Annual Protection Report
DOT	Directly Observed Therapy
GFATM	Global Fund to Fight AIDS Tuberculosis and Malaria
GMP	Global Malaria Programme
HIS	Health Information System
HQ	Headquarters
IDP	Internally displaced person
IEC	Information, Education, and Communication
IM	Intramuscular
IP	Implementing Partner
IPTp	Intermittent Preventive Treatment in pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
IV	Intravenous
LBW	Low Birth Weight
LLIN	Long Lasting Insecticidal Net
MDG	Millennium Development Goal
MoH	Ministry of Health
MSRP	Management Systems Renewal Project
NGO	Non-Governmental Organization
OP	Operational Partner
P. falciparum	*Plasmodium falciparum*
PoCs	Persons of Concern
RDT	Rapid Diagnostic Test
RBM	Roll Back Malaria
S&I	Standards and Indicators
SP	Sulfadoxine-pyrimethamine
SPR	Slide Positivity Rate
TFC	Therapeutic Feeding Centre
UNICEF	United Nations Children's Fund
UNDP	United Nations Development Program
UNHCR	United Nations High Commissioner for Refugees
WHO	World Health Organisation

EXECUTIVE SUMMARY

Malaria continues to be the number one cause of illness and death among many refugee populations. Control strategies for malaria among refugees and other displaced populations have not kept apace of recent global changes.

The context of malaria control has changed over the past decade. There is now near global resistance to low cost antimalarial drugs and the AIDS epidemic is expanding. At the same time, new tools for effective treatment and prevention have been developed: rapid diagnostic tests, quick-acting antimalarial drugs, long-lasting insecticidal nets, and intermittent preventive treatment in pregnancy. A global movement for improved malaria control has emerged.

This document outlines the strategic objectives for the United Nations High Commissioner for Refugees (UNHCR) to bring programmes for refugees and other displaced populations in line with global standards as part of UNHCR's human rights obligations to protect refugees from illness and death. The Strategic Plan aims to guide operations in camp, urban and other non-camp settings as well as in local integration and returnee situations, during the period of 2008-2012 (see 2008-12 guiding principles). It is built upon lessons learned from the previous Malaria Strategic Plan (2005-2007).

OVERALL STRATEGIC OBJECTIVE:

To support and promote malaria policies and control programmes to reduce morbidity and mortality and to enhance the quality of life among refugees, Internally Displaced Persons (IDPs), returnees and other Persons of Concern (PoCs) to UNHCR.

MALARIA CONTROL STRATEGIC OBJECTIVES FOR UNHCR:

1. **Protection:** To protect the rights of UNHCR's PoCs with specific reference to malaria.

2. **Coordination and Integration:** To effectively coordinate, advocate for and integrate malaria control policies and programmes in a multi-sectoral approach for PoCs by strengthening and expanding strategic partnerships with key stakeholders.

3. **Access to Early Diagnosis, Prompt and Effective Treatment, and Prevention:** To ensure that UNHCR's PoCs living in the malaria endemic areas have access to early diagnosis, prompt and effective treatment, and prevention, according to international standards.

4. **Durable Solutions:** To develop and incorporate malaria control strategies and interventions into policies and programmes for durable solutions.

5. **Capacity Building:** To build and strengthen specific malaria-related knowledge and skills as well as to provide necessary technical tools to PoCs and those staff working with them.

6. **Assessments, Surveillance, Monitoring and Evaluation and Operational Research:** To regularly monitor and report on the status of malaria within PoCs to inform programmatic planning and implementation in a timely manner; to evaluate programme performance and achievements using a results-based management approach; and to develop and carry out operational research on new approaches and technologies in malaria control.

INTRODUCTION

Malaria remains an important cause of illness and death among refugee and displaced populations. The majority of today's refugees live in malaria endemic areas. This situation has not been reversed during the last years, on the contrary, some new factors as climate change, natural disasters and population displacement have triggered changes in mosquito behaviours and malaria epidemiological profiles in different countries. Of the almost 33 million PoCs to UNHCR in 2008, almost two-thirds (63%) live in malaria endemic areas.

Many factors may promote vulnerability to malaria illness and death among refugees. Pregnant women and young children are particularly at risk of severe illness and death, women of child bearing age and children make up the majority of the population in many refugee situations. Refugee camps are often sited on marginal lands that promote breeding sites for malaria vectors. Refugees may be malnourished, particularly in the emergency phase. Displacement may take refugees through or to areas of higher malaria endemicity than their place of origin. Control programmes may have broken down (associated with the conflict that caused population flight) or never been implemented.

A significant change in approach to malaria control, particularly in Africa, has taken place over the last decade. Funds for malaria control have become available on a scale not seen since the days of the eradication campaign 50 years ago. These new resources are being used largely to support a supply of artemisin-based combination therapy (ACT) to replace ineffective chloroquine and sulphadoxine pyrimethamine for first line treatment of malaria and for the provision of long lasting, insecticide treated bednets (LLINs).

Intermittent preventive treatment in pregnancy (IPTp) has been shown to be of significant benefit in reducing potential malaria-related pregnancy complications in moderate to high transmission settings, particularly in the camps where access of refugees to health services is good. The AIDS epidemic interacts with malaria; HIV infection increases susceptibility to malaria and has an adverse effect during pregnancy while malaria may increase the viral load of HIV infections.

The globally-accepted 'best practices' for malaria control incorporate a mixture of the SPHERE[1] common standards for intervention and World Health Organisation (WHO)-endorsed malaria specific interventions;[2] these are reflected in the eight key strategic objectives and described in detail in Table 1.

This UNHCR Strategic Plan for Malaria Control documents the vision, strategic objectives, and main strategies of UNHCR to fully integrate effective malaria control into UNHCR's overall mandate of protection of refugees and other PoCs. It also provides core indicators by which progress against these strategic objectives will be measured to ensure that UNHCR meets internal standards and complies with international standards.

1 Sphere Project, Humanitarian Charter and Minimum Standards in Disaster Response. The Sphere Project, Geneva, 2004.

2 World Health Organisation (2005). Malaria control in complex emergencies: an inter-agency field handbook. Geneva: World Health Organisation.

The foundation for the UNHCR Strategic Plan for Malaria Control 2008 – 2012 was laid by:

- UNHCR's Strategic Plan for Malaria Control 2005 – 2007.
- Global Malaria Programme. Insecticide treated malaria nets: a position statement. Geneva: World Health Organisation, 2007.
- World Health Organisation. WHO guidelines for the treatment of malaria. Geneva: World Health Organisation, 2006.
- World Health Organisation. Malaria control in complex emergencies: an inter-agency field handbook. Geneva: World Health Organisation, 2005.
- Roll Back Malaria. Strategic orientation paper on prevention and control of malaria. Geneva: World Health Organisation, 2005.

Malaria is also explicitly highlighted in UNHCR's Global Strategic Objectives for 2008-2009 (See Box 1).[3]

BOX 1: Malaria in UNHCR's Global Strategic Objectives

Global Strategic Objective 3 - Realizing the social and economic well-being of persons of concern with priority given to:

3.1. Reducing malnutrition, and major risks to the health of populations of concern, notably malaria, HIV/AIDS and inadequate reproductive health services.

Performance Target

3.1.4. The percentage of populations of concern to UNHCR in malaria endemic areas with access to artemisinin-based combination therapy (ACT) with out running out of stocks for more than one week in the previous 12 months is increased.

3.1.5. The percentage of refugee camps in malaria endemic areas with access to prevention measures (insecticide treated nets/spraying) and culturally appropriate information, education and communication (IEC) materials is increased.

Global Strategic Objective 4 - Responding to emergencies in a timely and effective manner, with priority given to:

4.2. Meeting the needs of women, children and groups with specific needs in emergency situations.

Performance Target:

4.2.2. Emergency protection and assistance interventions in the first three months of an emergency increasingly respond to age, gender and diversity considerations including specific interventions for women, children and groups with special needs.

3 UNHCR, "Biennial Programme Budget 2008-2009 of the Office of the United Nations High Commissioner for Refugees." A/AC.96/1040, 12 September 2007, Fifty-eighth session.

A variety of actors will be involved in implementing activities to achieve the strategic objectives. UNHCR will assume primary responsibility for monitoring progress against objectives and will draw up programme plans detailing roles and responsibilities of partners under the coordination of respective Ministries of Health, where appropriate (often with the support of WHO). Technical support will be provided by a variety of sources including the Centers for Disease Control and Prevention, various international organizations, WHO, UNICEF and other UN sister agencies, and academic institutions.

An interim assessment of all indicators and targets in this plan will be undertaken after 2009.

GOALS AND OBJECTIVES

OVERALL STRATEGIC OBJECTIVE:

To support and promote malaria policies and control programmes to reduce morbidity and mortality and to enhance the quality of life among refugees, IDPs, returnees and other PoCs to UNHCR.

MALARIA CONTROL STRATEGIC OBJECTIVES FOR UNHCR:

1. **Protection:** To protect the rights of UNHCR's PoCs with specific reference to malaria.
2. **Coordination and Integration:** To effectively coordinate, advocate for and integrate malaria control policies and programmes in a multi-sectoral approach for PoCs by strengthening and expanding strategic partnerships with key stakeholders.
3. **Access to Early Diagnosis, Prompt and Effective Treatment, and Prevention:** To ensure that UNHCR's PoCs living in the malaria endemic areas have access to early diagnosis, prompt and effective treatment, and prevention according to international standards.
4. **Durable Solutions:** To develop and incorporate malaria control strategies and interventions into policies and programmes for durable solutions.
5. **Capacity Building:** To build and strengthen specific malaria-related knowledge and skills as well as to provide necessary technical tools to PoCs and those staff working with them.
6. **Assessments, Surveillance, Monitoring and Evaluation and Operational Research:** To regularly monitor and report on the status of malaria within PoCs to inform programmatic planning and implementation in a timely manner; to evaluate programme performance and achievements using a results-based management approach; and to develop and carry out operational research on new approaches and technologies in malaria control.

STRATEGIES AND INDICATORS OF ACHIEVEMENT

UNHCR will monitor its progress against these strategic objectives over the 2008-2012 period through a rigorous monitoring and evaluation system at regional and country levels. The data will be aggregated and reported regularly at global, regional and country level. The following core of **37 indicators** will be tracked as a measure of progress against the strategic objectives. For each of these indicators many others could be suggested, particularly programme performance monitoring indicators, which are not detailed here but many of which will be collected and used at country level. Realisation of these strategic objectives will require a certain level of accountability at various levels of management. This accountability will be most important at the country and field levels through the processes of the programme planning cycle and ongoing reporting.

Table 1 summarises the strategies and indicators of achievement. It provides explicit definitions for and essential information on how the indicators will be measured at the global, regional and country operational levels.

Table 2 provides summaries of how the indicators of achievement will be reported. This includes information on targets, periodicity, applicable strategic objectives, and sources of measurement.

UNHCR will obtain data on malaria control from the following main sources:

1. UNHCR's Health Information System (HIS).
2. UNHCR's Standards and Indicators (S&Is).
3. UNHCR's Annual Protection Reports (APRs).
4. UNHCR's Global Strategic Objectives.
5. Joint Assessment Missions conducted with other UN agencies and Non-Governmental Organisations (NGOs).
6. Population-based surveys.
7. UNHCR's Financial Systems using Management Systems Renewal Project (MSRP).

Table 1. Key Strategies and Indicators of Achievement

STRATEGIC OBJECTIVE 1: PROTECTION	To protect the rights of UNHCR's PoCs with specific reference to malaria.
Key Strategies	**Indicators of Achievement**
(1.1) Provide minimal internationally accepted malaria control services to HCR's PoCs during an emergency.	**(1.1.1)** Crude and Under 5 mortality, all causes (by sex). **(1.1.2)** Proportional mortality due to malaria (Crude, Under 5). **(1.1.3)** Proportional morbidity due to malaria (Crude, Under 5). **(1.1.4)** Malaria incidence (suspected and confirmed) (Crude, Under 5).
(1.2) Provide appropriate protection against malaria for vulnerable and at risk populations using globally accepted preventive measures.	**(1.2.1)** % of women receiving LLIN/ITN[4] during pregnancy in emergency phase. **(1.2.2)** % of households with at least one LLIN/ITN in stable phase.
Indicators **1.5.1** and **1.5.2** from HIV Strategic Plan also apply.	

4 Given that 2008/09 is a transitional period for the type of nets that will be distributed, the indicator with LLIN/Insecticide Treated Nets (ITN) should match type of nets that have been distributed. In some cases, you may need separate indicators for both LLINs and ITNs. It would be expected that after 2009, all operations would have made the switch to using only LLINs exclusively.

Table 1. Key Strategies and Indicators of Achievement (cont.)

STRATEGIC OBJECTIVE 2: COORDINATION AND INTEGRATION	To effectively coordinate, advocate for and integrate malaria control policies and programmes in a multi-sectoral approach for PoCs by strengthening and expanding strategic partnerships with key stakeholders.
Key Strategies	**Indicators of Achievement**
(2.1) Ensure that malaria control policies and programmes for IDPs are coordinated and integrated within humanitarian reform process.	**(2.1.1)** % of HCR country offices that are consistently participating in health cluster meetings among those countries that have been "clusterized".[5]
(2.2) Advocate to ensure inclusion of refugees and IDPs in National Malaria Control Plans.	**(2.2.1)** % of countries with ≥10,000 refugees that have explicitly included refugees in National Malaria Control Plans among those countries that will update their plans between 2008–2012. **(2.2.2)** % of countries with ≥10,000 IDPs that have explicitly included IDPs in National Malaria Control Plans among those countries that will update their plans between 2008–2012.
(2.3) Strengthen HCR health coordination capacity and supervision with relevant stakeholders (e.g. host country authorities, IPs and OPs, and refugee representatives).	**(2.3.1)** Number of HCR Public Health coordinators. **(2.3.2)** Number of health coordination meetings held per year, including ad hoc malaria task force meetings during malaria epidemics.
(2.4) Participate as member in Network for Malaria Control in Emergencies, coordinated by WHO.	**(2.4.1)** % of network conference calls/meeting in which UNHCR headquarters (or appointed representative) participated during past year.
(2.5) Ensure sufficient resources provided to supporting HCR's malaria control activities.	**(2.5.1)** Amount of resources spent by HCR for malaria control (USD/person/yr).
(2.6) Advocate for the inclusion of HCR's PoCs in donor proposals.	Number of countries with HCR's PoCs (≥10,000 persons) benefiting from additional malaria funding sources: **(2.6.1)** US Presidents Malaria Initiative. **(2.6.2)** Global Fund for AIDS, Tuberculosis and Malaria. See also **2.5.1**.
(2.7) Ensure that PoCs are included into participatory assessments and age, gender and diversity analysis as part of HCR's operations management cycle.	**(2.7.1)** % of countries that have conducted participatory assessments as part of the operations management cycle.

5 A cluster is a group of agencies, organisations and/or institutions unified by their particular mandates, working towards common objectives. The purpose of the clusters is to promote effective and predictable outcomes in a timely manner while also improving accountability and leadership. Globally, 11 clusters have been identified, each with a lead agency, covering areas such as, protection, camp coordination and camp management, education, shelter, health and water and sanitation.

Table 1. Key Strategies and Indicators of Achievement (cont.)

STRATEGIC OBJECTIVE 3: ACCESS TO EARLY DIAGNOSIS, PROMPT AND EFFECTIVE TREATMENT, AND PREVENTION	To ensure that UNHCR's PoCs living in the malaria endemic areas have access to early diagnosis, prompt and effective treatment, and prevention according to international standards.
Key Strategies	**Indicators of Achievement**
(3.1) Provide free or highly subsidized diagnosis, treatment, and prevention according to setting.	**(3.1.1)** % of malaria cases confirmed parasitologically.[6] See also **1.1.1-1.1.4**.
(3.2) Support programmes to meet laboratory diagnostic standards set in national policies.	**(3.2.1)** % of camps/programmes meeting national laboratory standards.
(3.3) Ensure provision of appropriate ACTs in areas where *P. falciparum* malaria predominates; in areas in which other species predominate, use internationally accepted guidelines.	**(3.3.1)** % of camps/programmes using ACT as 1st line treatment for uncomplicated malaria by country. **(3.3.2)** % of health facilities with no reported stock-outs of ACTs in emergency phase.[7] **(3.3.3)** % of health facilities with no reported stock out of ACT during the post-emergency/stable phase.[8] **(3.3.4)** % of camps/programmes where community-based malaria management is being implemented.
(3.4) Provide LLIN with priority to most vulnerable populations in emergency phase and expand to full coverage in stable situations.	**(3.4.1)** % households that have >1 distributed LLIN/ITN six months after net distribution. **(3.4.2)** % inpatient facilities that have LLIN/ITN for each bed. See also **1.3.1** and **1.3.2**.
(3.5) Employ Indoor residual spraying (IRS) when appropriate.	**(3.5.1)** % coverage of suitable dwellings when IRS was utilised to control or prevent epidemics.
(3.6) Provide IPTp to all pregnant women at antenatal care (ANC).	**(3.6.1)** % of pregnant women presenting at ANC who receive ≥2 doses of IPTp, when appropriate.
(3.7) Create epidemic preparedness plans that include malaria control activities when appropriate .	**(3.7.1)** % of camps/programmes that have epidemic preparedness plans including malaria when appropriate.
Indicator **3.2.1** from HIV Strategic Plan also applies. Indicator **3.4.6** from Reproductive Health Strategic Plan also applies. Indicators **3.2.4** and **3.2.5** from Nutrition and Food Security Plan also apply. Indicator **3.5.2** from WatSan Strategic Plan also applies.	

6 WHO/GMP formulation is: -Malaria attributed deaths per 100,000 population per year
- Reported malaria cases per 1000 population per year
- Severe malaria cases per 100,000 population per year
- % of malaria cases confirmed parasitologically

7 Stockout is defined as no interruption of supply of ACTs for > 1 week at any time during the last month in the emergency phase.

8 Stockout is defined as no interruption of supply for ACTs for > 1 week during the past year in the post-emergency/stable phase.

Table 1. Key Strategies and Indicators of Achievement (cont.)

STRATEGIC OBJECTIVE 4: DURABLE SOLUTIONS	To develop and incorporate malaria control strategies and interventions into policies and programmes for durable solutions.
Key Strategies	**Indicators of Achievement**
(4.1) Advocate for and establish local integration and repatriation policies and programmes that include appropriate prevention and treatment interventions for malaria.	**(4.1.1)** % of operations where refugees are provided with appropriate returnee packages defined here as ≥1 LLIN/ITN per household and instructions on use, where appropriate. **(4.1.2)** % of operations where malaria control plans have been designed and integrated with health plans in exit strategies (integration areas or areas of return), where appropriate. **(4.1.3)** % of programmes at point of return that offer malaria control services, where appropriate.
(4.2) Coordinate and share malaria control information to governments, UN agencies and other humanitarian organisations during repatriation.	**(4.2.1)** % of countries undertaking major repatriation operations that collect and share malaria control information about refugees and other PoCs in areas of return with government and organisations involved in malaria control policies and programmes.

STRATEGIC OBJECTIVE 5: CAPACITY BUILDING	To build and strengthen specific malaria-related knowledge and skills as well as to provide necessary technical tools to PoCs and those staff working with them.
Key Strategies	**Indicators of Achievement**
(5.1) Train HCR and partner health staff on malaria protocols, prevention and treatment.	**(5.1.1)** Number and % of HCR and health partner staff trained on new treatment and screening protocols for uncomplicated malaria, effective prevention of malaria, and clinical management of severe malaria. See also **2.3.2, 2.7.1, 3.7.1**.
(5.2) Provide malaria-focused community education programmes to refugees and other PoCs.	**(5.2.1)** % countries reporting malaria training for HCR's PoCs. See also **2.7.1, 4.1.1**.

Table 1. Key Strategies and Indicators of Achievement (cont.)

STRATEGIC OBJECTIVE 6: ASSESSMENTS, SURVEILLANCE, MONITORING AND EVALUATION, OPERATIONAL RESEARCH	To regularly monitor and report on the status of malaria within PoCs to inform programmatic planning and implementation in a timely manner; To evaluate programme performance and achievements using a results-based management approach; and To develop and carry out operational research on new approaches and technologies in malaria control.
Key Strategies	**Indicators of Achievement**
(6.1) Conduct malaria situation assessments using a standardised checklist.[9]	**(6.1.1)** % of malaria assessments undertaken in endemic settings during initial emergency phase.
(6.2) Collect, analyse, and respond to essential malaria-related data on a routine basis using standard case definitions.	**(6.2.1)** % refugee operation with functioning HIS, as defined by monthly reporting to HCR.
(6.3) Evaluate malaria control programmes on a routine basis.	**(6.3.1)** % of camps/programmes that have evaluated their coverage and quality of malaria control services every 2 yrs in stable settings.
(6.4) Conduct operational research as indicated to guide programme implementation (e.g. antimalarial drug efficacy, new insecticide treated materials, adherence and acceptability of ACT) or to address identified programmatic problems.	**(6.4.1)** Number of programmes that have conducted operational research defined as any investigation that is not routine and undertaken to inform programmatic planning or to address identified programmatic problems.

9 Please refer to Technical Guidelines for Malaria, pp. 29, for a sample standardised assessment checklist to use for these assessments.

Table 2: Summary of Indicators of Achievement

INDICATORS OF ACHIEVEMENT	Target[10]	Periodicity	Strategic Objectives	Source of Measurement	Setting: Camp, Non-camp[11]
(1.1.1) Crude and Under 5 mortality, all causes (by sex).	< 1 death/1000/mos < 2 deaths/1000/mos	Monthly, Annually	1,3	HIS	Camp
(1.1.2) Proportional mortality due to malaria (Crude, Under 5).	Variable; based on endemicity	Monthly, Annually	1,3	HIS	Camp
(1.1.3) Proportional morbidity due to malaria (Crude, Under 5).	Variable; based on endemicity	Monthly, Annually	1,3	HIS	Camp Non-camp
(1.1.4) Malaria incidence (suspected and confirmed) (Crude, Under 5).	Variable; based on endemicity	Monthly, Annually	1,3	HIS	Camp
(1.2.1) % of women receiving LLIN/ITN[12] during pregnancy in emergency phase.	>75%	Monthly, Annually	1,3	HIS	Camp
(1.2.2) % of households with at least one LLIN/ITN in stable phase.	>75%	Annually	1,3	Country Offices Malaria survey	Camp
(2.1.1) % of HCR country offices that are consistently participating in health cluster meetings among those countries that have been "clusterized".[13]	>75%	Annually	2	Country Offices	Camp Non-camp
(2.2.1) % of countries with ≥10,000 refugees that have explicitly included refugees in National Malaria Control Plans among those countries that will update their plans between 2008–2012.	>80%	Biannually	2	National Malaria Control Plans	Camp Non-camp
(2.2.2) % of countries with ≥10,000 IDPs that have explicitly included IDPs in National Malaria Control Plans among those countries that will update their plans between 2008–2012.	>80%	Biannually	2	National Malaria Control Plans	Camp Non-camp
(2.3.1) Number of HCR Public Health coordinators country and regional levels.	Variable	Annually	2	Country Offices Regional Offices HQ	Camp Non-camp
(2.3.2) Number of health coordination meetings held per year, including ad hoc malaria task force meetings during malaria epidemics.	12	Annually	2,5	Country Offices Regional Offices HQ	Camp Non-camp
(2.4.1) % of network conference calls/meeting in which HCR HQ (or appointed representative) participated.	>75%	Annually	2	Notes for record of network calls	Camp Non-camp

10 Target refers to the level that UNHCR intends to achieve by the end of 2012. It is based on the current situation and what HCR believes it is feasible to attain.

11 Refers to setting where indicator will ***primarily*** be measured. However, this may vary according to context. All population-based surveys could be undertaken in camp or non-camp settings; however, at this point they are primarily done in camp settings. This may change over time.

12 Given that 2008/09 is a transitional period for the type of nets that will be distributed, the indicator with LLIN/ITN should match type of nets that have been distributed. In some cases, you may need separate indicators for both LLINs and ITNs. It would be expected that after 2009, all operations would have made the switch to using only LLINs exclusively.

13 A cluster is a group of agencies, organisations and/or institutions unified by their particular mandates, working towards common objectives. The purpose of the clusters is to promote effective and predictable outcomes in a timely manner, while also improving accountability and leadership. Globally, 11 clusters have been identified, each with a lead agency, covering areas such as, education, shelter, telecommunications, food aid, health and sanitation.

Table 2: Summary of Indicators of Achievement (cont.)

INDICATORS OF ACHIEVEMENT	Target[8]	Periodicity	Strategic Objectives	Source of Measurement	Setting: Camp, Non-camp[9]
(2.5.1) Amount of resources spent by HCR for malaria control (USD/person/yr).	Variable	Annually	2	MRSP	Camp Non-camp
(2.6.1) Number of countries with HCR's PoCs (≥10,000 persons) benefiting from additional malaria funding sources from US Presidents Malaria Initiative.	Variable	Annually	2	MRSP HQ	Camp Non-camp
(2.6.2) Number of countries with HCR's PoCs (≥10,000 persons) benefiting from additional malaria funding sources from the Global Fund for AIDS, Tuberculosis and Malaria.	Variable	Annually	2	MRSP HQ	Camp Non-camp
(2.7.1) % of countries that have conducted participatory assessments as part of the operations management cycle.	>75%	Annually	2,5	Country Offices	Camp Non-camp
(3.1.1) Proportion of malaria cases confirmed parasitologically.	Variable	Monthly, Annually	1,3	HIS	Camp
(3.2.1) % of camps/programmes meeting national laboratory standards.	100%	Annually	3	Country Offices	Camp Non-camp
(3.3.1) % of camps/programmes using ACT as 1st line treatment for uncomplicated malaria by country.	100%	Annually	3	Country Offices Joint Missions	Camp Non-camp
(3.3.2) % of health facilities with no reported stock-outs of ACTs in emergency phase.	>80%	Annually	3	Country Offices Joint Missions	Camp Non-camp
(3.3.3) % of health facilities with no reported stock outs during the post-emergency/stable phase.	0%	Annually	3	Country Offices Joint Missions	Camp Non-camp
(3.3.4) % of camps/programmes where community-based malaria management is being implemented.	>80%	Annually	3	Country Offices Joint Missions	Camp
(3.4.1) % households that have ≥1 distributed LLIN/ITN six months after net distribution.	>50%	Annually	1,3	Country Offices LLIN survey	Camp
(3.4.2) % inpatient facilities that have for each bed.	100%	Annually	1,3	Country Offices LLIN survey	Camp
(3.5.1) % coverage of suitable dwellings when IRS was utilised to control or prevent epidemics.	>60%	Annually	3	Country Offices LLIN survey	Camp
(3.6.1) % of pregnant women presenting at ANC who receive ≥2 doses of IPTp, when appropriate.	>80%	Monthly, Annually	3	HIS	Camp
(3.7.1) % of camps/programmes that have epidemic preparedness plans including malaria when appropriate.	>80%	Monthly, Annually	3,5	Country Offices	Camp

Table 2: Summary of Indicators of Achievement (cont.)

INDICATORS OF ACHIEVEMENT	Target[8]	Periodicity	Strategic Objectives	Source of Measurement	Setting: Camp, Non-camp[9]
(4.1.1) % of operations where refugees are provided with appropriate returnee packages defined here as ≥1 LLIN/ITN per household and instructions on use, where appropriate.	100%	Annually	3,5	Country Offices	Camp Non-camp
(4.1.2) % of operations where malaria control plans have been designed and integrated with health plans in exit strategies (integration areas or areas of return), where appropriate.	100%	Annually	4	Country Offices	Camp Non-camp
(4.1.3) % of programmes at point of return that offer malaria control services, where appropriate.	100%	Annually	4	Country Offices	Camp Non-camp
(4.2.1) % of countries undertaking major repatriation operations that collect and share malaria control information about refugees and other PoCs in areas of return with government and organisations involved in malaria control policies and programmes.	Variable	Annually	4	Country Offices	Camp Non-camp
(5.1.1) Number and % of HCR and health partner staff trained on new treatment and screening protocols for uncomplicated malaria, effective prevention of malaria, and clinical management of severe malaria.	>75%	Annually	2,3,5	Country Offices	Camp
(5.2.1) % countries reporting malaria training for HCR's PoCs.	>80%	Annually	2,4,5	Country Offices	Camp Non-camp
(6.1.1) % of malaria assessments undertaken in endemic settings during initial emergency phase.	100%	Annually	6	Country Offices	Camp Non-camp
(6.2.1) % refugee operation with functioning HIS, as defined by monthly reporting to HCR.	100%	Monthly, Annually	6	HIS	Primarily camp with emphasis to include non camp
(6.3.1) % of camps/programmes that have evaluated their coverage and quality of malaria control services every 2 yrs in stable settings.	100%	Biannually	6	Country Offices HQ	Camp
(6.4.1) Number of programmes that have conducted operational research defined as any investigation that is not routine and undertaken to inform programmatic planning or to address identified programmatic problems.	Variable	Annually	6	Country Offices Regional Offices HQ	Camp Non-camp

ANNEX 1: TECHNICAL GUIDELINES
UNHCR STRATEGIC PLAN ON MALARIA CONTROL

The purpose of these guidelines is to provide additional technical information on malaria control as it pertains to the operations of UNHCR. This document is not meant to replace more comprehensive malaria publications but to provide rationale, background, and reference information for the objectives and indicators that are specifically introduced in the Strategic Plan. These guidelines include the most recent and relevant recommendations and positions of various scientific authorities. This information may be applicable to many levels of expertise and personnel including country and field office leadership, program officers, and health staff. The guidelines primarily discuss topics such as diagnosis and treatment, prevention, community participation, and monitoring and evaluation, with careful consideration for the special populations for whom UNHCR provides protection and assistance and advocacy. All information and references should be considered in light of the constantly dynamic and emerging scientific information related to the world of malaria control.

DIAGNOSIS AND TREATMENT

Of the eight United Nations' Millennium Development Goals[I] to be achieved by 2015, the sixth pertains to malaria: "Combat HIV/AIDS, malaria, and other diseases." The World Health Organisation (WHO) and Global Malaria Programme (GMP) aim to implement three primary interventions for effective malaria control order to meet the sixth goal:

- Diagnosis of malaria cases and treatment with effective medicines;
- Distribution of insecticide-treated nets (ITNs), more specifically long-lasting insecticidal nets (LLINs), to achieve full coverage of populations at risk of malaria; and
- Indoor residual spraying (IRS) to prevent/contain an outbreak and as for LLINs to reduce malaria transmission.

Rapid Diagnostic Tests (RDTs) and Microscopy

Diagnosis and treatment should be free of charge to the patient. Treatment should be on the basis of laboratory confirmation (with results available within 1 hour), except:

1. During confirmed malaria epidemics when high patient volume precludes individual testing of all febrile patients, OR
2. Among children under 5 years in high transmission settings (Slide Positivity Rate >50%), whereas the Integrated Management of Childhood Illness (IMCI) model (using treatment based on clinical diagnosis) should be followed.[II]

RDT are often used in emergencies. Usually RDTs that detect only *P. falciparum* are used (e.g. Paracheck®), as they are cheaper, easier to use, and more robust than other species- detecting RDTs. Additionally, it is important to specifically exclude *P. falciparum* infection as it is more often potentially

life threatening than other species. However, RDTs should not be used to investigate suspected treatment failures or assess drug efficacy as they remain positive for up to two weeks after successful treatment. In settings where it is known that other species of malaria (such as *P. vivax*) are prevalent, other RDTs may be considered. However, these are generally more expensive and less efficient and reliable in field conditions.

Training, supervision, materials, and supplies for malaria microscopy should eventually replace RDTs for confirmatory diagnosis in stable settings. In all circumstances there should be access to at least one reference laboratory with good malaria microscopy for patient management; and in particular for assessing treatment failures and follow up, severe malaria, and weekly screening of severely malnourished patients. It is also essential for quality control of RDTs that are stored and used under field conditions.

Artemisinin-based Combination Therapy (ACT)

In emergency and non-emergency settings, the mainstay of response is prompt access to effective treatment. First line treatment should be with ACT, following case confirmation using RDTs or microscopy. Stocked in the new Interagency Emergency Health Kits (distributed by WHO), artemether-lumefantrine (Coartem®) is recommended specifically as first line therapy as it remains >95% effective in most African settings. However, depending on any specific country's national malaria treatment guidelines, other ACTs may be recommended for use as first line therapy.

Pregnant Women and Children

For treatment of pregnant women with uncomplicated malaria, artemether-lumefantrine should be used during the 2nd and 3rd trimesters of pregnancy and quinine and clindamycin in the 1st trimester of pregnancy. Artemether-lumefantrine should not be withheld in severe cases or if there is no other option available, and its use in children weighing less than five kilograms is not recommended.[III]

Severe Malaria

Individual cases of severe malaria are marked by hypoglycemia, severe anemia, shock, coma, renal failure, and pulmonary edema. These complications must be urgently addressed and treated in addition to providing appropriate anti-malarial therapy. Guidelines recommend the use of artesunate (intravenous [IV], intramuscular [IM]), artemether (IM), or rectal artemisinin derivatives – which are generally given in situations when the patient is being referred and IV or IM therapies are not available or appropriate. IV quinine is a final alternative, and the goal should be to eventually convert to full course oral ACT therapies when clinically appropriate. In early emergency settings where diagnostics are not yet available, empiric therapy for clinically-suspected severe malaria should not be withheld. Groups at risk for developing severe malaria include pregnant women, young children, those recently displaced, and persons with depressed immunity or severe malnutrition.[III]

Once the emergency phase is over, the approach to treatment and diagnosis should be harmonized with the host country's National Malaria Control Programme, whenever possible. The treatment protocol must always be based on the use of efficacious anti-malarial drugs, which for most *P. falciparum* transmission settings will be ACT. Drug treatment protocols should be based on efficacy data that are less than two years old. Where recent efficacy data are not available, UNHCR and partners may need to engage in efficacy studies with the respective Ministries of Health (MoH) in the affected countries and other partners, such as the WHO. Where the national protocol is based on drug treatment that is no longer effective, then special permission should be obtained from the local authorities to deviate from the national protocol. In situations such as this, the best approach is to use the most efficacious drug to treat all individuals within the refugee-affected area although, in reality, this is difficult to achieve.

Internally Displaced Persons (IDPs) and Returning Refugees

With mass population movements, there is a risk that large numbers of non-immune people may be introduced to regions with high malaria activity. Malaria-partial immunity is thought to wane during stays of 6 months or more in non-endemic areas. It is also possible to transfer different species or different strains with varying drug susceptibilities to new locations – thus posing potential risks for both new arrivals and resident populations.

Therefore, if large population movements are seen or anticipated, the most cost effective measure is to act as close as possible to the time of departure by screening the entire population and subsequently treating positive cases with ACT. Intense information, education, and communication (IEC) efforts are required to ensure that newly arriving populations promptly seek care for fever-related illnesses and receive preventive interventions such as LLINs.

PREVENTION

Preventive measures are generally implemented as the emergency phase shifts into a more stable situation where population flux has diminished. Implementing successful malaria prevention requires available and trained personnel (particularly community health and sanitation workers), sufficient funding, culturally-appropriate and acceptable interventions, and a focus on community-based programming. Factors such as limited access and compromised procurement of supplies due to conflict, security concerns, divergence of preventive efforts to treatment efforts, lack of expertise, and rapid staff turnover may constrain the implementation of preventive measures. Additionally, unstable situations make long-term planning and evaluation of prevention efforts difficult.

During the acute phase, several factors such as risk of infection, characteristics of the population, type of shelter used, and aspects of the local mosquito vector may help determine what preventive measures are appropriate. As the situation becomes more chronic, re-assessment is important as both shelters and population movements may change.

Regardless of the phase of the emergency, culturally-appropriate IEC campaigns should be used in concert with implementation of preventive measures. Community health workers should collaborate closely with staff from water and sanitation teams in order to apply integrated vector control management strategies, including source reduction activities (e.g. draining breeding areas and tap stand maintenance).

Intermittent Preventive Treatment in Pregnancy (IPTp)

The risk of infection with and clinical severity of malaria is higher in pregnant women, particularly with *P. falciparum*. It is also often dependent upon HIV and immune status, previous exposure to malaria, and parity (higher parity being protective). The most common complication of malaria infection for pregnant women is severe anemia, while the most common complication for the infant is low birth weight (LBW), which is further predictive of neonatal demise.

It has been well studied that in moderate to high transmission areas where mothers most often possess at least partial immunity, preventive therapies are beneficial for both the pregnant mother and her child. In reference to pregnant women, in times of emergency, interventions should include good case management, active finding of fever cases, malaria screening, priority of LLIN distribution, and IPTp provided in conjunction with antenatal care (ANC).

Despite high levels of resistance, sulfadoxine-pyrimethamine (SP) remains the staple drug of choice for IPTp, and it should be implemented (even if no national IPTp policy exists) in the following circumstances:

- transmission intensity is moderate to high
- ANC services are established
- SP remains at least moderately efficacious (resistance <50%)

SP is given once during the 2nd and once in the 3rd trimester of pregnancy. For HIV positive mothers or where HIV prevalence is greater than 10% among pregnant women, SP is given monthly from the start of the second trimester. However, SP should not be given to HIV positive women receiving daily cotrimoxizole prophylaxis. In low transmission settings, epidemics, or where SP is inadequate (resistance >50%), the focus of malaria control for pregnant women should be on prompt diagnosis and treatment and other preventive interventions. Ideally, IPTp should be administered using Directly Observed Therapy (DOT) and all doses should be recorded in a register book. A system should be developed using community health care workers to trace women who have failed to show up for their IPTp doses.

Indoor Residual Spraying (IRS)

IRS can be effective in emergency settings but its success depends on several conditions: presence of an endophilic (indoor resting) vector, use of an efficacious insecticide, a well-trained staff, and housing structures that have walls suitable for spraying. It is essential, prior to any spraying campaign, that all equipment to be used is tested and repaired, if necessary.

Experiences from many UNHCR and other programmes show that spraying usually commences after the start of the rainy season, too late to have an impact on malaria transmission. This is a considerable waste of resources and risks possible negative consequences for the environment and human health. Even with all the required operational factors in place, IRS is not always completed effectively. Insecticides must be selected on the basis of known efficacy and sensitivity data; and, because of historically tenuous public acceptance, IRS is a strategy in which it is critical to implement strong information, education and communication (IEC) in advance of the spray campaign to maximize public participation and adherence. Timing of spray campaigns should also take into account cultural patterns of mud plastering walls in accordance with holidays or other traditional practices.[IV]

At least 85% of all dwellings must be covered for effective community protection.[V] IRS should only be implemented in emergency and stable settings where the following elements are in place:

- Availability and adequacy of equipment and logistics
- Trained and expert staff
- Well organized implementation plan, with adequate levels of supervision and monitoring
- Ability to implement spraying prior to the rainy season

Suggested indicators include:[V]

- Coverage = number of dwellings sprayed/number of dwellings in targeted area (%).
- Insecticide used per dwelling = quantity of insecticide used/number of dwellings sprayed (a measure of efficiency and correct use of insecticide)
- User acceptability pre-spray = % of households agreeing to be sprayed
- User acceptability post-spray = % of dwellings re-plastered or washed, or % of householders complaining about IRS (to be assessed one month after spraying)

Long Lasting Insecticidal Nets and Insecticide-Treated Nets

WHO currently recommends full coverage of populations at risk of malaria, preferably with that malaria control programs should specifically purchase only LLINs in order to provide 100% coverage of all people at risk of malaria. However, nets have been shown to provide a community protective effect when as little as 60% of the population are using the nets.[VI, VII] At lower rates of coverage, they have only an individual effect on those sleeping under the net.

During the initial emergency phase, net distribution should target those most at risk, such as pregnant women and children under five years of age. As soon as it is feasible, free distribution of nets should be provided to the entire population at risk. All infants at their first immunization visit and pregnant women visiting antenatal clinics should receive an LLIN in endemic areas.[VIII] All UNHCR programs should have full coverage with LLINs for all inpatient beds (clinics, hospitals, and therapeutic feeding centres). Additional general campaigns for net distribution can be developed targeting distribution at primary health facilities, HIV/AIDS programmes, feeding centres, and through the use of community health care workers. This will help to ensure that all at-risk populations are targeted and covered.

Distribution should be accompanied by effective community education strategies, monitoring, and follow up. Net misuse and resale is a problem in refugee settings where adequate community engagement and education is not conducted, and where there are competing survival priorities. For example, some programmes have noted that nets are sold when food rations have been cut or when distribution of non-food items is limited.

There are many other insecticide-treated materials which have been used in attempt to prevent spread of malaria, such as insecticide treated blankets, clothing, and plastic sheeting. Although many show promising study results, none are currently approved and/or recommended by WHO or the WHO Pesticide Evaluation Scheme. Insecticide-treated hammocks may be a valuable asset for displaced populations to use to prevent forest malaria.

LLINs are expected to last for three years under field conditions, if used as recommended. Given the stark living conditions in which the displaced often reside, expectations may need to be decreased regarding expected length of usefulness of LLINs in these settings. Programmes should ensure that a system is in place to record when LLINs were purchased and distributed, and budget accordingly for cyclic replacements as needed.

Monitoring of net retention and utilisation should occur on a regular basis, such as at time of distribution, one and six months post-distribution, and annually thereafter. It is important to distinguish between net retention and proper net usage. Sample indicators include:[V]

- Coverage = number of LLIN/ITNs distributed/target population size (%).
- Utilization rate = number of Under 5s/pregnant women who slept under the net on the previous night/number of Under 5s/pregnant women given LLIN/ITNs (%).
- Retention rate = number of people retaining LLIN/ITNs / number of people originally given LLINs/ITNs (%).
- Deterioration rate = average number of holes per LLIN/ITN.

As LLINs are a relatively new intervention, many programmes are still using ITNs. If so, a regular programme of re-treatment should be established within the community, as well as for all nets used inpatient facilities.

Information, Education, and Communication and Community Participation

For malaria in particular, community investment and participation are absolutely essential for a successful prevention and treatment operation. Preventive interventions, such as the use of LLINs, require that individuals not only accept and retain the net but also use the net correctly. As well, the positive effects of IRS can be negated if the target population fears the insecticide or does not understand that walls should not be washed or re-plastered following a spray application. Delays in treatment seeking from health care facilities may be improved if culturally sensitive and appropriate IEC messages are developed through participatory methods that include input from community representatives.

When establishing messages and priorities, several key issues should be included: the link between the mosquito and the disease, identification of those most-at-risk, need for prompt treatment seeking with febrile illnesses, distinction between uncomplicated and severe malaria, and preventive methods and how best to access health facilities. Whenever possible, IEC activities should complement planned social events and link to other health campaigns. Health education messages should be widely distributed and visible in all health care facilities, as well as areas within camps or settlements where people meet, such as community halls, religious institutions or other gathering areas.

It simply cannot be overstated that IEC must be linguistically, socially, and culturally appropriate. In designing successful health education messages, several steps should be followed:[v]

- Define the objectives of health education
- Identify the target audience
- Define the desired behaviours and develop clear messages
- Provide information about what people can do
- Use methods that are culturally acceptable
- Deliver messages through trusted and respected individuals
- Provide training and materials

To help achieve these objectives, it is useful to establish multi-sectoral working groups consisting of representatives from implementing partners and coordination agencies (such as representatives from health, water/sanitation, education, and cultural enrichment programmes), as well as community leaders from the refugee and refugee-affected populations. Participation can be strengthened by meeting on a regular basis during which feedback and concerns can be discussed from all perspectives. An added benefit of these working groups is that those attending will receive routine updates and informal training in issues relevant to malaria control as well as learn ways to improve collaboration with other sectors.

Epidemic Preparedness and Response

Declaring a malaria epidemic can be somewhat difficult to do because often baseline malaria-related rates of morbidity and mortality and levels of endemicity are often unknown – especially in emergencies and in displaced populations. Additionally, malaria outbreaks can be sub-acute and be multi-factorial in causality. However, when baseline or seasonal data are lacking (stable situations often require five years data for comparison), the weekly incidence rate, case fatality rate, slide positivity rate (SPR), and malaria-proportional mortality may be helpful. In such cases, it is recommended that the alert threshold for a suspected malaria outbreak should be defined as a 1.5 times increase in the number of cases above the baseline (baseline defined as average rates over the previous three weeks).

Suspected malaria outbreaks should be investigated immediately with the purpose of attempting to achieve two objectives:

1. Confirm the cause of the outbreak with rapid prevalence surveys (high SPR or RDT positivity rate among fever cases)
2. Describe the characteristics of the outbreak (age groups, time and geographical distributions, epidemic curve)[v]

Proper preparedness measures should include several elements:

a. Stockpiling appropriate amounts of medications and supplies
b. Developing epidemic plans that include resource mobilisation
c. Identifying staff to serve as points of contact during an emergency
d. Adequate staff and transport if mobile teams are necessary
e. Training of all staff in emergency measures

Given the short half-life of some of the newer ACTs, attention must be placed on the shelf life of the drug when determining how long anti-malarials can be stored before they expire. As well, RDTs are heat sensitive so stocks of RDTs should be stored in a cool area whenever possible.

Once it has been determined that an outbreak has commenced, the first priority is to provide for prompt and effective diagnosis and treatment per the above mentioned guidelines. Vector control strategies may be considered, although these are primarily preventive measures, and should not drain resources from diagnosis and treatment efforts. Ideally, vector control strategies would be implemented prior to the epidemic peak.

With respect to treatment, it is important that enough clinical access points are available and that vulnerable populations are targeted. These settings are also amenable to empiric treatment based on clinical case definitions, once testing have confirmed that a malaria-related outbreak is occurring. RDT or microscopy may be continued on a small percentage of patients to provide a surrogate marker for malaria activity.

Follow-up evaluation of outbreak coverage of prevention efforts can be tracked using the above-mentioned malaria-related morbidity and mortality indicators and case fatality rates. Systematic prevalence and demographic assessments also help to further characterize malaria and population activities in relation to the outbreak.[V]

Health Information System (HIS) and Monitoring and Evaluation

The use of a health information system is essential to ensure that standardised data are available for routine programme monitoring and evaluation. An HIS uses a set of mutually-agreed upon common core variables and standard indicators, with associated tools for data collection and analysis. All agencies involved in malaria control activities should use the same tools and HIS. When applicable, the UNHCR HIS should be employed. It is important to be aware of the host country's HIS, if available, to assist national staff in transitioning from the national HIS to that of UNCHR's HIS, as there may be slight differences in terminology and case definitions.

The UNHCR HIS uses the following case definitions for malaria:[IX]

Suspected Malaria:

UNCOMPLICATED
Any person with fever or history of fever within the past 48 hours (with or without other symptoms such as nausea, vomiting and diarrhoea, headache, back pain, chills, myalgia) in whom other obvious causes of fever have been excluded.

SEVERE
Any person with symptoms as for uncomplicated malaria, as well as drowsiness with extreme weakness and associated signs and symptoms related to organ failure such as disorientation, loss of consciousness, convulsions, severe anaemia, jaundice, haemoglobinuria, spontaneous bleeding, pulmonary oedema and shock.

TO CONFIRM A CASE
Demonstration of malaria parasites in blood film by examining thick or thin smears, or by RDT for *Plasmodium falciparum*.

At a very minimum, as in all settings, crude mortality and under 5 mortality should be ascertained. Ideally, as soon as feasible, additional indicators should include:

- Proportional mortality due to malaria
- Proportional morbidity due to malaria
- Incidence of malaria
- Case fatality rate (confirmed cases)
- Blood-slide positivity rate
- Rapid-diagnostic test (RDT) positivity rate.

References

I UN Millennium Project (2005). *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals. Overview*. Communications Development, Inc., Washington, D.C.

II WHO (2005). *The Integrated Management of Childhood Illness (IMCI) Handbook*. Geneva, World Health Organisation (WHO/FCH/CAH/00.12).

III WHO (2006). *Guidelines for the Treatment of Malaria*. Geneva, World Health Organisation (WHO/HTM/MAL/2006.1108).

IV WHO (2006). *Indoor Residual Spraying*, Geneva, Global Malaria Programme/ World Health Organisation (WHO/HTM/MAL/2006.1112).

V WHO (2005). *Malaria Control in Complex Emergencies, An Inter-Agency Field Handbook*. Geneva, World Health Organisation (WHO/HTM/MAL/2005.1107).

VI Killeen GF et al. (2007). Preventing childhood malaria in Africa by protecting adults from mosquitoes with insecticide-treated nets. *PLoS Medicine* 4: e229.

VII Hawley WA et al. (2003). Community-wide effects of permethrin-treated bed nets on child mortality and malaria morbidity in western Kenya. *Am. J. Trop. Med. Hyg. 68 (Suppl 4)*: 121-127.

VIII WHO (2007). *Insecticide-treated mosquito nets: a WHO position paper*. Geneva, World Health Organisation.

IX UNHCR (2007). Health Information System Toolkit, Case Definitions (HISNBI0307). (www.unhcr.org/protect/PROTECTION/4614aa682.pdf).

ADDITIONAL RESOURCES AND REFERENCE MATERIALS

Key Documents

- Bloland, P.B., Williams, H.A. (2003). Malaria Control during Mass Populations Movements and Natural Disasters. National Research Council and Program on Forced Migration and Health and the Joseph L Mailman School of Public Health of Columbia University, National Academies Press, Washington D.C.
- SPHERE Project (2004). Humanitarian Charter and Minimum Standards in Disaster Response. Geneva, The Sphere Project. (www.thespherereproject.org)
- Warrell, D.A., Gilles, H.M. (2002). Essential Malariology. New York City, Oxford University Press Inc.
- WHO (2004). Roll Back Malaria consultation on best practices and lessons learnt: implementing malaria control in complex emergencies in Africa 2000-2004. Geneva, World Health Organisation. (www.who.int/malaria/epidemicsandemergencies).
- WHO (2005). Malaria Control in Complex Emergencies, An Inter-Agency Field Handbook. Geneva, World Health Organisation. (WHO/HTM/MAL/2005.1107). (www.who.int/malaria/epidemicsandemergencies).

References by Topic

CASE DEFINITIONS

- Connolly M (ed). (2005). Communicable disease control in emergencies: A field manual. Geneva, World Health Organisation (www.who.int/infectiousdisease-news/IDdocs/whocds200527/whocds200527chapters/index.htm).
- UNHCR (2007). Health Information System Toolkit, Case Definitions (HISNBI0307). (www.unhcr.org/protect/PROTECTION/4614aa682.pdf).

COMMUNICATION AND COMMUNITY ENGAGEMENT

- Malaria Consortium (1999). Partnerships for change and communication: guidelines for malaria control. London, London School of Hygiene and Tropical Medicine and WHO. (sara.aed.org/sara_pubs_list_usaid_1.htm).

DIAGNOSIS

- Laboratory identification: www.dpd.cdc.gov/dpdx. (Companion CD-ROM available by request: dpdx@cdc.gov).
- Rapid diagnosis: www.wpro.who.int/rdt.
- WHO (1991). Basic Malaria Microscopy (part I and II). Geneva, World Health Organisation.

DRUG SELECTION AND SUPPLY

- Information on WHO/UNICEF prequalified drugs: mednet3.who.int/prequal.
- Standard efficacy study protocol: www.who.int/malaria/resistance.html.
- Interagency Emergency Health Kit 2006: http://www.who.int/medicinedocs/index.fcgi?a=d&d=Js13486e.

EPIDEMICS

- Nájera, J.A., Kouznetsov, R.L., Delacollette, C. (1998). Malaria Epidemics, Detection and Control Forecasting and Prevention. Geneva, World Health Organisation. (www.rbm.who.int/docs/najera_epidemics/naj_toc.htm).
- WHO (2002). Prevention and control of malaria epidemics. Geneva, World Health Organisation. (www.who.int/malaria/cmc_upload/0/000/015/827/3epidemics_report.pdf).
- WHO (2004). Field guide for epidemic assessment and reporting. Geneva, World Health Organisation. (www.who.int/malaria/cmc_upload/0/000/016/569/FTest.pdf).

HIV

- WHO (2004). Malaria and HIV interactions and their implications for public health policy: report of a technical consultation Geneva, Switzerland 23-25 June 2004. Geneva, World Health Organisation. (www.who.int/hiv/pub/prev_care/malaria/en/index.html).

IRS

- Insecticide selection: www.who.int/malaria/cmc_upload/0/000/012/604/IRSInsecticides.html.
- Specifications of public health insecticides: www.who.int/ctd/whopes.
- WHO (2006). Indoor Residual Spraying. Geneva, Global Malaria Programme/World Health Organisation. (WHO/HTM/MAL/2006.1112).

LLIN/ITN

- WHO (2002). Instructions for treatment and use of insecticide treated nets. Geneva, World Health Organisation. (whqlibdoc.who.int/hq/2002/WHO_CDS_RBM_2002.41.pdf).
- WHO (2007). *Insecticide-treated mosquito nets: a WHO position paper.* Geneva, World Health Organisation. (www.who.int/malaria/docs/itn/ITNspospaperfinal.pdf).

MONITORING AND EVALUATION

- Global Fund (2006). Monitoring and Evaluation Toolkit: HIV/AIDS, Tuberculosis, and Malaria. Geneva, Global Fund. (www.theglobalfund.org/pdf/guidelines/pp_me_toolkit_en.pdf).

TREATMENT

- WHO (2000). Management of severe malaria – a practical handbook, 2nd ed. Geneva, World Health Organisation. (www.who.int/malaria/docs/hbsm_toc.htm).
- WHO (2001). The use of antimalarial drugs. Geneva, World Health Organisation. (www.who.int/malaria/cmc_upload/0/000/014/923/am_toc.htm).
- WHO (2006). Guidelines for the Treatment of Malaria. Geneva, World Health Organisation (WHO/HTM/MAL/2006.1108).

GENERAL

- forum.actmalaria.net/YaBB.pl
- www.malariaconsortium.org
- www.wellcome.ac.uk/node5816.html
- www.who.int/malaria
- www.who.int/whopes

ANNEX 2: MALARIA SITUATION ASSESSMENT CHECKLIST

Sources of information

- UNHCR/NGO/MOH/WHO data and reports
- Interviews with health staff and other key informants
- Focus group discussions with beneficiaries
- Direct observation of health facilities (record review, pharmacy, treatment practices)
- Surveys as necessary (eg household - parasite or fever prevalence, health seeking behaviour, ITN usage; health facility exit surveys; entomological data)

Policy framework

- National Malaria Control Programme – treatment protocol, efficacy data, drug delivery systems, prevention activities, surveillance system
- Population of concern addressed by National Malaria Control Programme

Coordination mechanisms

- Annual expenditure per capita on health, on malaria control specifically for population of concern
- UNHCR and partner capacity for planning, monitoring and evaluating malaria control programme
- Malaria task force or other interagency coordination mechanism
- Malaria planning, implementation, monitoring and evaluation included in annual programme cycle
- Standardisation of data collection, analysis and dissemination

Epidemiological situation

- Target population and demographics (including % women, % children <5)
- Epidemiology of place of origin, transit (if recently arrived) and asylum
    - Vector and insecticide resistance
    - Parasite species and drug resistance
    - Seasonality, stability of transmission
    - Climate
- Health data
    - Malaria incidence and proportional morbidity due to malaria (by age, over time)
    - Malaria specific mortality rate and proportional mortality due to malaria (by age, over time)
    - Proportion of admissions to hospital due to malaria, case fatality rate (by age)
    - Main diseases of public health importance.
    - HIV prevalence

Infrastructure and personnel

- Primary health facility
  - Condition, including water, latrines
  - Distance, opening hours, catchment population
  - Materials for universal precautions
  - Supplies, drugs and equipment
  - Pre-referral treatment protocol (eg artesunate suppositories, intramuscular artemether)
- Referral facility
  - Condition, including water, latrines, mosquito nets
  - Supplies, drugs, equipment
  - Capacity for safe blood transfusion; caesarian section.
  - Transport, communication, travel time
  - Distance, opening hours, catchment population
- Personnel
  - Number and type
  - Training
  - Supervisory mechanisms

Malaria service provision

- Partners / service providers
- Treatment
  - Protocols available in health centres
  - Drugs supply management system in place
  - Supervisory system
- Preventive activities (describe)
  - Date of last activity
  - Estimated coverage
  - Supervisory system
- Health education and community mobilisation activities (describe)
  - Frequency
  - Coverage
  - Supervisory system

Behavioural, socio-cultural and systemic barriers to successful implementation of malaria control activities

- Utilisation of formal health facilities
- Accessibility of formal health care to all population sub-groups
- Preference for traditional practices
- Presence of harmful traditional practices
- Attitudes to fever, convulsions, anaemia
- Attitudes to formal health care

Surveillance, monitoring and evaluation

- Clinic and hospital data – morbidity and mortality time trends (by age)
- Community coverage data – prevention, promotion
- Health service provider – use of standard treatment protocols, attitudes to malaria treatment
- Community surveys - attitudes and use of prevention and treatment services
- Periodic evaluations

Notes

UNHCR
The UN Refugee Agency