

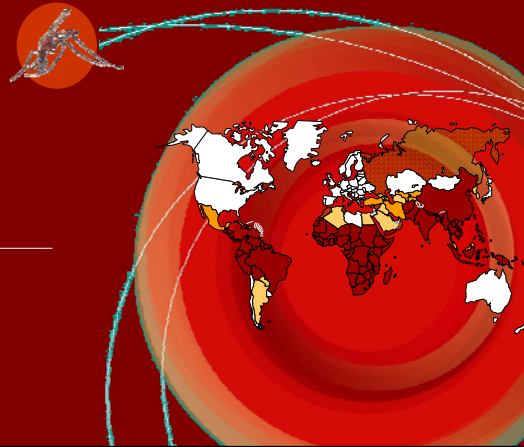
WHO Technical Updates on Malaria Policies

HWG Mock TRP Review Meeting: GF RD 10
Dakar, Senegal
29 June – 1 July, 2010

Dr. Peter OLUMESE,
Global Malaria Programme
WHO, Geneva, Switzerland.



**World Health
Organization**

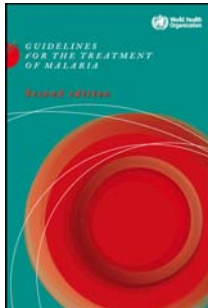


Malaria Control Technical Strategiesevidence-based actions

- Early diagnosis and prompt treatment with effective medicines
- Insecticide-treated nets (ITNs), Indoor Residual Spraying (IRS), and other vector-control methods
- Intermittent preventive treatment in pregnancy (IPTp)
- Emergency and epidemic preparedness and response
- Intermittent preventive treatment in infants (IPTi)



Prompt Treatment with Effective Medicines (Malaria Case Management)



Guidelines for the treatment of malaria (2nd Edition)
<http://www.who.int/malaria/docs/TreatmentGuidelines2010.pdf>

- ...provide comprehensible, global and evidence-based guidelines for the formulation of policies and protocols for the treatment of malaria
- provide a framework for development of specific diagnosis and treatment protocols in countries
 - Taking in account national and local malaria drug resistance pattern and health services capacity
- It is not a clinical management manual for the treatment of malaria
- *2nd Edition – (March 2010)*

Components of Malaria Case Management

- Malaria diagnosis (clinical and parasitological confirmation)
- Prompt and effective treatment within 24 hours of symptoms
- Support intervention for effective case management
 - Monitoring resistance of antimalarial medicines (therapeutic efficacy monitoring)
 - Pharmacovigilance
 - Functional supply chain management
 - Disease surveillance

Malaria Diagnosis

- Prompt parasitological confirmation by microscopy or alternatively by RDTs is recommended in all patients suspected of malaria before treatment is started.
- Treatment solely on the basis of clinical suspicion should only be considered when a parasitological diagnosis is not accessible.



Choice of RDT

WHO-FIND malaria RDT product testing programme

- Among the RDTs that have been evaluated by the “WHO product testing programme”, WHO has selected for procurement tests on the basis of the following minimal performance criteria:
 - 1. Invalid rate less than 5%
 - 2. False positive rate less than 10%
 - 3. Detection rate:
 - 3.1. For RDTs targeting *P. falciparum* only:
 - Detection rate = 50% against samples of *P. falciparum* at 200 parasites/ μ l
 - 3.2. For RDTs targeting both *P. falciparum* and non-falciparum species:
 - Detection rate = 50% against samples of *P. falciparum* at 200 parasites/ μ l, and
 - Detection rate = 25% against samples of *P. vivax* at 200 parasites/ μ l



Malaria RDT product testing: interactive guide

- This interactive guide is designed to help select malaria RDTs with the specific performance characteristics required by national malaria control programmes, based on the results of the [WHO-FIND malaria RDT product testing programme](http://www.finddiagnostics.org/programs/malaria/find_activities/product_testing/malaria-rdt-product-testing/) Round 1 (2008) and Round 2 (2009).
- The interactive guide can be accessed at the following link :
http://www.finddiagnostics.org/programs/malaria/find_activities/product_testing/malaria-rdt-product-testing/



Quantification of RDTs

- General Guiding Principles
 - All suspected cases of malaria require confirmatory diagnosis
 - Take into account
 - the use of microscopic based diagnosis
 - the "scope and rate" of scale –up of malaria diagnosis
 - the effect of universal coverage with malaria control intervention



Treatment of Uncomplicated Falciparum Malaria

- Artemisinin-based combination therapies (ACTs) are the recommended treatments for uncomplicated falciparum malaria.
- ACTs should include at least 3 days of treatment with an artemisinin derivative
- The following ACTs options are recommended:
 - Artemether + lumefantrine; artesunate + amodiaquine; artesunate + mefloquine; artesunate + sulfadoxine-pyrimethamine; and dihydroartemisinin + piperazine .
- Second-line antimalarial treatment:
 - Alternative ACT known to be effective in the region;
 - Artesunate plus tetracycline or doxycycline or clindamycin.
 - Quinine plus tetracycline or doxycycline or clindamycin.



Treatment of severe malaria

- For adults, artesunate i.v. or i.m.
 - Quinine remains an acceptable alternative.
- For children (especially in the malaria endemic areas of Africa) the following options are recommended as there is insufficient evidence to recommend any of these antimalarial medicines over another:
 - artesunate i.v. or i.m.
 - quinine (i.v. infusion or divided i.m. injection)
 - artemether i.m.
- Give parenteral antimalarials for a minimum of 24hrs once started (irrespective of the patient's ability to tolerate oral medication earlier), and, thereafter, complete treatment by giving a complete course of:
 - an ACT
 - artesunate + clindamycin or doxycycline
 - quinine + clindamycin or doxycycline.



Special Groups

Pregnancy

- **First trimester:**
 - Quinine + clindamycin
 - An ACT is indicated only if this is the only treatment immediately available, or if treatment with quinine + clindamycin fails or compliance issues with a 7-day treatment.
- **Second and third trimesters:**
 - ACTs known to be effective in the country/region or artesunate + clindamycin or quinine + clindamycin



Special Groups

Lactating women

- Lactating women should receive standard antimalarial treatment (including ACTs) except for dapsone, primaquine and tetracyclines.

Infants and young children

- ACTs with attention to accurate dosing and ensuring

Travellers returning to non-endemic countries:

- atovaquone-proguanil
- Artemether +lumefantrine
- dihydroartemisinin + piperaquine
- quinine + doxycycline or clindamycin.

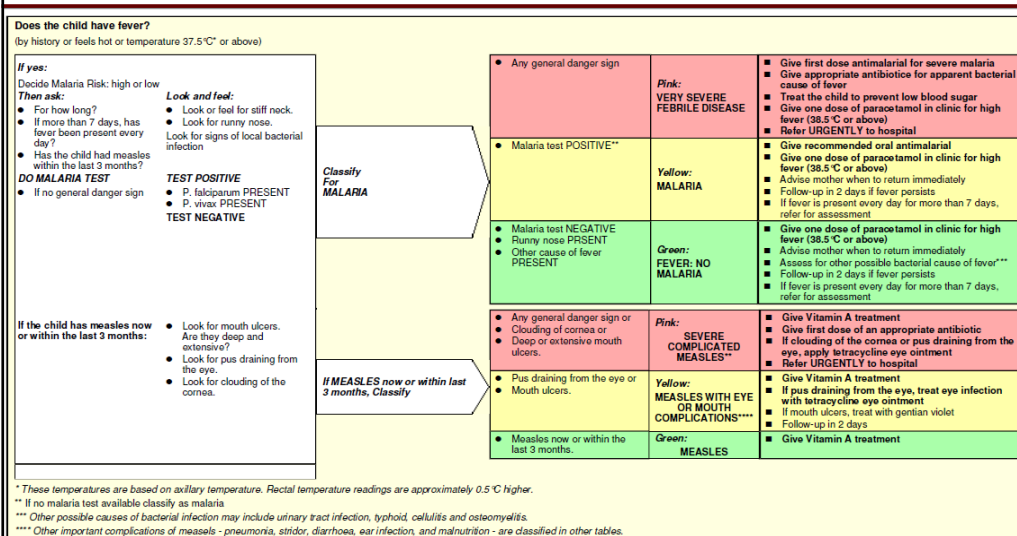


Treatment of vivax malaria

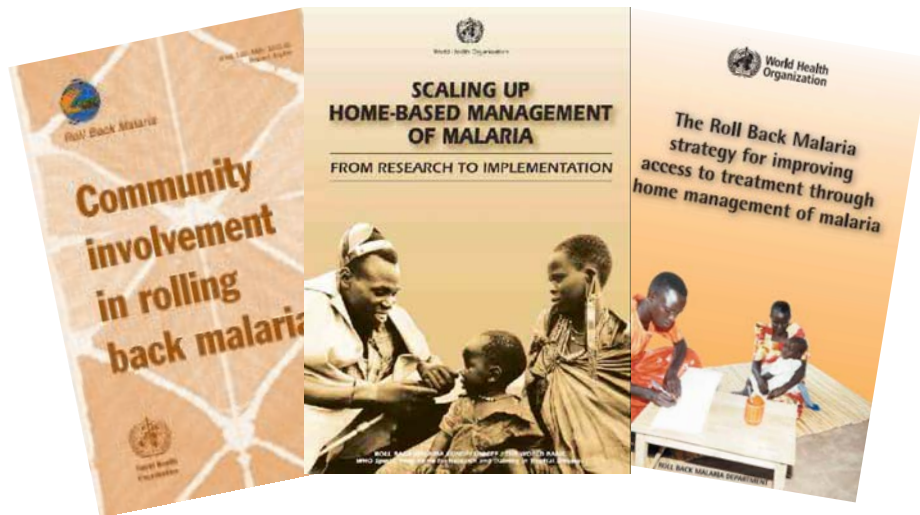
- Chloroquine combined with primaquine is the treatment of choice for chloroquine-sensitive infections.
- In areas with chloroquine resistant *P. vivax*, ACTs (except for artesunate + SP) is recommended for the treatment of *P. vivax* malaria
- At least a 14-day course of primaquine is required for the radical treatment (0.25 – 0.5mg/kg/day)
- In mild - moderate G6PD deficiency, primaquine 0.75 mg base/kg bw given once a week for 8 weeks.
- In severe cases, primaquine is contraindicated.



IMCI: Updated Algorithm



Community Case Management of Malaria (CCM Malaria)



CCM Malaria

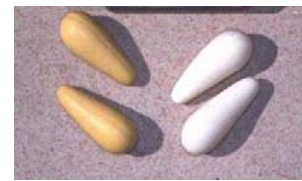
- WHO promotes CCM (*Home Management of Malaria*) as an approach for ensuring prompt and appropriate action for malaria at community level, given the fact that up to about 70% first get treatment at this level

Recommendation

- ACTs once introduced in the country, should also be implemented at community level.

What is in the Package for CCM malaria?...

- Trained community providers (CHWs, Medicine Sellers or Retailers) should be provided with:
 - ACTs for treatment of uncomplicated malaria.
 - Rectal artemisinin suppositories for pre-referral treatment of severe malaria.
 - Rapid diagnostic tests
 - Information, Education and Communication materials.
 - simple patient registers and reporting forms.



Support interventions for effective malaria case management

- Supply chain management
 - Quantification, stock management etc....
 - Medicines
 - Diagnostics
- Capacity development and training
- ASCM/BCC
- Quality Control / Assurance
- Pharmacovigilance
- M&E and disease surveillance
 - Treatment policy (implementation status and uptake)
 - Malaria disease trends
- Monitoring resistance of antimalarial medicines (therapeutic efficacy monitoring)



Malaria vector control and personal protection



Malaria Vector Control

- **Core interventions**
 - Long-Lasting Insecticidal Nets (LLINs)
 - Indoor Residual Spraying
- In the context of Integrated Vector Management, can be complemented based on local needs by
 - Larval control
 - Environmental management
- Insecticide susceptibility test (monitoring resistance to insecticides)



Insecticidal Treated Mosquito Nets (ITNs)



- Insecticide treated mosquito nets (LLINs)
- LLINs are effective for 3-5 years depending on type and condition of use
- LLINs can also work as a vector control tool and provide community protection when coverage is high enough (>80% in a target community)
- Pyrethroid resistance is a serious threat to LLIN and must be continuously monitored

LLIN considerations

- Campaigns (target is 1 net for 2 persons – rounding up in household with odd number of members) –implies for procurement : a ratio of 550 LLINs for 1000 population (~ 1 net for 1.8 persons) to meet the target of 1 net for 2
- Routine distribution of LLINs (one LLIN to every pregnant woman and newborn child) through ANC and EPI channels should be given equal priority to distribution via campaigns
- Education and communication materials (BCC /IEC) for effective uptake and usage

Indoor Residual Spraying (IRS)

- IRS is the application of long-acting chemical insecticides onto the walls, ceilings and eaves of houses and domestic animal shelters in order to reduce and interrupt malaria transmission.
 - Full potential obtained when all or at least 80% of premises in which malaria vectors are resting are effectively sprayed
 - IRS is **effective for months**: usually 3 to 6 months, or occasionally up to 9m, depending on the insecticide-used, the type of surface sprayed, and the seasonality of transmission.



Should IRS and LLINs be combined?

- Evidence available is limited but it suggests that there can be added protective benefit from such a combination, with the interventions acting independently and additively
- The benefits are likely to be greater when the combination extends coverage, that is, when one intervention reaches people not covered by the other.
- **Based on the principle of universal coverage, it will normally be appropriate to ensure that the entire risk population is adequately protected with one or other of the two interventions (i.e. to ensure that coverage gaps are filled) before the benefit of both interventions is given to a subset of the risk population.**



Should IRS and LLINs be combined?

- Though, it is not yet possible to recommend deployment of the combination as a **routine long-term and large-scale measure** due to limited data,
- it is possible to suggest some circumstances, and some specific roles within an overall strategy, for which deployment of the combination may be considered, with appropriate evaluation.



Malaria Vector Control

- **Core interventions**
 - Long-Lasting Insecticidal Nets (LLINs)
 - Indoor Residual Spraying
- In the context of Integrated Vector Management, can be complemented based on local needs by
 - Larval control
 - Environmental management
- **Insecticide susceptibility test (monitoring resistance to insecticides) and resistance management**



Malaria in Pregnancy



27 |



HWG Malaria Mock TRP, Dakar, 29 June 2010

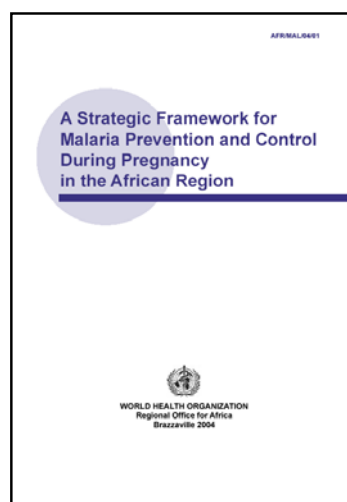
GLOBAL
MALARIA PROGRAMME



World Health
Organization

MIP CONTROL STRATEGIES FOR AFRO

1. Case management of malaria and anaemia
2. Insecticides treated nets (ITNs)
3. Intermittent preventive treatment (IPTp)



28 |



HWG Malaria Mock TRP, Dakar, 29 June 2010

GLOBAL
MALARIA PROGRAMME



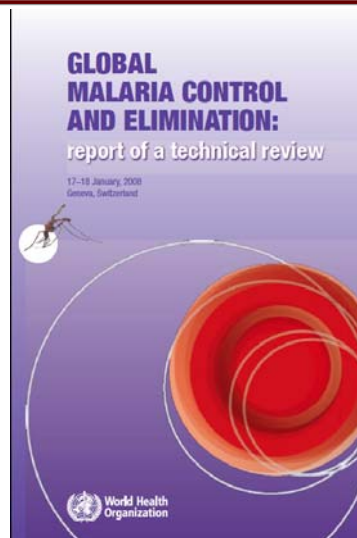
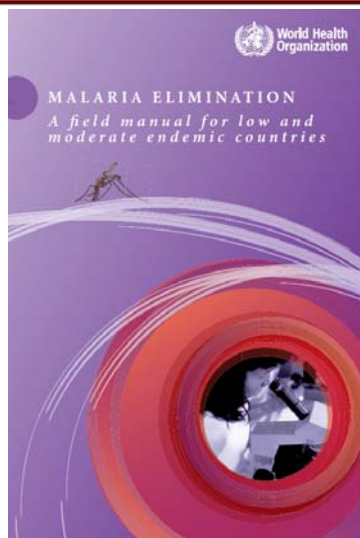
World Health
Organization

Intermittent Preventive Treatment

-"current evidence to date suggests that the benefits of IPTp (SP) outweighs the risks in countries in sub-Saharan Africa with stable transmission" – (WHO July '07)
- at least 2 doses of SP, given at the 1st and 2nd regularly scheduled ANC visit after "quickening".
- Contraindicated in HIV positive pregnant women who are on co-trimoxazole chemoprophylaxis



Malaria Elimination

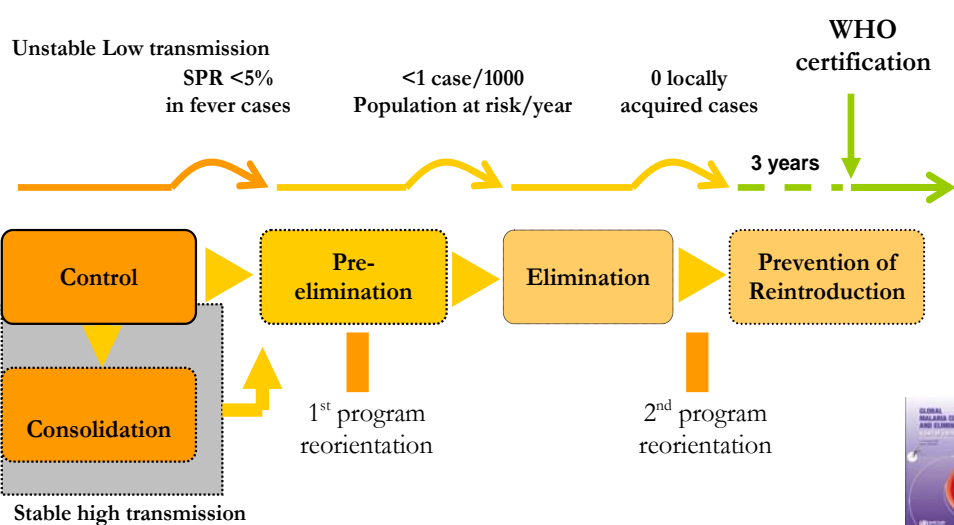


Malaria Elimination

- Malaria elimination is the complete interruption of local mosquito-borne transmission in a defined geographical area (smallest unit – country)
- After malaria elimination has been achieved, continued intervention measures are required for as long as the area remains receptive to resumption of transmission and exposed to importation of parasites from abroad.



Control to elimination continuum



Intermittent Preventive Treatment in Infants (IPTi)



IPTi Policy Recommendation

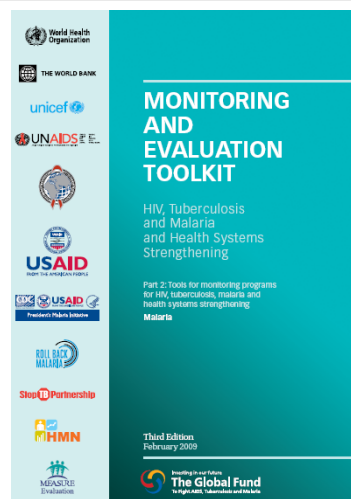
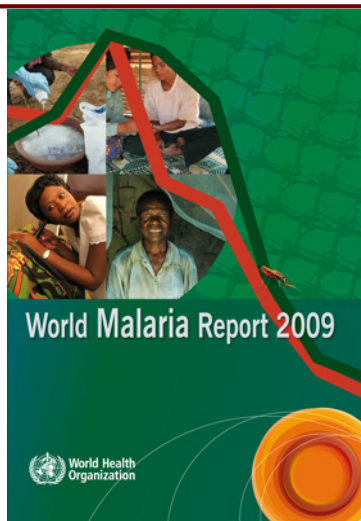
- **SP-IPTi delivered through EPI is recommended as an additional malaria control intervention in countries in Africa, south of the Sahara under the following specific conditions,**
 - In areas with moderate to high transmission (Annual Entomological Inoculation Rates [EIR] beyond 10).
 - When parasite resistance to SP in the area is not high. Defined as a prevalence of the *Pfdhps* 540 mutation (marker of the quintuple mutation) of $\leq 50\%$
- **In situations where a National-scale implementation may not be feasible due to varying levels of the *Pfdhps* 540 mutation, IPTi may be implemented at a Provincial or District scale, targeting areas with *Pfdhps* 540 mutation prevalence $\leq 50\%$.**



IPTi Policy Recommendation

- SP-IPTi should not be given to infants receiving a sulfa medication for treatment or prophylaxis, including co-trimoxazole (trimethoprim-sulfamethoxazole) which is used as a prophylactic against opportunistic infections in HIV-infected infants.
- Surveillance for drug safety must be strengthened with effective pharmaco-vigilance systems to monitor serious adverse reactions to SP
- Continuous surveillance of parasite resistance to SP must accompany the implementation of SP-IPTi as a surrogate measure of its efficacy.

Monitoring and Evaluation



Strengthening Routine Monitoring

Rationale is:

- **Tracking Costly commodities**
- **Rapid SUFI/Universal Coverage**
- **Need Malaria Baseline** (Cases, AC U5M)
- **Anticipate for Lower transmission**
- **Outputs for Proxy Outcomes**



Malaria surveillance

- Routine M&E and Surveillance data should be principal source of information in endemic countries at all levels to:
 - monitor burden and trends of malaria
 - evaluate impact of intervention
 - respond to increases in transmission
- Control and ultimately elimination of malaria requires timely and complete malaria surveillance at all levels of the health care system



Effective malaria control: Comprehensive package!

39 |  HWG Malaria Mock TRP, Dakar, 29 June 2010


GLOBAL MALARIA PROGRAMME  World Health Organization


Malaria Control Landscape

Pre-Scale up (pre-SUFI) Scale up for Impact (SUFI) Sustained Control Pre-elimination Elimination

Impact

Sustained Impact

40 |  HWG Malaria Mock TRP, Dakar, 29 June 2010

GLOBAL MALARIA PROGRAMME  World Health Organization