

# Myanmar Artemisinin Resistance Containment

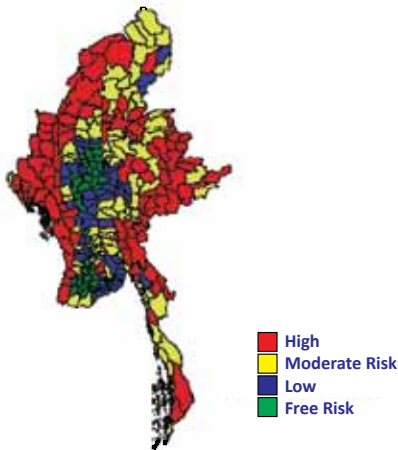


Fig. 1 Area stratification for malaria risk and transmission

Malaria remains one of the public health problems and a leading cause of morbidity and mortality in Myanmar. It is identified as a public health priority in National Health Plan (2006 - 2011) of Myanmar.

Malaria is highly endemic throughout the country especially in the eastern and western borders. Area stratification according to malaria risk and level of transmission is shown in Fig.1

In 2010, the malaria morbidity and malaria mortality were 11.7 per 1,000 population and 1.33 per 100,000 population, respectively.

Emergence of Artemisinin resistance *Plasmodium falciparum* in Mon State, Tanintharyi and Bago Regions is seriously threatening the progress in malaria control.



The Myanmar Artemisinin Resistance Containment (MARC) framework was developed through extensive consultation processes during mid 2010 and early 2011, which is in line with WHO Global Plan of Artemisinin Resistance Containment (GPARC). MARC framework was endorsed in April 2011 and the National Malaria Control Programme (NMCP) together with implementing partners initiated immediate containment actions in July 2011.

## Myanmar Artemisinin Resistance Containment (MARC)

- Target areas are confined areas with strong evidence of suspected artemisinin resistance, and areas near the suspected resistance zone.
- These areas are categorized into Tier 1, 2 and 3 according to evidence and level of artemisinin resistance (Refers to GPARC Zonation) and not according to the level of malaria transmission (malaria stratification) as in the case of malaria control.
- The MARC framework is planned for the first five years. The fund for rolling out containment has been acquired from 3DF.

Table 1 - Overview of tiers

Tier	Area	No. of townships	Justification
1	Tanintharyi: All 10 townships	21	Strong evidence of suspected resistance. Widespread ecological and social risk factors. Intensive population movement.
	Mon: All 10 townships		
	Bago East: Shwegyin township.		
2	Kayin State: All 7 townships	31	Unclear evidence of suspected resistance; Near suspected resistance areas in Myanmar, Thailand and China
	Kayah State: All 7 townships		
	Bago East: Remaining 13 townships		
3	Kachin: 4 townships		
3	Rest of country		

The overarching goal of malaria control in Myanmar is to reduce malaria mortality and morbidity (MDG 6).

# Myanmar Artemisinin Resistance Containment

## The Goals of MARC are:

1. To prevent or at minimum, significantly delay the spread of artemisinin resistant parasites within the country and beyond its border;
2. To reduce transmission, morbidity and mortality of *Plasmodium falciparum* malaria, with priority to areas threatened by artemisinin resistance.

## Objectives

The objectives of the MARC are as follows:

1. To strengthen and improve access to and use of early diagnosis and quality treatment according to the national treatment guidelines
2. To decrease drug pressure for selection of artemisinin resistant malaria parasites by stopping the use of Artesunate Monotherapies and sub-standard/fake drugs
3. To limit the transmission of malaria by intense mosquito control and personal protection
4. To increase migrant/mobile populations' access to and use of malaria diagnosis, treatment and vector control measures including personal protection
5. To support containment of artemisinin resistant parasites through advocacy and behavioural change communication/information, education and communication (BCC/IEC).
6. To conduct studies and do operational research to support the development of evidence-based containment policies and strategies
7. To provide effective management and coordination to enable rapid and high quality implementation of containment strategy.

The principle of the containment project is different from existing malaria control and it is new

technical guidance as the MARC strategy has been endorsed only in April 2011 following the findings of Therapeutic Efficacy Studies (TES) conducted by the Departments of Medical Research (DMR), the Defense Services Medical Research Sciences, NMCP and WHO, in 2010.

## Expected Output

Based on MARC strategy, we aim to:

1. Achieve 100% coverage of risk populations as soon as possible with priority to resistant areas, through multi-sectoral approach;
2. Decrease drug pressure through rapid elimination of artemisinin mono-therapy by replacement with artemisinin-based combination therapy (ACT)
3. Maximize effectiveness of transmission reduction by indoor residual spraying (IRS), insecticide-treated nets/long-lasting Insecticidal nets (ITN/LLINs) and other personal protection and aims at 100% coverage of ITNs/LLINs.
4. Target interventions at all groups of migrants
5. Intensify malaria surveillance to detect new foci of artemisinin resistance and mapping of migrants.

The MARC project has been rolled out in July 2011 with the support of Three Disease Fund (3DF) as an emergency project.

## Key activities

**Massive scale up malaria prevention in Tier 1, 2 and add new activities**

**Early Diagnosis and Effective Treatment**



# Myanmar Artemisinin Resistance Containment

## Improving case management through community and private sector involvement



Improving case management through involvement of communities and private sector (both formal and informal) with special emphasis on informal private providers with subsidized cost ACT and diagnosis.

## Banning of artemisinin-based monotherapy



Ban oral artemisinin-based monotherapy in market with subsidized ACT & rapid diagnostic test (RDT) through social communication

## Indoor Residual Spraying (IRS)



Reintroducing indoor residual spraying (IRS) and other personal protection measures in combination with ITN/LLIN

## Increasing the use of insecticide treated nets



Increasing the use of insecticide treated nets (LLINs/ITNs) and aiming at 100% population coverage and at target of 2 persons per net

## Mapping migrants and developing township plans for targeting migrants/mobile populations



Strengthening malaria prevention and treatment for migrants at their work-site and setting up malaria screening points

## Strengthening malaria surveillance at township and lower level



## Myanmar Artemisinin Resistance Containment

Sentinel surveillance of Day 3 parasitaemia in Tier 2 and 3, to supplement full scheme Therapeutic Efficacy Studies (TES) to monitor drug resistance and its spreading

Applying multi-sectoral approach (involve health and non-health sectors, business, private companies, community based organizations etc)



Increasing capacity and role of FDA in monitoring of drug quality and drug regulatory actions

Periodic survey in all townships in Tier 1 and 2 to assess the overall malaria situation and progress of implementation



Information, Education and Communication Mass Media (TV, Radio, Video parlor, Interpersonal communication, pamphlets, posters, calendars) in all target townships



Operational research related to drug resistance and containment interventions



**WORK TOGETHER.  
STOP ARTEMISININ RESISTANCE.**

