Operational experience with RDTs in the private sector

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An international research collaboration

Goal: to develop and evaluate mechanisms to improve ACT access, targeting, safety and quality

Cluster Randomised Trials evaluating RDT deployment in:

- Public health facilities: Tanzania, Uganda, Cameroon, Ghana
- Community: Uganda, Afghanistan
- Private sector: Uganda, Nigeria

Descriptive RDT studies in Tanzania, Zanzibar

NMFI studies in northern Tanzania,

Zanzibar & Afghanistan

Safety & drug quality research studies

Ongoing studies

- **Can RDTs improve ACT targeting in the private sector?**

Cambodia

Ghana

Uganda

Nigeria – REACT

Tanzania – IMPACT2

Tanzania: IMPACT 2

Method and Setting:

Randomly selected private sector outlets in non-urban districts

Data collected from clients and attendants

Mwanza (36 outlets)

- No ADDO* registration
- Subsidised ACTs widely available (78% of outlets)
- Parasite Prev: 8.3%

Mtwara (37 outlets)

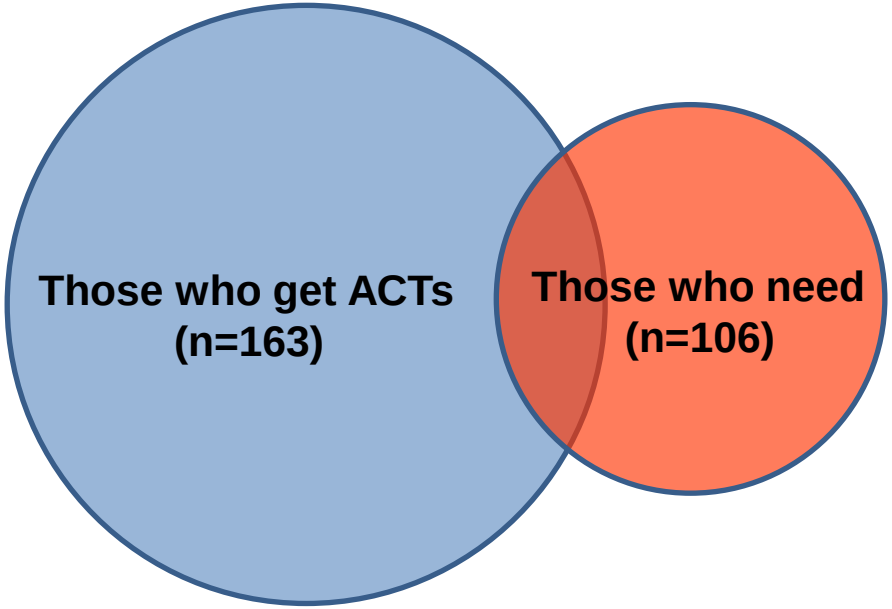
- ADDO registration & training
- Subsidised ACTs widely available (100% of outlets)
- Parasite Prev: 16.8%

*Accredited Drug Dispensing Outlet

Briggs M *et al*. Prevalence of malaria parasitemia and medication utilization patterns among clients seeking care for malaria or fever in drug shops in Tanzania, March – May 2012. ASTMH 2012. Poster session 24: LB-110.

Tanzania: IMPACT 2 – early results

- Private sector providers rarely base treatment on the results of parasitological tests.



13.5% of Private sector patients with non-severe fever had malaria

~ 69% of those with parasites did NOT buy an ACT

~80% who purchased an ACT did not have malaria

Briggs M *et al*. Prevalence of malaria parasitemia and medication utilization patterns among clients seeking care for malaria or fever in drug shops in Tanzania, March – May 2012. ASTMH 2012. Poster session 24: LB-110.

Tanzania: IMPACT 2 – early results

- Targeting varied between sites

Mwanza
No ADDOs
Prevalence 8.3%

	Purchased ACT	No ACT Purchased
Parasitemic	5 (11.9%)	37 (88.1%)
Not parasitemic	63 (17.4%)	300 (82.6%)

Mtwara
ADDOs
Prevalence 16.8%

	Purchased ACT	No ACT Purchased
Parasitemic	28 (43.8%)	36 (56.2%)
Not parasitemic	67 (21.3%)	248 (78.7%)

- Effect of ADDO (registration and training) unclear: none had RDTs

Briggs M *et al*. Prevalence of malaria parasitemia and medication utilization patterns among clients seeking care for malaria or fever in drug shops in Tanzania, March – May 2012. ASTMH 2012. Poster session A:LB-110.

Uganda: Mbonye *et al*

- Pragmatic cluster-randomised trial of RDTs in Registered Drug Shops in Mukono district, Uganda.
- Intervention package: low-cost, scalable - training and supporting job aids, close supervision for initial 2 months; community sensitisation and signage; free supply of RDT+ Coartem, sold at modest mark-up.
- Evaluation (mixed methods):
  - Targeting of ACTs – uptake of testing, impact on subsequent Coartem use
  - Economic outcomes – cost effectiveness, willingness to pay
  - Community and provider acceptance, and effect on health system and practice – qualitative research
  - Referral
- Full results: – Q1, 2013

Mbonye A *et al.* Introducing rapid diagnostic testing for malaria into the private sector: evidence from an intervention in registered drug shops in Uganda. ASTMH 2012. Poster session A-341.

Uganda: Mbonye *et al*

Preliminary Data!

ACT CONSORTIUM

Arm	Total enrolled	Treatment reported by drug shops after end of close support supervision			% ACT	Tx data missing
		Coartem	Rectal artesunate	No Coartem		
Presumptive	6649	6555	40	14	99%	40
RDT arm	9366	5312	53	3595	60%	406
Within RDT arm:						
RDT pos client	5326	5200	45	62	99%	19
RDT neg client	3947	45	7	3523	1%	372
No RDT result*	93	67	1	10	87%	15

58% RDT-positive

9% RDT-negatives have unknown treatment status

Adherence to RDT results	RDT Pos	RDT Neg	Overall adherence
Based on treatment reported by DSV	98.8 %	98.5 %	98.7 %
Treating missing data as non-adherence	98.5 %	89.3 %	**94.6 %**

Mbonye A *et al.* Introducing rapid diagnostic testing for malaria into the private sector: evidence from an intervention in registered drug shops in Uganda. ASTMH 2012. Poster session A-341.

Uganda: Hutchinson *et al*

Preliminary Data!

ACT CONSORTIUM

Community and provider acceptance – Quotes from qualitative research

….when you are working, you are as if you are still in the training, you are preparing this and that, and you go to the patient knowing what you are going to do for him

[yes] you see yourself becoming big.

Provider

She [DSV] got to know what she has to treat me for. Better than other 'clinics' where one goes and says 'give me the tablets for malaria' and they gave them to you and you don't get to know what type of fever is being treated

not sp[illegible]ot of money. Yet what you are suffering from is a different thing [not malaria]

becau[illegible]see now that it is very cheap

Community

Hutchinson E et al. **"**It puts life in us and we feel big": Shifts in the local health-care system during the introduction of RDTm into drug shops in Uganda. ACT Consortium Annual Conference, 2012, unpublished

Uganda: Mbonye *et al*

Preliminary Data!

A C T CONSORTIUM

Acceptability of RDT testing

- RDT testing at drug shops was viewed as a positive development by both DSVs and patients, generally well accepted
- Few refusals by clients to pay for an RDT (1%), no evidence to suggest that clients stayed away from drug shops using RDTs

Low operator error

- RDTs collected and re-read showed high concordance with readings by DSVs (95%)
- Agreement between RDT readings and light microscopy:
  - 91% RDT neg were slide negative; 66% RDT pos were slide positive
- Overdiagnosis by RDTs – prolonged positivity due to detection of antigen?

RDT adherence

- Compliance to RDT results by DSVs was high.

Referral by drug shop vendors

- A new concept – DSVs referred 25% of RDT-negative patients
- Referral, and follow-up of referral advice, remains a major challenge
- Linkage / integration with the formal health system needs to be strengthened

Ghana: Ansah *et al*

- Cluster randomised trial in “chemical sellers”
- Package of Interventions: Training, RDTs and demand creation using community engagement – Film and community leaders
- Targeting of ACTs measured – data analysis ongoing
- Qualitative research shows RDTs in private sector generally acceptable to community & licensed chemical sellers

- Full results due: Q1, 2013

Ansah E, et al. Preliminary Lessons from the Introduction of mRDTs into the Private retail sector in Ghana. ACT Consortium Annual Conference, 2012 (unpublished)

Nigeria: REACT: Onwujekwe O, *et al*

- Three arm cluster randomised trial.
- Provider Intervention – public clinics, private pharmacies and Patent Medicine Dealers
  - RDT with instructions
  - Training of health workers through workshops
  - Job Aids
  - Supervisory visits
- Community intervention
  - Malaria treatment education in schools
  - Peer-group- education
  - IEC materials
  - Drama production and displays
- Well developed process evaluation
- Results due in Q1/2 2013.

Onwujekwe O, et al. Design of a school-based intervention for improving the treatment of malaria in Nigeria. ACT Consortium Pis meeting, 2012. unpublished

Cambodia:
Yeung *et al*

Preliminary Data!

- National programme of subsidized socially marketed RDTs and ACTs in private sector since 2004
  - Piloted in 2001-2002
  - Funded by Global Fund
  - Marketing (Mass media, mobile video unit, job aids)
  - Provider training
  - “Medical detailing”
  - Procurement and supply
- Slow uptake and lack of data since implementation led to the Good Use of ACTs and RDTs (GUARD study):
  - To understand multiple aspects of how RDTs are deployed, performed, used in case management and perceived by providers

Yeung S *et al*: Scaling-up access to malaria diagnosis, country experiences and perspectives. ASTMH 2012. Symposium 14 & ACT Consortium Annual Conference, 2012. Unpublished

Cambodia GUARD study

Yeung *et al*

Preliminary Data!

- 42 % of providers advised a blood test, of whom 54% offered to perform the test themselves. Mystery client study (n=211)
- Formally trained providers more than untrained (56% of “cabinet” vs 15% of general shops)
- Providers were reluctant to sell antimalarials without prior blood test
- Use of the RDT: Only 38% used correct amount of blood (due to problems with pipette); Only 40% waited for the full 20 minutes; Only 16% disposed of sharps into sharps box
- The most commonly reported diagnosis in RDT negative patients was “typhoid” (67%)

Yeung S *et al*: Scaling-up access to malaria diagnosis, country experiences and perspectives. ASTMH 2012. Symposium 14 & ACT Consortium Annual Conference, 2012. Unpublished

Cambodia GUARD study

Yeung *et al*

Preliminary Data!

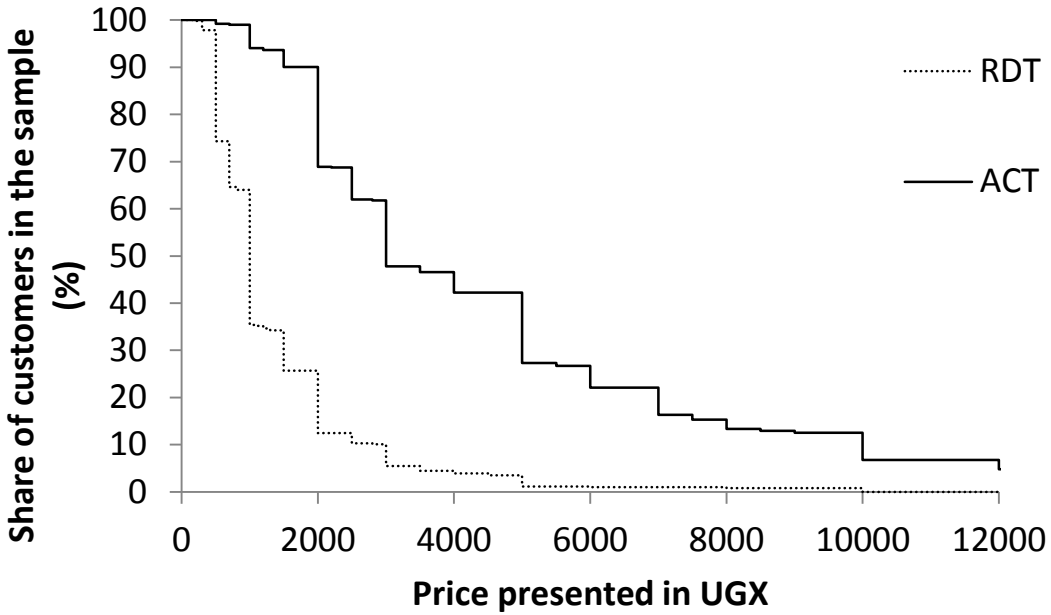
- RDTs can be rolled out in the private sector but ….
  - Not **all** private sector providers – target “diagnosers”?
  - Requires ongoing supportive supervision as well as behaviour change communication
  - Need system for assuring quality
  - Ensure reliable supply of RDTs and ACTs
  - Clarify and support management of “RDT negatives”
  - Some problems with use/blood safety
  - Communication challenge

Yeung S *et al*: Scaling-up access to malaria diagnosis, country experiences and perspectives. ASTMH 2012. Symposium 14 & ACT Consortium Annual Conference, 2012. Unpublished

Willingness to pay: Uganda

Hansen *et al*, 2012

- Users of the private sector are willing to pay for RDTs:
  - Uganda:



70% would pay 700 Sh [0.35 USD] or more
25% would pay 2000 Sh [1.00 USD] or more
for an RDT

70% would pay 2000 Sh [1.00 USD] or more
25% would pay 6000 Sh [2.99 USD] or more
for a course of ACT

Exit interviews with 519 drug shop clients to inform pricing

Hansen KS *et al*. Willingness-to-pay for a rapid malaria diagnostic test and artemisinin-based combination therapy from private drug shops in Mukono district, Uganda. Health Policy Plan. 2012 May 15.

Observed RDT Prices: Cambodia (Yeung *et al*)

Preliminary Data!

ACT CONSORTIUM

- Cambodia GUARD study (census of 112 private outlets, 2012).

  Subsidised RDTs:

  - Wholesale price 2009 = $0.50 for box of 10 tests in 2009
  - Median reported buying price (by outlet) was $0.62 for 10 RDTs (n=112)

  - Recommended Retail Price (not printed) = $0.24 per test
  - Median price to patient for one test (including doing the test) was US$0.73 (IQR $0.49-0.85) with a median absolute mark-up of US$0.66 per test

Yeung S *et al*: Scaling-up access to malaria diagnosis, country experiences and perspectives. ASTMH 2012. Symposium 14 & ACT Consortium Annual Conference, 2012. Unpublished

Research Needs

- Should RDTs be deployed in the private sector?

Factors to consider in the decision to deploy or not:

- Type of provider
- Cost
- Transmission intensity
- Health system effects
- Access to health services
- Integration of surveillance systems – tracking of cases

Importance of a nuanced approach

How can RDT use be optimised?

- What supporting interventions will ensure:
  - Uptake
  - Accuracy
  - Targeting
  - Safety
- What combination of financial and non-financial incentives promote appropriate use of RDTs and ACTs?
- What are the best strategies for management of RDT -ve patients?
- How can private practitioners engage within the health system

  - referral

  - tracking of patients

Summary:

- Need to pay attention to targeting of ACTs in the private sector
- Emerging signs that it is possible to deploy RDTs through some sections of the private sector, with appropriate supportive interventions
  - Improved targeting with compliance to test result - Uganda
  - Are acceptable to communities and private providers – Uganda, Ghana, Cambodia
  - People are willing to pay for them – Uganda, Cambodia
- Ongoing studies will have results in Q1-Q2 2013.

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