

Community Case Management of Malaria in Afghanistan

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Improving coverage and accuracy of malaria treatment in South and West Asia will depend on **universal access to parasite-based malaria diagnostics**. Outside most of Africa, these tests need to differentiate non-malarial causes of fever from *Plasmodium vivax* and *P. falciparum*. The aim is to use malaria rapid diagnostic tests (RDTs) to eliminate reliance on symptoms for diagnosis, and improve access to appropriate treatment for common causes of febrile illness including the use of ACT for falciparum malaria and appropriate treatment for pneumonia and diarrhoeal diseases.

Community health workers (CHWs) are important providers of healthcare – **in Afghanistan there are around 16,000 CHWs in malaria endemic areas**. In line with current recommendations for universal access to malaria testing, we conducted a cluster randomised trial of RDTs among CHWs.

STUDY DESIGN

22 clinics in a low and moderate transmission area were randomised to intervention or control arms. Within the national CHW system, all CHWs working under each clinic were provided with **two days of training on community case management of malaria**. In the 11 randomly assigned intervention clinics, an additional **one day module on use of RDTs** was conducted and all CHWs were provided with RDTs.

CHWs collected data on a semi-pictorial **case record form** (figure) to record patient details (age, sex), description of symptoms, diagnosis, treatment and referral. In the intervention arm, CHWs used an RDT and noted the result on the form. The primary outcome of the trial was **“the proportion of patients appropriately treated with antimalarial drugs** – defined as a patient without malaria receiving no antimalarial drug, those with *P. falciparum* (Pf) receiving an ACT and those with *P. vivax* (Pv) receiving chloroquine”. Malaria status was confirmed in each patient using PCR.

The form is titled 'ACT: CHW Patient Tracking Form' and includes the following sections:

- Patient Details:** Patient ID: cNBA/01/001. Gender: Male, Female, Pregnant. Age: Baby, Infant, Child, Teen, Adult. Sex: Boy, Girl, Unk.
- Consultation Details:** Day: Sun, Mon, Tue, Wed, Thur, Fri, Sat. Time: Morning, Afternoon, Evening, Night. Place: Health-post, Patient's house, Other.
- Symptoms:** Fever, Headache, Vomiting, Diarrhoea, Cough, Other.
- Danger Signs:** RR < 40, RR > 40.
- Diagnosis:** RDT Not Used, Stock Out, RDT Result (Malaria, No Malaria).
- Action Taken:** Not Referred, Referred (To Clinic, To Pharmacy).
- Treatment:** No Treatment, Stock Out, CHW Treatment, Self Treatment.
- Treated with:** CO, SP, Act, Para/mol, Co-trimox, ORS.
- Medication:** Half Tablet, Full Tablet, SP/AS Blieter Pack.
- Patient Samples:** Filter Paper, Patient Identifiers, Patient Fingerprint, CHW Signature.

Primary Objective: Assess the effectiveness of deployment of RDT by Community Health Workers for improving access and targeting of antimalarial drugs in Afghanistan, using a cluster randomised intervention study in two phases.

Secondary Objectives:

- Assess the current role of Community Health Workers in the treatment of fever (as defined by the CHW).
- Assess the effect of RDT implementation amongst community health workers on accuracy and timing of treatment in patients presenting with fever.
- Assess the effect of RDTs on the treatment of children presenting with fever at community level.
- Assess a package of interventions that aims to improve treatment targeting by community health workers.

PRELIMINARY FINDINGS

2400 patients were enrolled by 380 community health workers.

In the **control arm, only 17.5% (185/1201) were appropriately treated with antimalarials vs. 75.3% in the intervention RDT arm**.

More malaria positive patients received antimalarials in the control arm, but prescription was so common that 87% of those with no malaria were also treated – low specificity.

Only 35% (14/40) Pf cases received an ACT in the intervention arm and this was even lower in the control arm: 14% (6/43).

67.2% of malaria negative patients received cotrimoxazole in the RDT arm, compared to 35% in the control arm.

More patients in the intervention arm were referred to a clinic: 33.0% vs. 25.3%.

Compliance with RDT results for malaria treatment was 81%, and 98.4% of RDTs were accurately interpreted by CHWs when double read by trained study staff.

IMPLICATIONS – subject to finalised analysis

- Community health workers represent an important opportunity to improve access to life-saving interventions by providing consultations and treatment for febrile illnesses.
- **CHWs are able to use RDTs to reduce over treatment** with antimalarial drugs, but there are also changes in referral practices and in prescription of cotrimoxazole.
- **RDTs improved treatment** of falciparum malaria with ACTs, but few patients received ACT prior to referral.
- **Key challenges** in implementation will include: providing clear, evidence-based guidelines for diagnosis, treatment, referral and use of antibiotics; ensuring a continuous supply of quality assured RDTs and appropriate drugs; and taking account of rapid turnover of CHWs within the health system.