Proposal for an Evidence Review Group on MDA, MSAT and FSAT

Malaria Policy Advisory Committee Meeting
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Impact of MDA, MSAT and FSAT on malaria transmission

VECTOR

LARVAL CONTROL
larvae
uninfected
incubating
infected

ADULT VECTOR CONTROL
infected
incubating
uninfected

HUMAN

DIAGNOSIS & TREATMENT MSAT & FSAT
mass-drug administration

CONTROL OF MAN-VECTOR CONTACT

WHO 98123
Resilience of malaria transmission

The curves show probable growth of falciparum infection rates in epidemics assuming primary cases at time 0 (arrow) as 0.1 per cent of the population with falciparum infection, an incubation interval of 35 days, under the influence of different reproduction rates for malaria. (Adapted from the Bulletin of the World Health Organization, 1956, vol. 15:380)
Current WHO recommendations

MDA – mass treatment of all, or a large section, of the population whether symptoms are present or not

Based on the review of results of 19 MDA projects during the period 1932–1999 by von Seidlein and Greenwood \(^1\) and a Technical Consultation held in 2003 \(^2\), WHO concluded that there is little evidence that MDA is effective in reducing transmission although reduction in parasite prevalence and transient reduction in mortality and morbidity have been documented in some cases.


In 2010 a WHO consultation ³ reviewed the potential role of MDA in the context of artemisinin resistance in the Greater Mekong subregion based on evidence of impact of existing interventions, operational and modelling considerations. The consultation recommended immediate planning of a pilot MDA operation in western Cambodia or eastern Thailand and the collection of essential information on the safety and efficacy of the candidate drugs for MDA.

Current WHO recommendations

- The same consultation also reviewed the role of mass screening and treatment (MSAT/FSAT – people in a broad/defined geographic area are screened, regardless of whether they have symptoms of malaria, providing treatment for those who test positive).
- MSAT generates important information on the epidemiology of malaria that can be useful for further containment efforts, but it is resource-intensive and logistically challenging - lack of field-ready, high-throughput, highly sensitive diagnostic tests.
- FSAT operationally more feasible than MSAT, this is not delivered in all villages simultaneously, and, therefore, it is unlikely to contribute significantly in elimination efforts.
- The contribution of MSAT and FSAT effective in reducing transmission needs to be confirmed.
Background

- A recent systematic review \(^4\) of 32 studies assessed MDA in areas with different endemicity, with different medicines and dosages, different timings and number of rounds and concomitant implementation of vector control measures. The review concluded that MDA appears to quickly reduce malaria parasitaemia and several clinical outcomes, but more studies are required to assess its impact after 6 months, the barriers for community uptake and the potential contribution to the development of drug resistance.

A subsequent review of the literature, including unpublished studies, identified 12 MDA studies demonstrating zero indigenous malaria cases in the target population maintained over six months after the end of drug administration.

Over the last few years implementation research on MDA and FSAT have been conducted in Cambodia, and in other countries for which results are not yet in the public domain (e.g. FEMSE in Comoros, MDA in Zanzibar, MSAT in Zambia and MDA at Thai-Myanmar border).

Impact of T3, MDA and LLINs in Anjouan Island (Comoros)
Malaria reported cases: April 2010 – Dec 2013
1. Is there evidence of impact on malaria transmission at six month and one year following implementation of MDA, MSAT and FSAT?

2. What are the key determinants of "durable impact" on malaria of MDA, MSAT and FSAT?

3. What are the optimal conditions for application of MDA, MSAT and FSAT to reduce malaria transmission in terms of endemicity levels, combination of medicines and dosages, use of diagnostics, timings and number of MDA rounds, concomitant deployment of vector control interventions, IEC and pharmacovigilance?

4. What are the major limitations and challenges faced by multiple groups in the successful application of MDA, MSAT and FSAT to reduce malaria transmission?
5. What is the specific role of MDA, MSAT and FSAT in the advanced phase of malaria elimination?

6. What is the specific role of MDA, MSAT and FSAT for the elimination of artemisinin resistant falciparum malaria?

7. What are the main knowledge gaps and what data need to be collected to recommend wider deployment of MDA, MSAT and FSAT as part of initiatives to reduce malaria transmission?

8. Which of methodological aspects and ethical requirements need to be considered by research groups and national ethical review boards for planning and assessment of studies on the durable impact of MDA, MSAT and FSAT on malaria transmission?
Discussion points for MPAC

- Refine ERG questions to be addressed
- Systematic reviews, and recent unpublished studies to be reviewed
- Methodological aspects and timing of ERG (tentative: 8-10 December 2014)
- Investigators/programme managers to include as presenters and reviewers
- Co-Chairpersons (from MPAC members) and Rapporteurs
- AOB