Health workers’ compliance to Rapid Diagnostic Tests (RDTs) to guide malaria treatment: a systematic review and meta-analysis.
Alinune Kabaghe, Benjamin Visser, Kamija Phiri, Rene Spijker, Martin Grobusch, Michele van Vugt

Citation

Review question(s)
What is the proportion of malaria rapid diagnostic test-negative patients incorrectly prescribed antimalarial drugs in sub-Saharan Africa?

What factors are associated with compliance of health personnel to malaria treatment guidelines based on malaria rapid diagnostic test results?

Searches
The electronic databases Ovid Medline, Ovid Embase, Cochrane Central Register of Controlled Trials, Web of Science, African Index Medicus, African Journals Online (AJOL) will be used to identify studies. Bibliographies of relevant studies retrieved from the studies will be screened for additional publications. There will be no language restrictions. The search strategy will consist of free-text words and subject headings related to the subject.

Types of study to be included
There are no restrictions on types of study design. For inclusion the studies should report proportion of correctly treated patients by health personnel based on RDT results as a primary or secondary outcome. Studies which do not this information but report on factors associated compliance or impact of interventions on the outcome will be included for the secondary objective. Systematic reviews will be excluded

Condition or domain being studied
Quality of malaria case management by health personnel by assessing correct adherence to malaria Rapid Diagnostic Test (RDT) results.

Participants/ population
Suspected malaria patients presenting to health workers in sub-Saharan Africa.

Intervention(s), exposure(s)
Malaria Rapid Diagnostic Test (RDT) use. These RDTs are immunochromatographic test kits used to diagnose malaria infection in suspected patients by detecting either one of the following 3 antigens: either Plasmodium histidine-rich protein (HRP) 2 (pHRP-2) for Plasmodium falciparum, in combination, or without, a ‘pan-specific’ aldolase to detect other species, best P. vivax; or Plasmodium lactate dehydrogenase (LDH) variants (pLDH) or with clonality specific to the various Plasmodium species infecting humans. Studies where RDT are used for self-diagnosis, active case finding or screening of malaria in an asymptomatic people will be excluded.

Comparator(s)/ control
None

Context
The studies should have been conducted in sub-Saharan Africa with WHO recommended RDT kits, in any populations and by any health worker.
**Outcome(s)**

**Primary outcomes**
Inappropriate malaria treatment

Proportion of patients prescribed anti-malarial drugs despite a negative RDT result

**Secondary outcomes**
Factors associated with health workers’ compliance to malaria treatment guidelines based on malaria rapid diagnostic test results.

Impact of interventions aimed to increase health personnel compliance to malaria treatment guidelines outcomes.

Factors will be investigated from the primary outcomes where studies report an association with compliance. This will be described. We will also summarise interventions used to increase compliance to correct malaria treatment

**Data extraction, (selection and coding)**
Two reviewers (ANK and BJV) will independently screen the title and abstracts for inclusion. Discordances will be discussed between reviewers and where no consensus can be reached a third person (MVV) will make the final decision. These screened studies will subsequently be judged based on the full text by two reviewers (ANK, BJV) for inclusion in the review. The reviewers will use standardised electronic data extraction forms to record data from the full articles of the studies. The forms will record: author name, year article was published, place of study, malaria endemicity (where reported), study design, study population, number of participants, RDT antigen and/or brand used, health facility type, health worker cadre, proportion of correctly treated patients and proportion of incorrectly treated patients.

**Risk of bias (quality) assessment**
Risk of bias will be assessed using an adaptation of the Effective Practice and Organisation of Care (EPOC) risk of bias criteria, recommended by Cochrane (http://epoc.cochrane.org/epoc-specific-resources-review-authors) at study level.

**Strategy for data synthesis**
The compliance to malaria treatment outcome as proportions will be assessed for heterogeneity and a pooled analysis for an overall effect performed if applicable using Review Manager (RevMan 5.3).

A summary narrative of factors associated with health workers compliance to malaria rapid diagnostic test guidelines and impact of interventions to improve adherence will be written up.

**Analysis of subgroups or subsets**
Malaria endemicity, cadres of health workers; age of health workers, age of patients, patient clinical presentation will be analysed in sub-sets if applicable

**Dissemination plans**
Results will be submitted peer-reviewed international medical journal indexed by Medline. Oral and poster presentations will be made at Academic Medical Center-Netherlands, College of Medicine- Malawi and other research dissemination fora.

**Contact details for further information**
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Details of any existing review of the same topic by the same authors
Not applicable.

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Subject indexing assigned by CRD

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Any other information
Not applicable

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**PROSPERO**

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