Referral from community health workers: evidence from cluster randomised trials of mRDTs in two malaria transmission settings in Uganda

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Introduction

Malaria endemic countries have scaled-up community health worker (CHW) interventions to increase access to malaria testing and treatment to vulnerable communities with limited access to public health systems.

There is limited evidence on the referral practices of CHWs and caretaker's compliance to referral advice and the global research agenda on integrated community case management (iCCM) has prioritised the need for evidence on the referral processes from CHWs.

The aim of this analysis was to evaluate the impact of a CHW-intervention on rates of referral and caretaker compliance to referral, in South Western Uganda

Methods

Study Context

A cluster-randomised trial to examine the impact of mRDT use by (CHWs), compared with presumptive treatment of fever.

A total of 120 villages (3 CHWs per village) were randomised to use mRDTs (intervention) or a presumptive diagnosis of malaria (control), most of the 379 CHW were female.

All CHWs were trained over 3-4 days
1) Prescribe ACTs, rectal artesunate and pre-referral treatment
2) Severe and non-severe signs of illness requiring referral to the health facility.

CHW's reasons for referral and children's compliance to referral were recorded on treatment registers through record linkage between the CHW and the health facility.

Intervention design

Fig 1. CHW's treatment flow charts for mRDT arm (left) and presumptive arm (right)

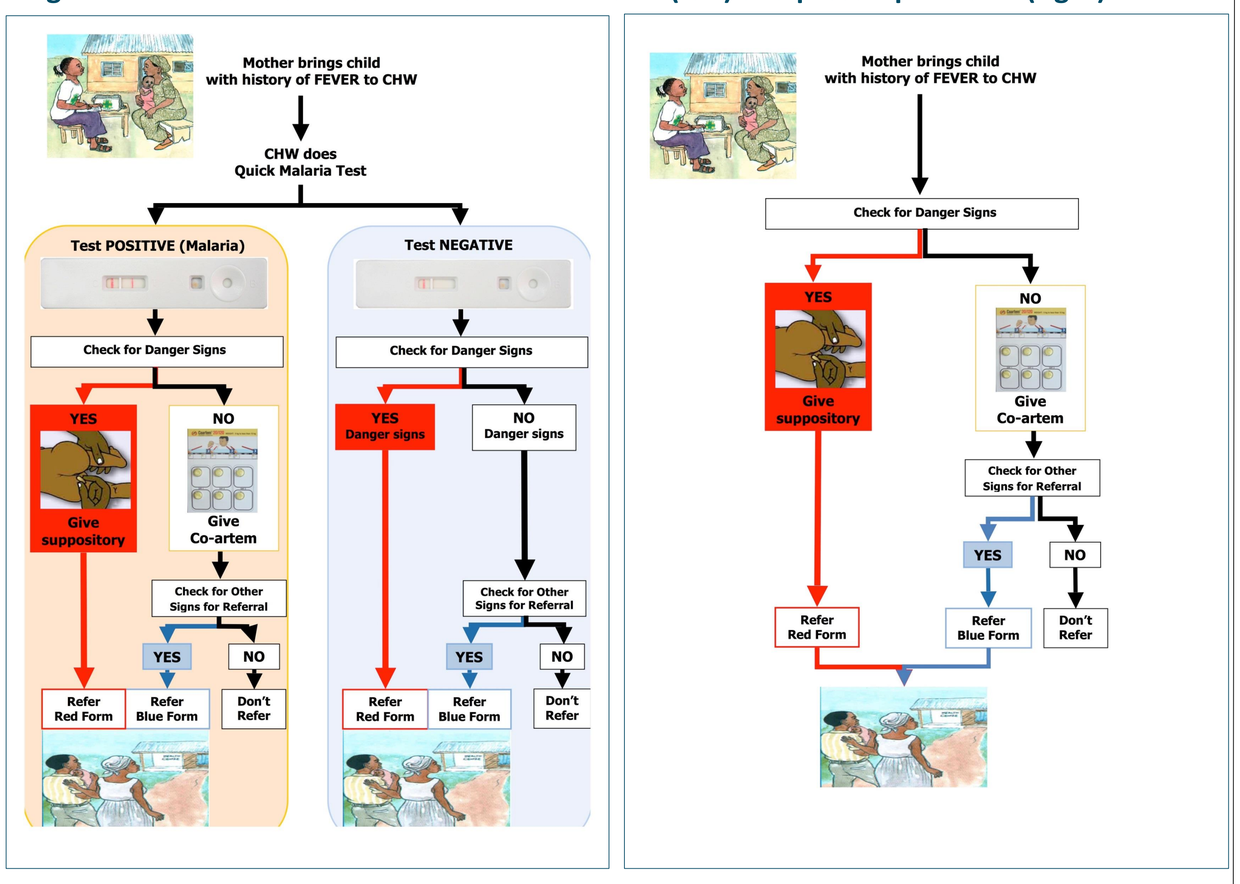


Fig 2. Signs for referral

Severe	Non-severe
Convulsions	Wounds/burns
Coma	Skin abscess
Very hot ≥38.5^{O}C	Ear infection
Very cold <35.0^{O}C	Sticky or red eyes
Vomiting	Blood in urine
Unable to eat/drink	Vomiting & diarrhoea
Severe anaemia	Frequent urination
Difficulty breathing	Painful swellings

Results

Table 1. Percentage of referrals made each transmission setting and trial arm

	Moderate-to-high transmission		Low transmission	
	Presumptive arm	mRDT arm	Presumptive arm	mRDT arm
Total consults	10625	7872	2444	1207
Total referrals	**109 (1%)**	**2706 (35%)**	**314 (13%)**	**821 (70%)**
Severe referral	*75%*	*41%*	*32%*	*44%*
Non-severe referral	*25%*	*59%*	*68%*	*56%*

Fig 3. Proportion of children referred, moderate-to-high transmission setting

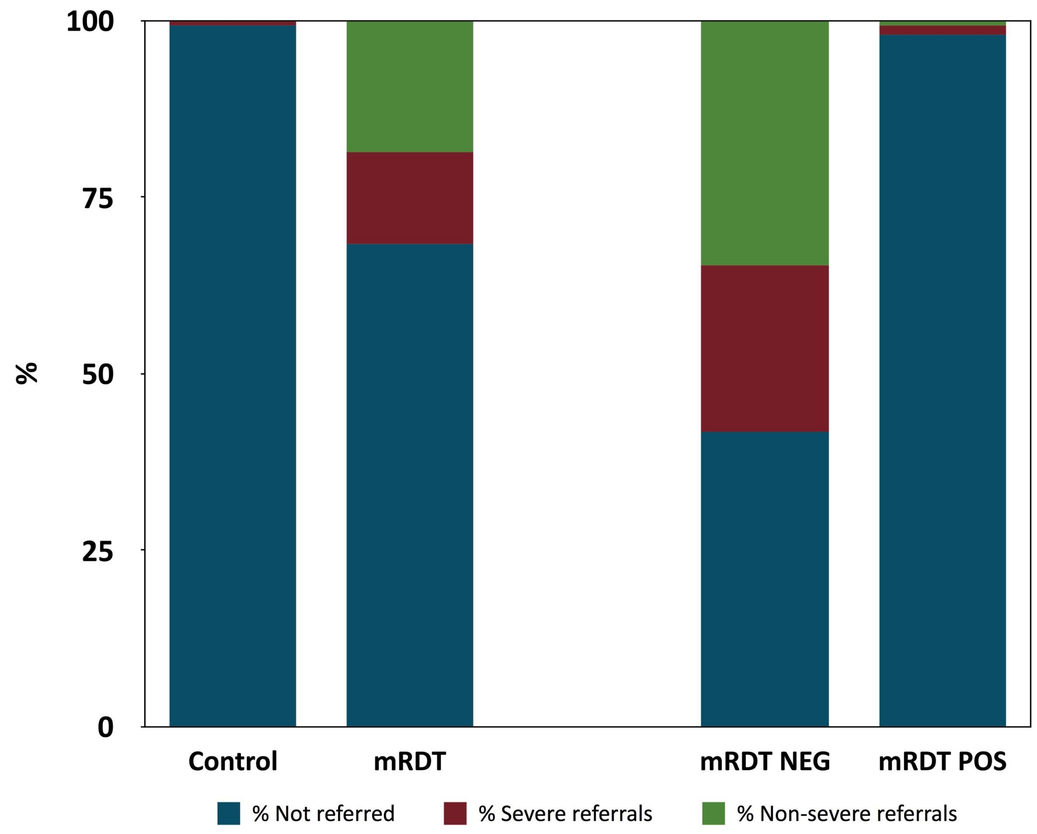
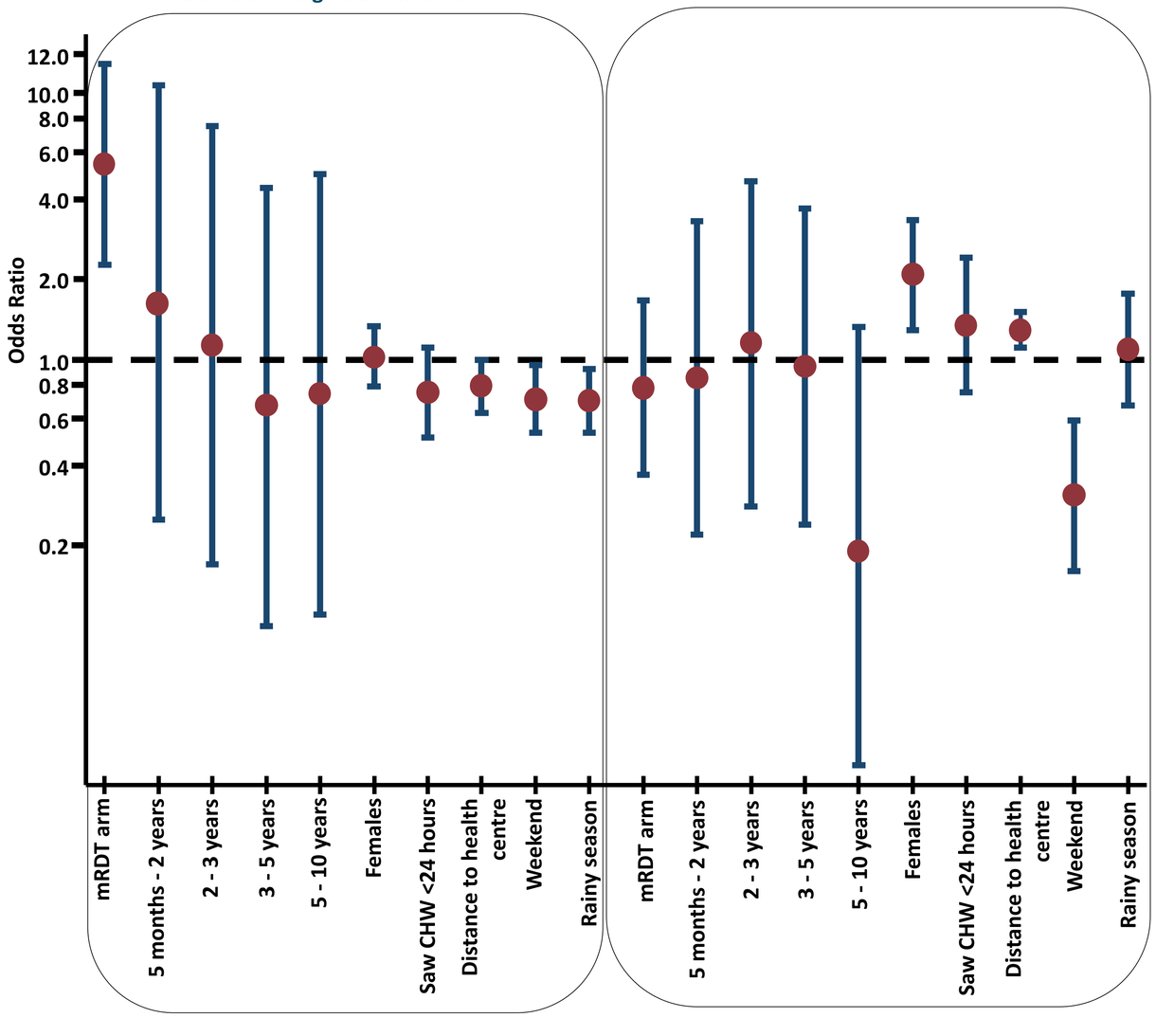


Table 2. Caretaker's compliance to referral advice in each transmission setting and trial

	Moderate-to-high transmission		Low transmission	
	Presumptive arm	mRDT arm	Presumptive arm	mRDT arm
Total referrals	109	2706	314	821
Total complied with CHW's referral advice	**2%**	**10%**	**10%**	**10%**

Fig 4. Multivariable odds ratio plot: Factors associated with caretaker's referral compliance



Summary of findings

- Malaria rapid diagnostic tests increase CHW's referral rates compared to a presumptive diagnosis, in both transmission settings.
- Most referrals were for non-severe signs of disease and mRDT negative children were more often referred compared to positive children.
- Compliance to referral was low in both settings. However, higher in the mRDT arm compared to the presumptive arm, in the moderate-to-high transmission setting.
- Often Children referred during the weekend, rainy seasons and those living further away from health centres were less likely to comply with referral advice

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