Antimalarial Markets in 9 Malaria Endemic Countries

World Bank, 9th Dec 2011

Kate O’Connell
on behalf of the ACTwatch Group
What is *ACTwatch*?

**Objective**
Provide policy makers with evidence on trends in availability, price, and use of antimalarials

**Partnership**
PSI, LSHTM and MoHs

**5 year, 7 country project**
Funded by the BMGF

Countries included:
- Benin
- DRC
- Zambia
- Nigeria
- Uganda
- Madagascar
- Cambodia
As part of Independent Evaluation of the AMFm

3 new studies, AMFm
Funded by the Global Fund

Some data presented may appear to differ from those in the Multi-country Baseline Report of the Independent Evaluation of the AMFm, Phase 1. However, the results are complementary as different indicators and denominators are sometimes used.
Research Studies - a complete picture of the market

**Outlet Survey (PSI):** What are the trends in the availability, volumes and price of antimalarials?
- Three times over the life of project.

**Supply Chain Research (LSHTM):** What are the determinants of the price and availability at different levels of the supply chain?
- Once over life of project

**Household Survey (PSI):** What are the trends in the levels of use of different antimalarials. What are the determinants of use?
- Two times (baseline & endline)
Outlet Surveys 2009-2011
Methods and Results
Outlet Survey: Methods

- Clusters were randomly selected proportional to population size
- Over-sampling of public health facilities and pharmacies
- Data were weighted to provide nationally representative estimates
- Audit sheet recorded:
  - generic name - brand name – formulation – strength
  - quantity in stock - expiry date - price
  - volume (quantity) dispensed in the last 7 days
- Census conducted of all outlets with the potential to stock antimalarials
Diversity of outlet types sampled

Benin

- Stall outside a market
- Stall in a market
- Boutique in a market
- Boutique outside a market
- Container
- Kiosk
- Mobile Provider
- Public Health Facility
- Part One Pharmacy
- Other

Zambia

- Grocery Store
- Kantemba
- Mini-market / Petrol Station
- Drug Store
- Other
- Part One Pharmacy
- Private Health Facility
- Public Health Facility

Diversity of outlet types sampled
2009-2011 Outlet Surveys - 9 Country Overview

55,811
Outlets with potential to stock antimalarials were screened

14,171
Eligible Outlets Interviewed

71,653
Antimalarials Audited
No two markets are the same:
Diversity of outlet types with antimalarials in stock

Nigeria, N=2,113
Benin, N=844
DRC, N=1,275
Madagascar, N=2,414
Kenya, N=1,950
Uganda, N=2,497
Cambodia, N=868
Zambia, N=435
Zanzibar, N=314

Relative distribution of outlets stocking antimalarials, by public/not for profit and private sector

Public Health Facility
Community Health Worker
Private not-for-profit HF
Pharmacy
Private for-profit HF
Drug Store
General Retailer
Kiosk/Stall/Informal seller
Hawker/Mobile provider

Public/not for profit sector
Private Sector
Availability of antimalarials among all public health facilities

In Cambodia, the category “quality assured ACT” also includes any ASMQ & DHA-PPQ.
Availability of antimalarials among all private sector outlets*

* Of those stocking at least one antimalarial drug
Relative volumes of antimalarials distributed, by sector

- Benin
- Cambodia
- DRC
- Kenya
- Madagascar
- Nigeria
- Uganda
- Zambia
- Zanzibar
Relative volumes of antimalarials distributed, by sector
Relative volumes of antimalarials distributed, by sector
Relative volumes of antimalarials distributed, by sector and drug type

- Quality-assured ACT
- non-Quality-assured ACT
- Non-artemisinin therapies
- Non-oral artemisinin monotherapy
- Oral artemisinin monotherapy

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Relative volumes of antimalarials distributed, by sector and drug type
## Price of Antimalarials in Public Sector

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<th>Benin</th>
<th>Cambodia</th>
<th>DRC</th>
<th>Madagascar</th>
<th>Kenya</th>
<th>Tanzania</th>
<th>Nigeria</th>
<th>Uganda</th>
<th>Zambia</th>
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<tr>
<td>Median price of QAAC Ts in public health facilities</td>
<td>$1.17</td>
<td>0.00</td>
<td>$3.20</td>
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* Proportion for Nigeria based on volumes of child treatments, as insufficient data was available on the price of distributed adult treatments.
Median price (IQR) of full adult equivalent antimalarial treatments in the private sector

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2009-2011 Outlet Survey Results
Availability of diagnostic testing in the public/not for profit sector
Availability of diagnostic testing in the private sector

- Any diagnostic test
- RDT

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Caregivers awareness of most effective treatment for malaria is low

![Bar Chart]

- Benin: n=885
- DRC: n=2331
- Madagascar: n=1970
- Nigeria: n=2833
- Uganda: n=1452
- Zambia: n=1727

Caregivers who are aware of the national first-line drug
ACT treatment across household wealth quintiles

Baseline Household Survey Results
Conclusions of 2009/11 outlet surveys

• Diversity between countries of the outlet types that stock antimalarials

• Non-artemisinin therapy is widely available.

• ACTs are not found in the private sector, with some exceptions

• Private sector dominates the market (except Zambia & Uganda)

• ACTs are up to 25 times more expensive than non-artemisin monotherapies (except where subsidy projects exist)

• Volumes of QAACTs are low: from 5 – 40% and non-art monotherapy generally dominates the market
Acknowledgements

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*ACTwatch Advisory Committee*

- Mr. Suprotik Basu
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- Mr. Louis Da Gama
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Note, data presented in this presentation may differ from the AMFm Independent Evaluation Report due to small differences in the categorisation of indicators or denominators.
Methodology

Shewchuk, T; O’Connell, KA; Goodman, C; Hanson, K; Chapman, S; Chavasse, D The ACTwatch project: methods to describe anti-malarial markets in seven countries; Malaria Journal, 10:35

Research

O’Connell, KA; Gatakaa, H; Poyer, S; Njogu, J; Evance, I; Munroe, E; Solomon, T; Goodman, C; Hanson, K; Zinsou, C; Akulayi, L; Raharinjatovo, J; Arogundade, E; Buyungo, P; Mpasela, F; Adjibabi, CB; Agbango, JA; Ramarosandratana, BF; Coker, B; Rubahika, D; Hamainza, B; Chapman, S; Shewchuk, T; Chavasse, D Got ACTs? Availability, price, market share and provider knowledge of anti-malarial medicines in public and private sector outlets in six malaria-endemic countries. Malaria Journal, 2011, 10:36

Littrell, M; Gatakaa, H; Evance, I; Poyer, S; Njogu, J; Solomon, T; Munroe, E; Chapman, S; Goodman, C; Hanson, K; Zinsou, C; Akulayi, L; Raharinjatovo, J; Arogundade, E; Buyungo, P Mpasela, F; Adjibabi, CB; Agbango, JA; Ramarosandratana, BF; Coker, B; Rubahika, D; Hamainza, B; Shewchuk, T; Chavasse, D; O’Connell, KA Monitoring fever treatment behaviour and equitable access to effective medicines in the context of initiatives to improve ACT access: baseline results and implications for programming in six African countries , Malaria Journal, 10:327.

Littrell, M; Gatakaa, H; Sochea Phok, Henrietta Allen, Shunmay Yeung, Char Chuor, Lek Dysoley, Duong Socheat, Angus Spiers, Chris White, Shewchuk, T; Chavasse, D; O’Connell, KA Case management of malaria fever in Cambodia: results from national anti-malarial outlet and household surveys , Malaria Journal, 10:328.
No two markets are the same: Diversity of outlet types with antimalarials in stock

- Nigeria (N = 2,113)
- Benin (N = 844)
- DRC (N = 1,375)
- Madagascar (N = 2,414)
- Kenya (N = 1,590)
- Uganda (N = 1,225)
- Cambodia (N = 868)
- Zambia (N = 4)
- Zanzibar (N = 314)
- Tanzania (N = 676)
No two markets are the same: Diversity of outlet types with antimalarials in stock

Nigeria
N = 2,113

Cambodia
N = 868

Madagascar
N = 2,414

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The first disbursement by the Global Fund was made in August 2010. First-line buyers commenced placing orders in July 2010 and some 635,000 treatment units arrived in

Provider knowledge of first-line treatment, by sector

[Bar chart showing provider knowledge of first-line treatment by sector for Benin, Cambodia, DRC, Kenya, Madagascar, Nigeria, Uganda, Zambia, and Zanzibar. The chart indicates the percentage of healthcare providers aware of first-line treatment for each sector, with a comparison between public/not for profit and private sectors.]
The first disbursement by the Global Fund was made in August 2010. First-line buyers commenced placing orders in July 2010 and some 635,000 treatment units arrived in January 2011.

Provider knowledge of first-line treatment, by sector

[Bar chart showing provider knowledge by sector for various countries, including Benin, Cambodia, DRC, Kenya, Madagascar, Nigeria, Uganda, Zambia, and Zanzibar. The chart compares public/not for profit and private sectors, with percentages ranging from 0% to 100%.]