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Strategic Plan to Roll Back Malaria in the South-East Asia Region 2005-2007



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1. MALARIA SITUATION THE SOUTH-EAST ASIA REGION

After a resurgence of malaria in countries of the South-East Asia Region (SEAR), in the mid-seventies (6.5 million cases in 1976), the number of confirmed cases of malaria declined to about 3 million each year in the decade of the nineties. Since 2000, the number of cases reported varied between 2-3 million each year. However, the estimated cases are between 20-23 million every year. Nearly 4000 deaths caused by malaria are reported each year while the estimates are around 30,000. More than 70% of the cases are reported from India while more than 50% of the deaths are reported from Myanmar.

1.1 Trends in Malaria

Maldives has remained free of indigenous malaria while the Democratic People's Republic of Korea has reported a resurgence of the disease caused by *P vivax* that has a long incubation period and is relapsing. The proportion of *P falciparum* increased steadily from 12.5% in 1977, to 48.6% in 2000. It was estimated to be about 45% in 2003.

1.2 Trends in Drug Resistance

The problem of drug resistance is becoming serious with progression from mono to multidrug resistance and appearance of chloroquine resistance in *P vivax* in certain areas in India, Indonesia and Myanmar. It is estimated that about 30% of the 20 million cases of drug-resistant malaria in the world are in SEAR countries.

The spread of drug-resistant *P falciparum* malaria is predominant across borders of affected countries. Cross border control of malaria should be a priority to contain the problem of multidrug resistance.

Malaria is a local/focal disease with wide variations. Therefore, it requires stratified, area-specific strategies for effective and sustainable control.

There are several ecological subtypes of malaria in Member Countries. These include malaria in forests and forest fringes, irrigation malaria, development project malaria, malaria in migrant population, and urban malaria.

Malaria is occurring increasingly in the form of focal epidemics. The areas affected by the epidemic become endemic for malaria if the control measures are ineffective. Resistance to vectors is increasing and the cost of insecticides is becoming unaffordable thus rendering the control measures ineffective.

Malaria is predominantly a disease of the poor, marginalized and vulnerable population. This affects socio-economic development adversely. According to the World Health Report 2001, malaria leads to an estimated loss of 1.87 million Disability Adjusted Life Years (DALYs) in SEAR countries each year. This amounts to a direct or indirect loss of about 3 billion US Dollars (USD) every year.

Malaria control programmes are being implemented in all Member Countries with substantial budgetary allocations. The technical expertise and health systems are available. In countries of the Region, the strategy should address the local/focal nature of the problem by using a stratified approach. What is needed is to upgrade the existing programmes and strengthen the health system progressively to improve quality. At the same time, the coverage of the programme should be expanded and scaled to ensure access to poor, marginalized and vulnerable populations that contribute to the malaria burden leading to an adverse socio-economic impact.

2. GAPS AND CONSTRAINTS

- Despite considerable allocation of resources for malaria control in the national budget and contributions from the partners, resource gaps limit the opportunities for scaling-up malaria control efforts.
- Inadequate evidence of the adverse effects of malaria on socio-economic development leads to insufficient and unsustained political commitment.
- Technical constraints include multidrug resistance, and resistance to insecticides.

- Effective drugs and insecticides are expensive.
- Natural disasters and breakdown of the health system due to natural disasters and civil disturbances are common in some Member Countries.
- Unprecedented urban development, unplanned developmental projects and frequent migration across porous international borders in some countries are contributing to the spread of malaria.
- The capacity of the health system, especially in areas where access is poor, is not adequate. This compromises access to prompt and effective treatment (APET). Medicines are often of poor quality and the use of counterfeit drugs is common in some countries especially in border districts.
- There is insufficient trained staff for providing APET.
- Utilization of accessible services is low because of poor community participation. Lack of adequate community participation is also a constraint in implementing effective control measures like indoor residual spraying (IRS) and insecticide treated bednets (ITNs).
- National policy in many countries has not been revised even though there is a global policy with a consensus and the information on therapeutic efficacy of drugs and insecticide resistance is available from the functioning networks.
- The reporting systems are poor and the reports are not consistent with global key and process indicators.
- Preparedness to predict, recognize and contain focal malaria epidemics is inadequate.
- There is lack of complementarity of evidence and operations which impede effective scaling-up of control efforts.

3. IMPORTANT LANDMARKS IN MALARIA CONTROL

WHO's malaria eradication programme during the decades of the fifties and sixties failed to eradicate the disease even though there was a dramatic decline in morbidity and mortality.

After an effective control of the disease during the sixties, malaria resurged in the seventies with 6.5 million cases reported during 1976. After this resurgence, the control efforts gained momentum that culminated in a ministerial conference in Amsterdam in 1992 that enunciated a Global Malaria Control Strategy (GMSC). This strategy was endorsed by countries in the South-East Asia Region.

Building on the GMSC, the Director-General of WHO launched the Roll Back Malaria (RBM) initiative in 1998. This was endorsed by SEAR health ministers and RBM was adopted by seven Member Countries. Other countries (Bhutan, DPR Korea, and Maldives) did not adopt RBM because of the small size or because of no indigenous cases of malaria (Timor-Leste did not exist at that time). They have incorporated the key elements of RBM and continue to pursue the global malaria control strategy.

In 2002, the Global Fund for HIV/AIDS, TB and Malaria (GFATM) was established with one of its objectives being to support the scaling-up of efforts through funding to enable countries in the Region to achieve the goal of reducing malaria morbidity and mortality.

4. ACHIEVEMENTS OF ROLL BACK MALARIA IN THE REGION

Malaria control efforts have been ongoing in Member Countries of the Region with impressive achievements even before the RBM initiative. Acceleration of efforts has occurred since then. An increase in funding for expanding malaria control efforts to achieve the goals of RBM by 2010 provides optimism for reaching the goals of RBM.

- The Region has established technical resource networks comprising Drug Resistance and Policy (DRP), Transmission Risk Reduction (TRR) and Surveillance information management, preparedness and response (SIE). Twenty-two sites to monitor drug resistance and six sites for transmission risk reduction have been supported by WHO. Other drug resistance monitoring sites have been established from national or other sources. The sites for monitoring drug resistance provide useful evidence which is utilized to update and revise the national policy. The national policy has been revised in Bangladesh, Bhutan, Indonesia, Myanmar and Thailand.

Efforts have been initiated in India, Nepal and Timor-Leste to review and revise the policy on antimalarials.

- To address the cross-border problem of malaria, the Mekong Roll Back Malaria and South Asia collaborative projects have been initiated. Important achievements include partnerships with UN agencies and several international organizations and institutions, increase in the capacity of Mekong countries in tackling malaria, preparation of an Information, Education and Communication (IEC) plan, a Mekong profile, regular exchange of information, Geographical Information System (GIS) mapping, monitoring the quality of antimalarials and strengthening of drug resistance monitoring. Integrated control of priority communicable diseases including malaria is the thrust of collaboration in countries of South Asia. Operational and technical guidelines have been prepared and workplans developed for 11 out of 64 border districts. Monitoring of therapeutic efficacy has been conducted in two border districts in India and Nepal with support from the Environmental Health Project (EHP) USAID.
- GFATM has approved the applications of Bhutan, DPR Korea, India, Indonesia, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste during the first four rounds of applications. The funds committed for the next five years exceed 150 million US \$. This would provide additional resources to scale-up the control efforts.
- WHO capacity development has comprised of staff members supported by 2-3 Short-term professionals in the Regional Office and one in DPR Korea, a staff member for Mekong collaboration, a staff member each in Indonesia and Myanmar and National Professional Officers in Bangladesh, India Indonesia, and Sri Lanka.
- Tools and guidelines have been developed to (a) strengthen management skills of staff for district level implementation; (b) guidelines for treatment of malaria in the community; (c) guidelines for management of severe malaria in level I and level II health facilities and hospitals; (d) a framework for Integrated Management of Childhood Illnesses and RBM (IMCI-RBM) collaboration; (e) strategies for scaling-up the operationalization of ITNs and (f) tools for monitoring the progress of RBM.
- Consensus has been obtained for monitoring and evaluation in Kunming, PR China and Haryana, India. Myanmar and Thailand have

incorporated changes in the reporting formats and other countries are introducing the changes. Protocols have been developed to undertake household and health facility surveys to measure the key RBM indicators. A consensus was reached in the reporting formats which were used for preparing the country profiles for 2003.

- Maharashtra State in India has reduced the burden of malaria by APET and the selective use of IRS, ITNs and biological control measures. Epidemics of malaria have been successfully controlled in Menoreh hills in Indonesia by using Rapid Diagnostic Tests (RDTs), Artemisinin-based combination therapy (ACT) and vector management. Several success stories have been documented.
- A SEARO website for malaria has been prepared and introduced for WHO staff through the intranet. It is being revised and will be available on the internet. This website will be appropriately linked to WHO RBM website and other websites to promote electronic connectivity for information exchange.
- Partnerships have been established in the countries to Roll Back Malaria. Countries have established country cooperation mechanisms through formation of national task force. Networks are functioning. WHO, UNICEF and other UN agencies, USAID, DFID, Asia Development Bank (ADB), European Commission (EC), World Bank, and International Non Governmental Organizations (INGOs) are participating in the partnerships to roll back malaria.
- RBM Mekong was initiated in 1999 following the inception meeting held in Ho Chi Minh City, Vietnam. The objectives of RBM Mekong are in line with the Global RBM but with special emphasis on delaying the spread of multidrug resistant falciparum from the Greater Mekong Sub-region (GMS) to other areas. It is a bi-regional collaboration between the WHO South East Asia and Western Pacific Regions. Two countries in SEAR (Myanmar and Thailand) have been actively participating in this sub-regional network and the RBM Mekong coordinator is based in Thailand. The network has provided several lessons and success stories, e.g., implementation of RBM Mekong (Kunming) indicators, issuance of the GIS-based Mekong Malaria Monograph, establishment of antimalarial drug quality monitoring and continuous monitoring of therapeutic efficacy of drugs, etc.

5. STRATEGIC DIRECTIONS

5.1 Mission

To reverse the trend of malaria by reducing morbidity and mortality, improving the quality of life and thereby contributing to health and mitigation of poverty in countries of the South East Asia Region.

5.2 Goals

To reduce the malaria morbidity by 50% and to reduce mortality by 75% of the levels in 2000 by 2010 and achieve the Millennium Development Goals (MDG)* in the Member Countries of the Region by 2015.

5.3 Objectives

The overall objectives of the strategic plans are:

- To promote the implementation of evidence based strategies for malaria control through sustained technical support and partnerships;
- To facilitate the access of populations at risk to effective treatment of malaria;
- To support the application of effective preventive measures against malaria for population at risk through integrated vector management;
- To strengthen capacity building for malaria control especially at local level in the Member Countries; and
- To assist in the strengthening of malaria surveillance systems and the monitoring and evaluation of malaria control at all levels.

6. TECHNICAL CONSIDERATIONS

As a result of the declining trend in the reporting of malaria cases in the Region, the strategy, while continuing to stress access to prompt and effective treatment of malaria with recommended antimalarials (especially in difficult to

* In 2000, Millenium Development Goals (MDGs) were adopted as quantified targets for ending extreme poverty by 2015. The MDGs aim to cut poverty in its many dimensions: low income, hunger, lack of education, diseases including malaria, etc.

access areas), will increasingly focus on reduction in incidence through effective vector management and surveillance.

6.1 Early Case Detection and Prompt Treatment

Diagnosis by microscopy should continue to be strengthened since complete treatment of malaria should be done with combination drugs that are effective. These drugs are expensive and their indiscriminate use may also render them ineffective. Rapid diagnostic test (RDT) is to be considered in areas affected with *P falciparum* where microscopy is lacking, for emergency use and in the early phase of focal epidemics. At the same time, quality diagnosis by microscopy will continue to be emphasized. In areas affected by multidrug resistant *P falciparum*, combination drugs containing artemisinin derivatives (ACT) are recommended. Chloroquine can be continued in areas where resistance to the drug has not developed yet. The decision about antimalarials should be based on rational policy decided and on the therapeutic efficacy of antimalarials. Countries also need to provide standard guidelines on the rational treatment of fever based on case definition of malaria determined by the risk of malaria in areas where diagnosis is not possible because of poor access. Therapeutic efficacy of antimalarials should continue to be monitored and the findings used to update/revise the national policy on drugs. In addition to the promotion of use of standard treatment guidelines in various situations, tools will be shared to ensure the quality of diagnosis of malaria and standard protocols provided by WHO to monitor the therapeutic efficacy of antimalarials. Access to prompt and effective treatment should be ensured through appropriate public-private mix with appropriate stewardship of the private sector by the national government.

6.2 Integrated Vector Management (IVM)

The integrated vector management strategy is based on selective application of various control measures determined by the eco-epidemiological situation of malaria. An integrated stratified approach is recommended. Insecticide-treated nets (ITNs), are useful where the vector is exophilic while indoor residual spraying (IRS) is useful where the vector is endophagic. ITNs may be required to supplement IRS where the coverage with IRS is not satisfactory. IRS will also be used to control focal epidemics. For the selection of

insecticides and the nets, WHO standards should be used. A regional strategic plan for operationalization of scaling-up of ITNs has been developed. This is recommended for preparing the workplans for scaling-up ITNs (refer to the WHO/SEAR strategy on operationalization of ITNs). Vector control measures e.g. biological control methods with larvivorous fish (*Gambusia* and *Guppy*) and environmental and personal protection measures are recommended where appropriate. Several success stories in countries of the Region will be used for promotion of this approach wherever relevant.

6.3 Containment of Focal Epidemics

Preparedness is the key to timely prediction, recognition and prompt control of focal epidemics of malaria. The South Asia Association for Regional Cooperation (SAARC) has recommended preparation of plans for the control of outbreaks of vector-borne diseases. Cross-border spread of malaria is important and intercountry cooperation is needed for effective control of the threat of cross-border malaria epidemics. Member Countries should establish a system on prevention and control of epidemics in disaster-affected communities as well among displaced populations. A rapid response team, an intelligence system, timely exchange of information and management of the supplies needed for control of epidemics are important measures to contain the epidemics. Computer software for prediction and early recognition of epidemics is available. This should be used in the programme. Successful experiences are available and these can be reviewed and used as a part of the preparedness to deal with the epidemics. The malaria control programme should coordinate its work on epidemic control with the disease surveillance and response programmes.

7. OPERATIONAL STRATEGIES

7.1 Policy, Political Commitment and Resource Mobilization

National policy should be updated and revised based on the epidemiology of malaria, evidence on drug resistance, recommended insecticides for IRS and treating bednets, standards recommended by WHO, and other important technical information. After revision, a broad consensus on the policy is required. This consensus is needed with all concerned groups like academia, the private sector, NGOs and different stakeholders. A national policy with

consensus will help the government in ensuring application of uniform standards of practice in the public, private sectors and NGOs. Sustained political commitment is necessary for scaling-up the malaria control programme. For this, evidence on the burden of disease is important to convince decision makers about the public health importance of malaria control as well as in the mitigation of poverty. Countries should prepare plans and a strategy for advocacy to sustain the commitment for malaria control. This should be done by developing and implementing a plan which will also help to mobilize additional resources on a sustainable basis.

7.2 Stratified Approach during Scaling-up of Malaria Control

In the South East Asia Region the distribution of malaria and the predominant parasite is not uniform. In every country there are low, moderate and high risk areas that are afflicted with *P vivax*, *P falciparum* or mixed infections. The distribution of vectors is not uniform. The pattern of drug resistance and insecticide resistance is also variable. This is complicated by a changing picture that requires continuous surveillance and monitoring. The importance of surveillance and monitoring will increase as the incidence of the disease declines. This information is an essential prerequisite for planning the scaling-up of the control programme. The countries have information and that can be used in stratifying the areas to decide the strategies. The geographical information system should be developed, expanded and updated. HealthMapper software is now available and although it is being further improved, it is ready for use in countries of the Region.

7.3 Strengthening the Health System

An evidence-based malaria control programme requires a responsive health system. The existing capacity of the staff in the health centres and hospitals has therefore to be strengthened. While tools and guidelines have been developed, these should be adapted, translated (if required), printed and used in training different categories of health care providers. Most of the mortality due to malaria occurs in severe malaria. Training of medical personnel in the treatment of severe malaria should be a priority in areas where mortality due to malaria is high (e.g. Myanmar). Strengthening the health system by improving the quality of laboratory diagnosis and ensuring continuous supplies of good quality is important. Provision of adequate quantities of antimalarial

drugs is an integral part of health system strengthening. Access to prompt and effective treatment (APET) is considered as a basic right of people living in malarious areas. The focus should be on monitoring the quality of antimalarial drugs and the quality of diagnosis. This will be important in the containment of drug resistance. All health centres and hospitals should provide treatment after confirming the diagnosis of malaria. Referral of very sick patients to level I or level II hospitals should be strengthened and transportation facilities need to be provided for reduction of mortality. If resources permit, new health centres/hospitals should be established in locations where poor people live or in areas that are inaccessible.

At present, a large proportion of patients with fever do not have access to the health system, especially in the remote and difficult to reach areas. In these locations people contact health workers or health volunteers who do not have the facilities to do laboratory tests. In these circumstances, guidelines should be provided to ensure that the best empiric treatment using standard guidelines based on standard case definition and algorithms is given to the patient. This will help to increase access to diagnosis and treatment of malaria. It is important that the full treatment course is provided in the moderate and high-risk areas.

Access can be increased by enhancing the capacity of the private doctors and health workers so that they can also practice standard diagnosis and treatment of malaria. Collaboration from the industry and public sector undertakings should be solicited since these organizations can take up the responsibility of health care of their staff members and their families. Other strategies include collaboration with the IMCI and Making Pregnancy Safer initiatives. Further evidence is needed to determine the risk of malaria during pregnancy in countries of the Region. This will help to formulate a policy to increase access and to address the problems of the vulnerable groups.

7.4 Community Mobilization

The purpose of community participation is to bring about behaviour change to enhance early and appropriate care seeking and good treatment compliance. Participation of the community is very useful in IRS, ITNs and biological control. This can be achieved by community mobilization, communication for behaviour change, promotion of community-based care and creation of links between the community and the health system. To be effective, participatory approach is recommended.

Need-based investments are necessary to ensure effective mobilization of the community. Strategies like Communication for Behaviour Impact (COMBI) should be considered during scaling-up. Existing community support groups should be involved. These include religious groups, voluntary women's groups, schools, youth clubs and local self-government representatives.

7.5 Partnerships

Since its inception, RBM has made significant progress in establishing successful global partnerships. The RBM secretariat deals with partnerships. The Global Fund for HIV/AIDS, TB and Malaria has completed the consideration of four rounds of applications and decided about the funding support. Meetings of the partners are now a regular feature. Though this has helped to mobilize additional funds, more needs to be done.

At the regional and country levels, partnerships are needed and have to be sustained. Country Cooperation Mechanisms (CCM) in the form of a task force or a working group are now functioning. Since malaria is a local/focal disease in countries of the Region, action is required at the subnational and district levels to support the scaling-up of malaria control efforts. District level alliances are beginning to be established in some countries. The adoption of a decentralized approach is quite acceptable to the countries and is a national policy in many. It is important to intensify the formation of intersectoral district level committees and support programmes to enhance the capacity of these committees. In partnerships, intersectoral representation by including all the concerned sectors will help malaria control efforts. Malaria control should be mainstreamed in the work of other development sectors in addition to health to effectively control the disease.

7.6 Measuring Progress through Monitoring and Evaluation

Monitoring and evaluation are an integral part of the programme implementation cycle. Public health interventions are successful when they are based on evidence. The complementarity of the evidence base and implementation is important to ensure success during scaling-up of the malaria control programme. A consensus in the Member Countries has already been achieved on the minimum indicators to be used to measure progress. Countries should be supported to ensure that a change is brought

about in the reporting formats for preparing country profiles. Collaboration should be encouraged with the Health Management Information System (HMIS) and Integrated Disease Surveillance (IDS) for ensuring timely data management and feedback. The deficiencies in information should be supplemented by periodic household and health facility surveys. Protocols have been developed for a Malaria Indicator Survey (MIS), and a household and health facility survey. The inputs into the existing surveys like the Multiple Indicator Cluster Surveys (MICS) and Demographic Health Survey (DHS) should be coordinated to further strengthen the reporting system. Consensus has been reached on reporting formats which were used to prepare the country profiles for 2003. To enhance political commitment and for effective scaling-up, country programme reviews through mechanisms such as independent assessment or external evaluation should be promoted. For effective programme management and for tracking progress, a quarterly internal review of the programme is recommended. This can be undertaken in collaboration with WHO country staff.

The challenges in malaria control can be managed through promotion of research with the focus on operational and implementation research. The existing capacity for operational research has to be enhanced. To promote and sustain research, collaboration with the Special Programme on Tropical Disease Research (TDR), WHO Collaborating Centres and National Centres of Expertise is needed.

8. A ROADMAP FOR PLANNING AND PROGRAMMING

The regional strategic plans should be used in preparing national strategic plans that should cover a period of about 5-6 years. The guiding principle is to remove the existing technical and programme constraints and to expand and intensify implementation of the programme through evidence based planning. The national strategic plans should provide a roadmap for developing harmonized workplans. The roadmap should include the contributions expected from the public sector, the private sector, community-based organizations, academic institutions, manufacturing industry responsible for producing bed nets, insecticides, drugs, diagnostics, equipment and other products.

9. WORKPLANS

Workplans should be developed within the national strategic and policy framework. Member Countries should adopt result-oriented unified planning. The workplans should include national resources, and all other resources expected from partners. Through country cooperation mechanisms, harmonization of these workplans can be brought about with partners including WHO. The workplans should follow a log frame model to clearly reflect the expected outcome, indicators, products and activities. Monitoring of progress will be possible if baselines are indicated in the plan of action and specific measurable targets and sub-targets are articulated. The workplans should establish specific timelines for activities, products and identify the budget.

Table: Options for malaria control according to the risk of malaria

Criteria	High risk areas	Moderate risk areas	Low risk or no risk areas
Access to prompt and effective treatment (APET)	<p>All cases of fever in the health facilities should be investigated for malaria.</p> <p>Microscopy in catchment area of 30,000 population. RDT in centres with a catchment area of 5,000 population.</p> <p>In remote areas, fever cases to be treated for <i>P falciparum</i> using case definition since laboratory diagnosis is not available.</p>	<p>In remote areas, fever cases to be treated on the basis of case definition since laboratory diagnosis is not available. Provide full course of antimalarials.</p> <p>Microscopy for laboratory diagnosis of malaria in catchment area of 30,000 population.</p>	<p>Diagnosis of fever cases based on case definition* in areas where laboratory diagnosis is not available.</p> <p>Microscopy in catchment area of 30,000 population.</p>

* The case definition of malaria is different in the low risk areas as compared with high-risk area

Criteria	High risk areas	Moderate risk areas	Low risk or no risk areas
	<p>Ensure regular supply of good quality drugs that are approved by the national policy.</p> <p>Injectable quinine or artemisinin derivatives for the treatment of severe malaria.</p> <p>Choice of drugs to be based on the national policy and findings of therapeutic efficacy.</p> <p>Ensure compliance with treatment to prevent emergence of drug resistance.</p> <p>Ensure all referral hospitals are supplied with life-saving drugs.</p>	<p>Ensure regular supply of quality antimalarial drugs.</p> <p>Use the recommended first line drugs of good quality and ensure compliance.</p> <p>Ensure compliance.</p> <p>Ensure all referral hospitals are supplied with life-saving drugs.</p>	<p>Ensure regular supply of first-line antimalarial drugs.</p> <p>Ensure compliance.</p> <p>Ensure all referral hospitals are supplied with life-saving drugs.</p>
<i>Monitor therapeutic efficacy of drugs</i>	<p>Monitor therapeutic efficacy of currently used drugs or combinations to update and revise drug policy and decide the choice of antimalarials.</p>	<p>Monitor therapeutic efficacy to recognize the appearance of drug resistance early.</p>	
<i>Prediction, early recognition and control of epidemics</i>	<p>Strengthen existing surveillance</p> <p>Prediction through meteorological data</p> <p>Set up early warning system using the software available</p> <p>Monitor population migration and breakdown in health system</p> <p>Train district rapid response teams</p> <p>Analysis and follow up of rumours and media reports</p> <p>Review of entomological data</p>		

Criteria	High risk areas	Moderate risk areas	Low risk or no risk areas
	<p>Establish stocks of medicines and supplies for managing epidemics</p> <p>Follow the guidelines issued for the control of epidemics</p> <p>Provide training, tools and guidelines as part of epidemic preparedness</p> <p>Post-epidemic control measures</p>		
<p><i>Promotion of ITNs and LLINs</i></p>	<p>ITNs should be used if the vector is exophilic or exophagic. To supplement IRS.</p> <p>Strategy to mobilize targeted communities which accept nets (ITNs).</p> <p>Promote ITNs in targeted communities which do not accept nets.</p> <p>Consider various options including social marketing.</p> <p>Provide ITNs to poor and marginalized people, free of cost.</p> <p>Consider providing long lasting insecticidal nets (LLINs) for people living in remote areas where regular retreatment of the nets may be difficult.</p> <p>Ensure a minimum of 80% coverage of the targeted population.</p>	<p>ITNs should be used if the vector is exophilic or exophagic.</p> <p>Strategy to mobilize communities which accept nets (ITNs).</p> <p>Promote ITNs in communities in the targeted population.</p> <p>Consider various options including social marketing.</p> <p>Target high-risk groups (children below five and pregnant women).</p> <p>Ensure 80% coverage to have an impact on transmission.</p>	

Criteria	High risk areas	Moderate risk areas	Low risk or no risk areas
<p><i>Monitoring progress on malaria control</i></p>	<p>Quality microscopy and RDT.</p> <p>Regular flow of information, its analysis and feedback.</p> <p>Case fatality rates in severe malaria in hospitals.</p> <p>Change in therapeutic efficacy of antimalarial drugs.</p> <p>Number of cases of fever reporting within 24 hours of occurrence.</p> <p>Proportion of cases of fever diagnosed as malaria and treated within 24 hours of occurrence of fever.</p> <p>Change in insecticide resistance status.</p> <p>Monitor percentage of high risk villages achieving 80% ITN coverage.</p> <p>No. of epidemics reported and controlled.</p> <p>Efficient logistics in term of quality of supply and its distribution in time and space.</p>	<p>Quality microscopy.</p> <p>Regular flow of information, its analysis and feedback.</p> <p>Change in parasite type.</p> <p>Case fatality rates in severe malaria in selected hospitals.</p> <p>Monitoring emergence of drug resistance.</p> <p>Changes in number of malaria cases reported.</p> <p>Monitoring emergence of insecticide resistance.</p> <p>Monitoring distribution of agriculture pesticides.</p> <p>Number of epidemics reported and controlled</p> <p>Efficient logistics in terms of quality of supply and its distribution in time and space.</p>	<p>Occurrence of focal epidemics.</p> <p>Change in parasite type.</p> <p>Change in malaria cases reported.</p> <p>Response to treatment.</p> <p>Regular reporting of information.</p> <p>Re-emergence of endemicity reported</p>

Criteria	High risk areas	Moderate risk areas	Low risk or no risk areas
	Regular reporting of information and feedback.		
<i>Indoor residual spray and other vector control measures</i>	Selective IRS and larvicidal measures. Reduction in longevity/ density of vector.	Selective IRS and larvicidal measures. Reduction in longevity/density of vector.	Adoption of relevant measures in impending epidemic.
<i>Community participation</i>	Promote early recognition and treatment seeking in febrile cases. Encourage referral compliance to reduce deaths in severe malaria. Ensure treatment compliance. Adoption of ITNs and LLINs and their correct use. Enlist cooperation in IRS, ITNs/LLINs and biological control measures.	Promote early recognition and treatment seeking. Encourage referral compliance. Ensure treatment compliance. Promote adoption of ITNs, LLINs, IRS and other vector control measures.	Inform and mobilize the community for early care seeking, treatment and referral compliance.

10. ACTIVITIES TO BE CONSIDERED FOR ACHIEVING THE OBJECTIVES AND GOALS OF THE MALARIA CONTROL PROGRAMME BY WHO AND MEMBER COUNTRIES

Successful implementation of the malaria control programme depends on development of strategic plans by WHO and Member Countries that are focused on the local/focal problem of malaria. Other UN agencies and international partners should do a similar exercise. The strategic plans should

be harmonized between WHO Hq, the Regional Office and countries to develop a better understanding to ensure greater cooperation and prevent duplication of efforts. Based on the strategic plans, two-year workplans can be developed. Progress should be measured to help in replanning and for making corrections based on the lessons learnt.

Objective 1. To promote the implementation of evidence-based strategies for malaria control through technical support and partnerships

S. No.	Activity	WHO	National
1.	Adaptation of a 5-6 year strategic plan from WHO global and regional strategic plans	*	***
2.	Revise/update an evidence-based policy on drugs, insecticides and bednets based on global recommendations and findings of technical resource networks	**	***
3.	Sustained political will to mobilize resources	**	***
4.	Prepare an advocacy plan	**	***
5.	Coordination National level coordination committee (multi disciplinary) District level alliances – intersectoral	*	***
6.	Regional technical advisory group	***	*
7.	Cross-border collaboration	**	***
8.	Stratification of malaria, based on risk	*	***
9.	Programme management	*	***
10.	Community mobilization strategy	*	***

* WHO Only technical and developmental support from WHO
National Some efforts required

** WHO Technical support and developmental support, guidance and support for initial implementation
National Moderate efforts needed from countries, resource commitment needed

*** WHO Major contribution needed
National Expansion and scaling-up of resource commitment is high

Objective 2. To facilitate access of populations at risk to effective treatment of malaria

S. No.	Activity	WHO	National
1.	Regional and national networks to monitor drug and insecticide resistance	**	***
2.	Tools and guidelines, training guidelines	**	**
3.	Training of staff	*	***
4.	Regulation of prices, tax relief	*	***
5.	Procurement, logistics, management	*	***
6.	Norms and standards for quality of RDT. Establish the monitoring of quality of RDT and antimalarial drugs	**	***
7.	Monitoring of progress of implementation	*	***
8.	Registration and regulation of products	*	***
9.	Development of new tools, drugs, vaccines	***	**
10.	Strengthening of diagnosis of malaria at all levels	*	***
11.	Continued provision of quality antimalarial drugs to health facilities according to national norms	*	***
12.	Extending access to antimalarial drugs beyond the health system	*	***

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Objective 3. To support the application of effective preventive measures against malaria for population at risk through integrated vector management

S. No.	Activity	WHO	National
1.	Strategy and policy for integrated vector management	**	***
2.	Standards for insecticides for IRS and for treatment of bednets	***	*
3.	Specifications for nets and long lasting insecticidal nets (LLIN)	***	*
4.	Guidelines for microstratification to identify at-risk population	*	*
5.	Microstratification of the country according to distribution of at risk population	*	***
6.	Operational guidelines and training modules on ITN and IRS	**	**
7.	Marketing of ITNs through different strategies	*	***
8.	Distribution of nets to target groups		***
9.	Regulation of prices, tax relief	*	***
10.	Community participation in acceptance of nets, cooperation in IRS and retreatment of nets	*	***
11.	Resource mobilization for enhancing community participation (COMBI)	*	***
12.	Guidelines on environmental control and biological management	***	*
13.	Monitoring of insecticide resistance through networks	**	**
14.	Support research on new products	***	**
15.	Measuring progress in vector control	*	***

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Objective 4. To strengthen capacity building for malaria control especially at local level in the Member Countries

S. No.	Activity	WHO	National
1.	Human resource development policy including norms and standards for health facilities and hospitals at different levels	*	***
2.	Plans for development of capacity	*	***
3.	Coordinate with training institutions like Asian Collaborative Training Network on Malaria (ACT Malaria) and support training institutions.	***	**
4.	Training of master trainers and resource persons, piloting of training for different categories of health workers in hospitals and health facilities	***	*
5.	Preparation and adaptation of training guidelines and tools	**	***
6.	CD ROM, web-based material for distance learning	***	**
7.	Expansion of capacity development to other sectors	*	***
8.	Data base creation for inventory of capacity development in the government, private and NGO sectors	*	**
9.	Networking of institutions and individuals as expert trainers	*	***
10.	Measuring progress in capacity development	*	***
11.	Training and orientation of community health workers and health volunteers outside the health facilities	*	***
12.	Training in programme management	*	***
13.	Maintain rapid response team to control epidemics and emergency situation due to national disaster and civil disturbances	**	**

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National Expansion and scaling-up of resource commitment is high

Objective 5. To assist in the strengthening of malaria surveillance systems and the monitoring and evaluation of malaria control at all levels

S. No.	Activity	WHO	National
1.	Consensus on data base for surveillance and reporting	*	***
2.	Strengthening of health information system	*	***
3.	Adoption of uniform reporting formats for preparing country profiles and case fatality rates in severe malaria in selected hospitals	*	***
4.	Use of quarterly monitoring formats for tracking progress in scaling-up of malaria control	**	***
5.	Geographical mapping of the country based on malaria risk	**	***
6.	Participate with integrated disease surveillance, MICS,DHS,IMCI, MPS, EPI and other national programmes to strengthen the data base on malaria	*	***
7.	Strengthen Monitoring and Evaluation through household and health facility surveys	**	***
8.	Develop monitoring standards and guidelines for adaptation and use	*	***
9.	Surveillance of drugs and insecticide resistance, exchange of information, revision of policy	*	***
10.	Update the guidelines on international travel and health	***	*
11.	Enhance the capacity for operational and implementation research	***	**
12.	Identify research agenda and priorities	*	***

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*** WHO Major contribution needed
National Expansion and scaling-up of resource commitment is high