

Malaria in the private retail sector

Can use of rapid diagnostic tests in drug shops improve treatment of patients?



Woman sells medicines in registered drug shop

Up to 80% of malaria cases in Uganda are treated in the private retail sector.

In this study, researchers introduced malaria rapid diagnostic tests (RDTs) in registered drug shops to improve the targeting of Artemisinin-based Combination Treatment (ACTs), the recommended treatment for malaria.

Results showed that the tests were popular and vendors usually treated patients according to the test results, targeting ACTs to those with malaria, and reducing the over prescription of these medicines by over 70%.

However, the tests are not a simple fix in the private retail sector and could give patients a false reassurance about vendors' other skills and services.

Why is malaria testing in the private sector important?

- The World Health Organization (WHO) recommends universal access to parasitological diagnosis from all treatment providers – including the private sector.
- In Uganda, self-treatment of fevers with antimalarial drugs bought in shops is common. Up to 80% of malaria cases are treated in private clinics and shops.
- There has been a rapid increase in the use of RDTs in public health facilities in many countries. However, their introduction into the private retail sector has been slower and there is limited evidence on their operationalisation through vendors.
- Introducing RDTs alongside national mechanisms to subsidise ACTs in the private sector may help to target antimalarials to those who need them most and minimise drug wastage.

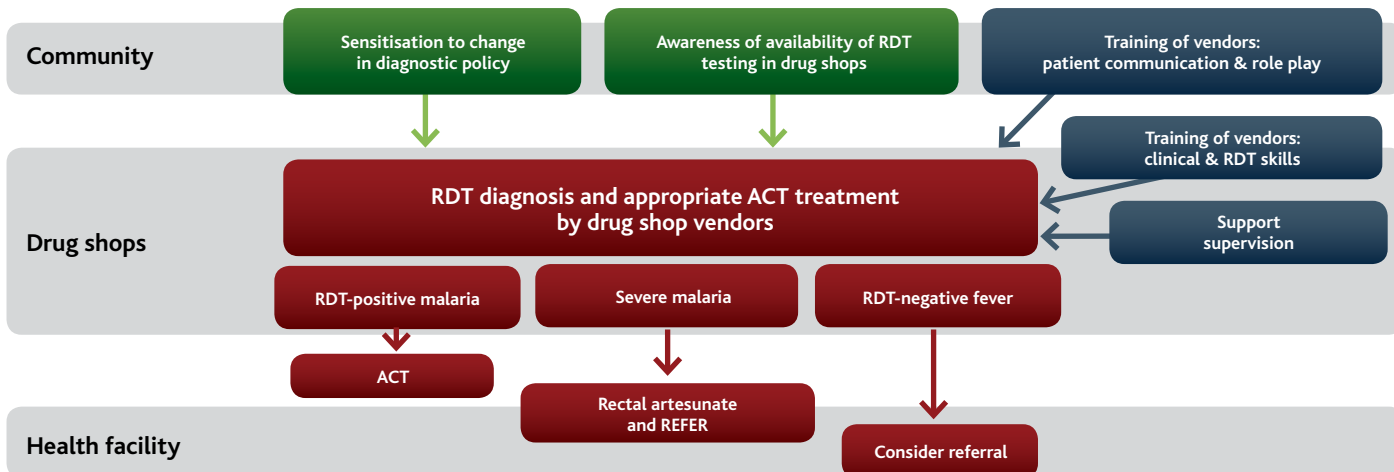
The Study

What: A cluster-randomised trial in 65 drug shops across 20 geographical clusters, divided randomly into two groups.

Where: Mukono District, Uganda

Why: What is the impact of training drug shop vendors to use RDTs on how malaria is treated? And what is the impact on referral of patients with a fever not caused by malaria?

How:



- 1 Drug shop vendors in the RDT group received training on the use of RDTs for malaria diagnosis and to prescribe malaria treatment only if the test was positive. Vendors were also trained to look for clinical signs of other illnesses and refer if needed.
- 2 The training aimed to improve the clinical and diagnostic skills of drug shop vendors, as well as communication with patients.
- 3 There were also campaigns to make communities aware of the changes in malaria diagnosis.



Roadside sign provides direction to a drug shop trained to perform a malaria test

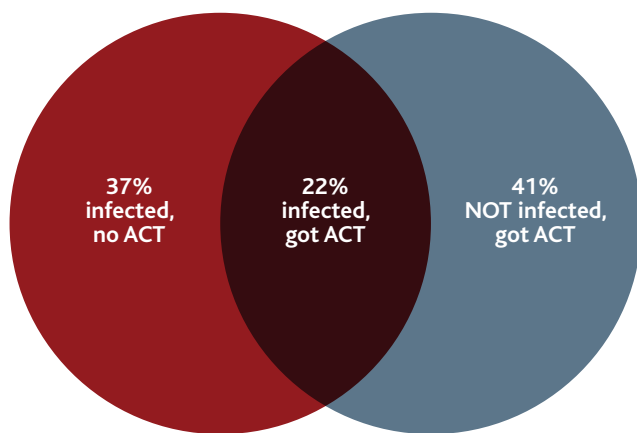
What did the intervention include?	RDT group	Control group
3-4 day training workshops		
Reasons for policy change to RDT testing before malaria treatment	✓	
How to perform and interpret an RDT	✓	
What to do for patients who have a negative RDT result	✓	
How to treat a patient with malaria	✓	✓
How to recognise a child with signs of severe illness, and when to refer	✓	✓
How to recognise a child with fevers caused by other illnesses, and when to consider referral	✓	✓
Role play and communication skills	✓	✓
Supporting interventions in trained drug shops		
Roadside sign to advertise availability of testing	✓	
RDTs for sale to patients at subsidised price (0.20 US\$)	✓	
ACTs for sale to patients at subsidised price (0.40-1.20 US\$ depending on age)	✓	✓
Training certificate and price lists with Ministry of Health logo	✓	✓
Pictorial job aids	✓	✓
Close support supervision after training – only for first 2 months	✓	✓
Supporting interventions in the community		
Information campaigns about RDTs in surrounding communities	✓	✓

To assess the effect of the RDT intervention, the use of ACTs and referral practices amongst drug shop vendors in the RDT group were compared with vendors in the control group, who were trained to diagnose and treat malaria based on signs and symptoms alone.

What did we find?

- Over 15,000 clients were seen by drug shop vendors during 2011. The vast majority (98%) of clients in drug shops accepted to purchase a test and were tested prior to treatment – 58% of whom had a positive result.
- More than 85% of drug shop vendors complied with RDT results, reducing overprescription of ACTs by over 70%.
- Fewer clients (61%) in shops using RDTs received an ACT compared to 99% in shops using symptom-based diagnosis only, reducing the number of ACT treatments sold by 38%.
- ACT treatment was more accurately targeted in drug shops where RDTs were used: 73% of ACT treatments given were appropriate for patient's malaria infection status, compared with 34% in drug shops using presumptive diagnosis ($p < 0.001$).

ACT treatment before introduction of subsidised ACTs and drug shop vendor training:



How was targeting measured?

We collected an additional blood sample from patients at the time of drug shop consultation, in order to determine later through microscopy if the patient was infected with malaria parasites.

This allowed us to assess whether the use of RDTs improved targeting of ACTs to patients with malaria, and reduced overuse of these medicines.

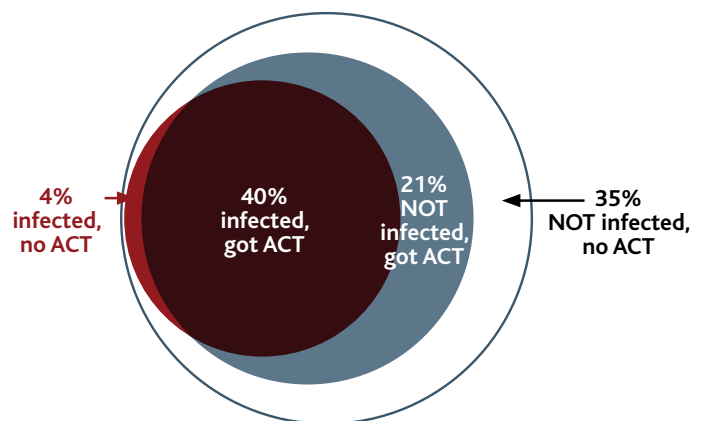
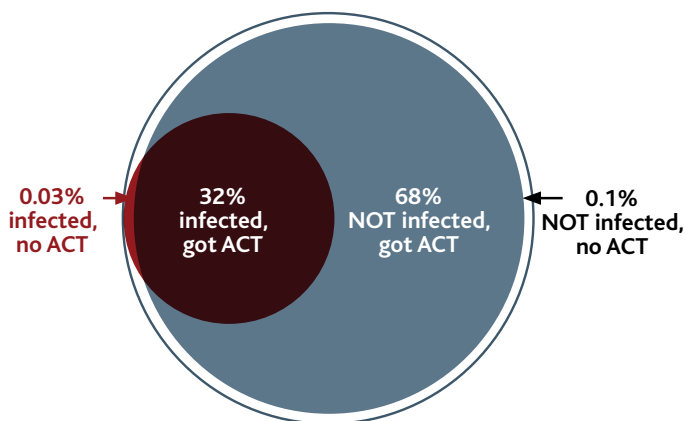
We examined treatments given in drug shops where vendors had been trained to use RDTs in relation to patient's malaria infection status, and compared them with treatments given in drug shops where vendors continued to diagnose malaria based on symptoms alone.



ACT treatment after introduction of subsidised ACTs and drug shop vendor training:

a) Control group: Treatment decisions by vendors using diagnosis based on symptoms alone

b) RDT group: Treatment decisions by vendors using malaria RDTs



What did participants think?

A qualitative evaluation conducted alongside the trial found:

- Patients were pleased that diagnosis was available in drug shops, and felt reassured by the training and supervision of providers with otherwise uncertain credentials.
- Vendors welcomed the opportunity to demonstrate a new skill and status more akin to a qualified health worker.
- Together, the views of drug shop vendors and patients revealed that the intervention had a profound effect on how drug shops were perceived and used, highlighting the need to consider wider effects of RDT training interventions in the private sector.



Patient being tested using malaria rapid diagnostic test

Its not that we studied much but the patients themselves know that we are real health workers, they no longer know us as people only selling drugs. Now they know that we also test what... even blood

So for us we no longer accept to have our children given treatment before having their blood taken off, because I see now that it is very cheap

Now what has mostly made me happy, [is] that follow up that the Ministry of Health has been doing. [It] has so much helped to remove the other thing of "I have the experience on panadol, let me go and start up a drug shop"..... That one has so much changed in our drug shops these days. The health worker [DSV] gives you drugs after understanding what the child is suffering from, and the child gets well

Key learnings

From the project

- RDTs are likely to be popular in the private retail sector
- Clients are willing to buy RDTs at subsidised prices, and trained drug shop vendors can use RDTs and comply with results
- RDT training in drug shops can improve the targeting of ACTs to malaria patients, and reduce overuse of these valuable antimalarials
- Training to perform tests can also change the reputation of drug shops
- RDTs are likely to be financially viable for drug shops: profit from enhanced reputation, increased clientele and sale of other medicines to RDT negative clients
- Referral from drug shops is uncommon and faces multiple challenges

For programme managers

- It is feasible to collaborate with the private retail sector to improve malaria diagnosis and treatment
- There may be multiple benefits to drug shop vendors in being part of an RDT training programme
- Visible government involvement may help promote compliance with guidelines
- Introduction of RDTs could increase the popularity of drug shops and affect where patients seek care
- RDT use may give a false impression of vendor's other skills and services, and could expose patients to less desirable practices. RDTs should only be introduced within broader accreditation programmes aiming to improve the standard of care in the private sector. Effective regulation by national authorities is also needed.

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Contact

For further information about the project, including a video and training manuals available in English, Portuguese and French, visit www.actconsortium.org/RDTdrugshops

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