Introduction

Community based malaria treatment programmes increase access to effective antimalarials beyond the reach of public health facilities. Despite their success in improving access to malaria treatment there is limited evidence on the referral of sick children beyond the skills of community medicine distributors (CMDs).

We examined referral within the context of a cluster-randomised control led trial to evaluate the impact of RDTs used by CMDs compared with presumptive treatment, in two settings of high and low malaria transmission in rural Uganda.

Trial design

A cluster-randomised trial to examine the impact of RDT use by community medicine distributors (CMDs), compared with presumptive treatment of fever.

A total of 120 villages (379 CMDs) were randomised to use RDTs (intervention) or a presumptive diagnosis of malaria (control). All CMDs were trained on how to give antimalarial treatment with ACTs, rectal artesunate pre-referral treatment and the severe and non-severe signs of illness requiring referral to the health facility. Reasons for referral from CMDs and patient compliance to referral were captured from CMD treatment registers.

Trial was conducted in two sites within the same district: a highland area of low transmission and a lower-lying area of high perennial transmission. It aimed to evaluate the impact of RDT diagnostic testing by CMDs on proportion of children under five years with fever who receive appropriate ACT treatment consistent with a blood slide result.

Design of the intervention

Community Sensitisation to change in diagnostic policy Community engagement: Selection of CMDs Training of CMDs (included communication skills & role play)

CMDs Diagnosis and appropriate ACT treatment by CMDs

Health facility

RCT-positive malaria Severe malaria RDT-negative fevers

ACT Rectal artesunate and REFER

No ACT and REFER

Selection and training of CMDs

Participatory training workshops (3-4 days)

Small group sessions including practice and role play

- Rationale for change to diagnostic testing for malaria
- How to perform and interpret an RDT: 1-day training based on WHO manual (CMDs in RDT arm only)
- Clinical management and referral guidelines
- Identify severe signs of referral requiring referral
- Identify other signs of referral requiring referral
- Communication skills to support CMD to broker change with community/manage expectations

Objectives of referral study:

- Investigate the consequences of diagnostic testing at community level on :
  - Referral rates
  - Referral completion
  - Factors affecting referral

Preliminary results

Results are presented for the 12-month period January - December 2011, after the end of close support supervision.

Table 1. Overall Referral Rate by CMDs:

<table>
<thead>
<tr>
<th></th>
<th>High Transmission</th>
<th>Low Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RDT</td>
<td>CONTROL</td>
</tr>
<tr>
<td>Number recruited</td>
<td>57/15</td>
<td>7320</td>
</tr>
<tr>
<td>Number treated with ACT (%)</td>
<td>2482 (44)</td>
<td>7231 (98)</td>
</tr>
<tr>
<td>Number referred</td>
<td>2605</td>
<td>91</td>
</tr>
<tr>
<td>% Referred</td>
<td>35%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 2. Referral Completion by patients:

<table>
<thead>
<tr>
<th></th>
<th>High Transmission</th>
<th>Low Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RDT</td>
<td>CONTROL</td>
</tr>
<tr>
<td>Number referred</td>
<td>2605</td>
<td>91</td>
</tr>
<tr>
<td>Number completing referral</td>
<td>260</td>
<td>2</td>
</tr>
<tr>
<td>% Referral completed</td>
<td>13%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Figure 1. Referral Rate by Month:

- Overall, in both settings referral by CMDs was higher in the RDT arms compared to the control arms.
- Referral rates appeared to decline over time in the RDT arm in the high transmission setting.
- However in terms of referral completion by patients, children seen in the RDT arm in the high transmission setting were more likely to complete referral than children in the control arm,
- Referral completion in the low transmission setting did not differ between arms.
- In all arms Referral completion was poor, with less than 15% of all children completing referral.