Report on Malaria Consortium's COMDIS supported work on an evaluation of outpatient malaria case management practices in Uganda

Note: if the section is not applicable please write in the box 'not applicable'. If the information is not available please write 'no information'.
The word limits are a guideline. If you feel it's necessary to add fewer or more words, please do so.

Please also note that this information will be used in the public domain (for example in DFID published documents, on the website, for speeches, etc.). If you have any questions or need further information please contact Abigail Mulhall (a-mulhall@dfid.gov.uk).

1. Title of Research Project
Evaluation of out-patient malaria case management under the new Artemether-Lumefantrine policy in 4 areas of different malaria transmission intensities in Uganda.

2. Project No
XXXXX

3. Summary of success [250 words]
The COMDIS-supported study provided the Ministry of health (MoH) Uganda and its partners, with a snapshot view of health worker practices in managing cases of uncomplicated malaria following the change of the malaria treatment policy to artemisinin-based combination therapy (ACT). It is the only peer-reviewed study from Uganda that provides information on the performance of the policy implementation process at health facility level in terms of health worker training, diagnostic practices, treatment practices and availability of anti-malarials.

The diagnostic findings importantly have provided evidence of the need for the country to implement interventions to improve diagnosis of malaria including a change of the diagnostic policy from presumptive treatment or clinical diagnosis to parasitological-based diagnosis. This study is also one of the first to highlight the possibility of a reduction in malaria parasite prevalence at the study sites.

The study team has been able to publish two scientific papers in the Malaria Journal, titled "Malaria case-management under artemether-lumefantrine treatment policy in Uganda" published in 2008 and "Malaria misdiagnosis in Uganda – implications for policy change" published early 2009.

Finally this work was a successful scientific collaboration between Uganda's National Malaria Control Programme, the Kenya Medical Research Institute (KEMRI-Welcome trust) and Malaria Consortium.

4. "Killer" fact
Health workers in Uganda will prescribe available anti-malarials but the quality of malaria case management is adversely affected by malaria misdiagnosis.

5. Country
Uganda

6. Description of the project and main findings [250 words]

A cross-sectional, cluster sample survey was conducted in 2007 at all government and private-not-for profit (PNFP) health facilities in four districts purposively selected to represent diversity of malaria transmission in Uganda. Objectives of the study were:

- To assess artemether-lumefantrine (AL) case-management practices in accordance with national case-management guidelines
- To assess health-worker practices after the introduction of ACT in Uganda
- To assess the health facility characteristics after the introduction of AL for management of uncomplicated malaria.

The key findings highlighted include the following:

- Despite the lack of concurrent availability of all age-specific doses of artemether-lumefantrine (87%) and less than optimal coverage of training among health workers (79%), guidelines (68%) and AL wall charts (48%), the overall use of AL prevailed (60%) over non-effective anti-malarials, namely chloroquine (CQ), suphadoxine-pyrimethamine (SP) and CQ+SP combination therapies (18%), or effective, but not recommended therapies, such as quinine and other anti-malarial combinations (7%).
- Two main practices were discordant with national recommendations. Firstly, 20% of patients were still prescribed non-recommended anti-malarials, most commonly CQ+SP, and secondly, 16% of febrile patients were not treated at all for malaria.
- The specificity and positive predictive value (PPV) of policy recommendations were very low (27.4% and 30.5% respectively) across all age groups and transmission settings.
- Use of routine malaria microscopy was low, and interpretation and accuracy of results was poor.

7. Potential impact

The importance of uninterruptible availability of recommended anti-malarials as a key determinant of health worker treatment practices is demonstrated. The findings on diagnostic practices have contributed reliable information in support of the ongoing process of changing the policy on malaria diagnosis.

§ Who has benefited already and how? [100 words]

The primary beneficiary of the research work is the Uganda Ministry of Health (MoH), because information on what is practiced by health workers at health facilities following the introduction of a new medicine for malaria treatment was documented. The findings give some indication of the degree of translation and uptake of the policy, and suggests some reasons for positive and negative findings. As a result, the ministry can develop interventions to address the key findings using an evidence-based approach.

§ Who are the indirect beneficiaries?

These include the District Health authorities, health workers based at health facilities and patients who present to health facilities with a non-life threatening febrile illness. The work contributes growing evidence of the need for more focus on quality of care especially taking into consideration the diagnostic practices used to target treatment.

§ What is the actual or potential impact of the research? [100 words]

It has demonstrated that the implementation approach used to introduce the malaria treatment policy recommending AL as the first line medicine for uncomplicated malaria has resulted in high but not optimal translation and uptake at facility level. The evidence highlights the need to ensure the availability of the recommended medicine/s without interruption if policy is to be translated into practice. This should be the focus of the ministry and its partners during the consolidation phase.

The study provides evidence that presumptive treatment at the selected health facilities in Uganda is a highly sensitive (i.e. able to identify true cases of malaria among cases with features of febrile illness) but a very non-specific (i.e. not able to identify non-malaria cases among cases with features of febrile illness) strategy for management of malaria. The importance of this as a contributor to poor quality of care requires more attention to malaria case management as one of the tools in the package of interventions to reduce malaria morbidity and mortality. In this regard, guidance to national malaria control programmes from global technical agencies such as WHO is urgently required if locally generated evidence is to influence national treatment guidelines.

§ **Why is your research novel? [100 words]**

The novelty of our research lies mainly in:

- The fact that research was carried out in typical district settings, with minimal external interference in the health worker practices at the health facility.
- It was conducted at all government and private not for profit health facilities in the study districts.
- The study was designed and conducted in collaboration with the national malaria control programme.
- Research findings were disseminated at an opportune time to stakeholders and have contributed to the ongoing progress of policy change.

§ **What made your research successful? [100 words]**

Success of the study greatly depended on:

- Involvement of the ministry of health and district officials in designing and carrying out the research
- Collaboration with other institutions like the Kenya Medical Research Institute (KEMRI-Wellcome-trust team) with extensive experience in this kind of work in other countries.
- Data collection was by research assistants who were trained on the tools and procedures by the study investigators
- The work was coordinated by a researcher who exercised discipline and hardwork, and provide effective leadership to the field teams.
- The field work was informed by up-to-date information from district health officials and thoroughly planned by the investigators.

8. Human interest [250 words]

What is the human interest element of your research? Please provide direct quote(s) from different stakeholders about the research successes. If available please provide anecdotes or scripts from interviews with beneficiaries of the research (add as an annex to this form)

No information

9. Names and countries of the Research Institute(s) and Organisations (s)

1) Malaria Consortium - Uganda
2) Ministry of Health - Uganda
3) Malaria Public Health and Epidemiology Group, KEMRI/Wellcome Trust Research Programme - Kenya

10. Lead Researchers Names and Organisations

1) James K Tibenderana - Malaria Consortium
2) Joan Nankabirwa - Malaria Consortium
3) Dejan Zurovac - KEMRI/Wellcome Trust

4) Robert W Snow - KEMRI/Wellcome Trust
5) James Ssekitooleko – Uganda Malaria Research Centre, MoH-Uganda
6) John B Rwakimari – National Malaria Control Programme, MoH-Uganda
7) Ambrose Talisuna – MoH-Uganda

11. DFID involvement

DFID in 2005 provided support to the MoH-Uganda through Malaria Consortium (project number) to change the malaria treatment policy to one based on ACT. Additionally through the COMDIS project, which is a research programme consortium funded by DFID, Malaria Consortium carried out this evaluation.

§ **Research programme**

XXXX

§ **Dates**

Start: January 2007 End: March 2008

§ **Financial spend to date** **The amount DFID has already spent on the research**

XXXX

§ **Future financial commitment** **The total amount committed by DFID to the research.**

§ **Follow-on project** Does the work build-on previous research work funded by DFID? If yes, please provide details (project title and number)

§ **Name and extension no. of CRD contact person** Leave blank

§ **Name and extension no. of RM or Advisor** Leave blank

12. Photographs

Not applicable

13. Further information

The publications quoted are:

"Malaria case-management under artemether-lumefantrine treatment policy in Uganda" published in Malaria Journal- 2008, 7:181

"Malaria misdiagnosis in Uganda – implications for policy change" published early 2009 published in Malaria Journal 2009, 8:66