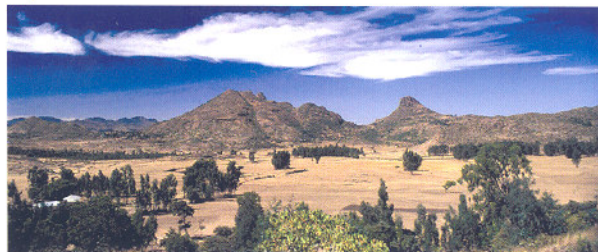




Community deployment of Coartem[®] in Tigray, Northern Ethiopia

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Tigray, most northern region of Ethiopia (~80,000 km²)

Tigray is a region of unstable malaria transmission, hypoendemic with *P. falciparum* (~60%) & *P. vivax* (~40%).

Coartem[®] became first-line treatment in Ethiopia in 2004, but was only available in health facilities, which limited access. In May-October 2005, a major malaria epidemic occurred.



Aim of study

To assess the impact of Coartem[®] deployment at community level, combined with phased introduction of rapid diagnostic tests (RDTs), on malaria morbidity, malaria-specific mortality and health service utilisation in a resource-constrained rural setting (2005-2007).

Key findings

Community deployment of Coartem[®] in a hard-to-reach rural population:

- Decreased malaria transmission (Figure 1)
- Lowered the malaria patient case load in peripheral health facilities, even during the epidemic
 - 58% of suspected malaria cases managed by Community Health Workers (CHWs)
- Reduced malaria mortality by ~40% during a major malaria epidemic (Figure 2)
- Increased access to effective treatment

Use of RDTs by CHWs:

- Allowed exclusion of patients with non-*P. falciparum* malaria in approximately 90% of cases at community level (all others assumed *P. vivax*)
- Reduced burden on healthcare facilities
- More effective use of resources with Coartem[®] given only to patients diagnosed positive for *P. falciparum* by RDT

Study design and methods

- 2-year study (2005-2007), 208,070 individuals
- 4 serial malaria prevalence surveys (April & September)
- 2 mortality surveys
- Mortality was assessed using Poisson regression models of incidence rate ratios, including adjustment for a range of variables e.g. age/sex, bed-net use, urban/rural area

Deployment of RDTs versus non-RDT management

- In July 2006, 16 CHWs received 3-day training on use of RDT (Paracheck[®] pf)
- Coartem[®] was given only to patients diagnosed positive for *P. falciparum* by RDT
- All patients testing negative on RDT were assumed to have *P. vivax* malaria and received chloroquine
- The remaining 17 CHWs in the intervention district without RDTs continued to treat all suspected malaria patients with Coartem[®]

Acknowledgements

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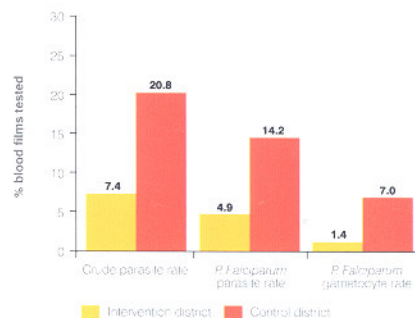


Figure 1: Malaria parasite reservoir 3-fold lower in the intervention district during 2005 high-transmission season

	Intervention district (Alamata)	Control district (Raya Azebo)
Total population	89,377	118,693
Number of deaths	991	1,106
Number of deaths due to malaria*	24	53
Deaths due to malaria / 1,000 population	0.27	0.45

*Based on verbal autopsy interviews

Figure 2: Lower rate of observed malaria-related mortality during epidemic with Coartem[®] deployment by CHWs in the intervention district

	Adjusted IRR	95% CL	P
Adjusted mortality			
Intervention district	1.03	0.87, 1.21	0.751
Control district	Reference	-	-
Adjusted Malaria-specific mortality			
Intervention district	0.60	0.40, 0.90	0.013
Control district	Reference	-	-

Figure 3: The Tigray Project: Study design

