Uganda: 2015 ACTwatch Outlet Survey
## Presentation outline

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### Summary of National Trends  
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The ACTwatch project
ACTwatch produces standardized malaria medicine & diagnostic evidence in 12 countries

ACTwatch countries:

- Benin
- Cambodia
- Democratic Republic of the Congo
- Kenya
- Laos PDR
- Madagascar
- Myanmar
- Nigeria
- Tanzania
- Thailand
- Uganda
- Zambia
National Outlet Surveys

- 2008
- 2009
- 2010
- 2011
- 2013
- 2015
Context for ACTwatch Outlet Surveys in Uganda

Co-paid ACTs – Global Fund

AMFm

Co-payment mechanism

VHT strategies

Confirmatory testing policy & RDT Scale-Up

Injectable artesunate policy

Outlet Survey Methods
Study Population

- Study Population: Outlets with antimalarials available, potential to have antimalarials or with malaria blood testing available

- What is an outlet?
  - Public Health Facility
  - Community Health Worker
  - Private Not For-Profit Facility
  - Private For-Profit Facility
  - Pharmacy
  - Drug Store
Sampling

- Representative sample of clusters (sub-counties) from urban and rural domains
- Complete a census of all potentially eligible outlets
- Extend the census area to the county level to boost the sample size for key market segments, including public health facilities and pharmacies (Booster sample)
- Screen for antimalarials in stock or malaria blood testing available
Product Audit

When products are in stock: Product audit

- Record information about each antimalarial product in stock:
  - Formulation (tablet, syrup, injection, etc.)
  - Brand/generic names
  - Strength
  - Manufacturer
  - Country of manufacture
  - Amount distributed in the past week
  - Retail and wholesale price

- Record information about each mRDT product in stock
<table>
<thead>
<tr>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAKISO TC</td>
<td>MUGOYE</td>
</tr>
<tr>
<td>EASTERN DIVISION</td>
<td>BUSHIKA</td>
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<tr>
<td>PECE</td>
<td>MUHOKYA</td>
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<tr>
<td>MOYO TC</td>
<td>MWIZI</td>
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<tr>
<td>EASTERN DIVISION</td>
<td>RWEIKINIRO</td>
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<td>KAKOBA</td>
<td>BUGANGARI</td>
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<td>AMURIA TC</td>
<td>ENDINZI</td>
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<td>CENTRAL DIVISION</td>
<td>KANONI</td>
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<td>BUSIISI DIVISION</td>
<td>KOCH GOMA</td>
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<td>Kawempe II</td>
<td>LAPUL</td>
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<tr>
<td>Kasubi</td>
<td>KIGOROBYA</td>
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<tr>
<td>Bukasa</td>
<td>BUKANGA</td>
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<tr>
<td>Nsambya Central</td>
<td>KAWOLO</td>
</tr>
<tr>
<td>Mutungo</td>
<td>KIHUURA</td>
</tr>
<tr>
<td>KIGUMBA TC</td>
<td>OMORO</td>
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<tr>
<td>KYELEGEGA TC</td>
<td>NABWIGULU</td>
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<tr>
<td>NSANGI</td>
<td>KIDERA</td>
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<td>SSEKANYONYI</td>
<td>KISEKKA</td>
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<tr>
<td>MAFUBIRA</td>
<td>BIISO</td>
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<tr>
<td>MUKONGORO</td>
<td>IKI-IKI</td>
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<tr>
<td>ARAPAI</td>
<td>MPASAANA</td>
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<td>OSUKURU</td>
<td>SISUNI</td>
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<tr>
<td>KITYERERA</td>
<td>KYANNAMUKAAKA</td>
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<tr>
<td>KIRA TC</td>
<td>MPUNGE</td>
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<td></td>
<td>LORENCECORRA</td>
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<tr>
<td></td>
<td>MAKIDYE-SSABAGABO</td>
</tr>
</tbody>
</table>
Outlet Survey Results - Antimalarials
Outlet Survey Sample

9,920 outlets enumerated

9,439 outlets screened

4,781 outlets met screening criteria

4,726 outlets interviewed

481 outlets not screened

4,658 outlets did not meet screening criteria

56 outlets not interviewed

9,439 outlets screened
What is the availability of antimalarials among these screened outlets?
Availability of any antimalarial in the public sector

Among all screened public outlets, across survey round

[Bar chart showing percentage of outlets for Public Health Facility, Community Health Worker, Private Not For-Profit Health Facility, and All Public from 2010 to 2015]
Availability of any antimalarial in all sectors

Among all screened outlets, across survey round

*2015 does not include the general retail outlet type
What types of outlets are stocking antimalarials?
Market Composition

Outlet type, among outlets stocking any antimalarial, 2010

2010
N=1,434

59%

Public Health Facility

10%

Community Health Worker

4%

Private Not For-Profit Facility

3%

Private For-Profit Facility

21%

Private For-Profit Facility

1%

Pharmacy

1%

Drug Store

2%

General Retailer

3%

Itinerant Vendor
Market Composition

Outlet type, among outlets stocking any antimalarial, across survey round

2010 N=1,434
- Public Health Facility: 59%
- Private Not For-Profit Facility: 4%
- Private For-Profit Facility: 21%
- Pharmacy: 3%
- Drug Store: 2%
- General Retailer: 10%
- Community Health Worker: 6%
- Itinerant Vendor: 2%

2011 N=2,252
- Public Health Facility: 54%
- Private Not For-Profit Facility: 9%
- Private For-Profit Facility: 23%
- Pharmacy: 2%
- Drug Store: 2%
- General Retailer: 12%
- Community Health Worker: 6%
- Itinerant Vendor: 1%

2013 N=2,339
- Public Health Facility: 43%
- Private Not For-Profit Facility: 2%
- Private For-Profit Facility: 1%
- Pharmacy: 12%
- Drug Store: 36%
- General Retailer: 6%
- Community Health Worker: 16%
- Itinerant Vendor: 2%

2015 N=3,907
- Public Health Facility: 50%
- Private Not For-Profit Facility: 2%
- Private For-Profit Facility: 16%
- Pharmacy: 1%
- Drug Store: 50%
- General Retailer: 6%
- Community Health Worker: 25%
- Itinerant Vendor: 1%
Market Composition

*Outlet type, among outlets stocking any antimalarial, 2015*

<table>
<thead>
<tr>
<th>Outlet Type</th>
<th>Urban N=1,406</th>
<th>Rural N=2,501</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Facility</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Community Health Worker</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Private Not For-Profit Facility</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Private For-Profit Facility</td>
<td>30%</td>
<td>31%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>4%</td>
<td>11%</td>
</tr>
<tr>
<td>Drug Store</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>General Retailer</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Itinerant Vendor</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>
What types of antimalarials were found in the outlets?

- Quality-assured ACTs
- Quality-assured ACTs with ‘green leaf’ logo
- Non quality-assured ACTs
- Sulfadoxine-pyrimethamine
- Chloroquine
- Oral quinine
Quality-assured ACTs (QA ACT)

What are quality-assured ACTs (QA ACT)?

- QA ACTs are ACTs with WHO pre-qualification from a manufacturer with “Good Manufacturing Practices” (GMP)
  - Includes any ACT that appeared on the Global Fund’s indicative list of assured antimalarials prior to data collection
  - Includes any ACTs that previously had C-status in an earlier Global Fund quality assurance policy
  - Includes any ACT that had been granted regulatory approval by the European Medicines Agency
Availability of QA ACTs in the public sector

Among all public sector outlets with at least one antimalarial in stock, across survey round.
Availability of QA ACTs in all sectors

Among all outlets with at least one antimalarial in stock, across survey round
Quality-assured ACTs with ‘green leaf’ logo

What is the ‘green leaf’ logo?

- The ‘green leaf’ logo indicates that an ACT was subsidized by the Global Fund as a part of a private sector co-payment mechanism.

- From 2010-2011, the ‘green leaf’ logo subsidy program was known as AMFm and these ACTs were available in the public and private sector. Since 2013, the project is a private sector co-payment mechanism only.
Availability of QA ACT with ‘green leaf’ logo, public sector

Among all public sector outlets with at least one antimalarial in stock, across survey round
Availability of QA ACT with ‘green leaf’ logo, all sectors

Among all outlets with at least one antimalarial in stock, across survey round
Availability of QA ACTs, urban/rural

Among all outlets with at least one antimalarial in stock, 2015

[Bar chart showing percentage of outlets with QA ACTs by type and location (urban vs. rural).]
Availability of non-QA ACTs in the public sector

Among all public sector outlets with at least one antimalarial in stock, across survey round.
Availability of non-QA ACTs in all sectors

Among all outlets with at least one antimalarial in stock, across survey round
Availability of Non-QA ACTs, urban/rural

Among all outlets with at least one antimalarial in stock, 2015
Types of non-QA ACT available in the private sector

- **AL tablets:**
  - Lonart 20/120 and Lonart Forte 40/240
  - Co-Metherb
- **DHA-PPQ:**
  - Duo-Cotecxin 40/320
  - P-Alaxin
- **AL suspensions**
  - Lonart Pediatric
  - Co-Artesiane Pediatric

**Non-QA ACT Private N=7,179**

- **36%** AL tablet
- **17%** DHA PPQ tablet
- **8%** ASMQ tablet
- **7%** A NAP tablet
- **1%** AL non-tablet
- **31%** DHA PPQ non-tablet
Availability of SP, public health sector

Among all public sector outlets with at least one antimalarial in stock, across survey round.
Availability of SP, all sectors

Among all outlets with at least one antimalarial in stock, across survey round

- Public Health Facility
- Community Health Worker
- Private not-for-Profit Health Facility
- All Public
- Private for-Profit Health Facility
- Pharmacy
- Drug Store
- General Retailer
- All Private

2010  2011  2013  2015
Availability of SP, urban/rural

Among all outlets with at least one antimalarial in stock, 2015

[Chart showing availability of SP in urban and rural settings across different types of outlets, such as Public Health Facility, Community Health Worker, Private Not For-Profit Health Facility, All Private, etc.]
Types of SP available in the private sector

- Most SP audited in private sector was manufactured in Uganda
- Common brands include Malaren, Kamsidar, and Neosidar
- SP in the public sector was also manufactured exclusively in Uganda
Availability of oral quinine, public health sector

Among all public sector outlets with at least one antimalarial in stock, across survey round
Availability of oral quinine, all sectors

Among all outlets with at least one antimalarial in stock, across survey round
Availability of oral quinine, urban/rural

Among all outlets with at least one antimalarial in stock, 2015
Types of oral quinine available in Uganda, 2015

- Oral quinine in the public sector is primarily tablets, made in Uganda, by Rene Industries
- Oral quinine in the private sector was half tablets and half syrups
  - Tablets: Ago-Quinine and quinine sulphate
  - Syrups: Requin and Quinine-K
What types of artesunate used for severe malaria treatment were found in the outlets?

- Injectable artesunate
- Rectal artesunate

- Injectable artesunate became the first-line recommended treatment for severe malaria in 2014
- Rectal artesunate is recommended for pre-referral treatment of severe malaria
- UNITAID invested 17 million USD to scale up access to IV/IM artesunate, in partnership with CHAI and MMV.
Availability of injectable artesunate, public sector

Among all public sector outlets with at least one antimalarial in stock, across survey round.
Availability of injectable artesunate, all sectors

Among all outlets with at least one antimalarial in stock, across survey round
Availability of injectable artemisinine, urban/rural

Among all outlets with at least one antimalarial in stock, 2015
Availability of rectal artesunate, public sector

Among all public sector outlets with at least one antimalarial in stock, across survey round
Availability of rectal artesunate, all sectors

Among all outlets with at least one antimalarial in stock, across survey round
What is the antimalarial market share between the public and private sectors?
Antimalarial Market Share, 2010-2015

Relative market volume (sale/distribution) of antimalarial AETDs, by sector and antimalarial class.
Antimalarial Market Share, 2010-2015

Relative market volume (sale/distribution) of antimalarial AETDs, by sector and antimalarial class

![Graph showing market share of antimalarials by sector and class from 2010 to 2015]
Antimalarial Market Share

Relative market volume (sale/distribution) of antimalarial AETDs, 2015

Percentage of total market volume

- Public
- Private
- Private-For-Profit Facility
- Pharmacy
- Drug Store
Antimalarial Market Share

Relative market volume (sale/distribution) of antimalarial AETDs, by sector and drug class, 2015

- QA ACT green leaf
- QA ACT without green leaf
- Non QA ACT
- SP
- Other non-artemisinin therapy
- Non-oral artemisinin monotherapy
Antimalarial Market Share, urban/rural

Relative market volume (sale/distribution) of antimalarial AETDs, by sector and drug class, 2015

[Bar chart showing market share of antimalarial AETDs by sector and drug class in urban and rural areas, 2015.]
How much do antimalarials cost in the private sector?
Private sector median price of AETD, 2010-2015

Among all drugs of this type available in the private sector, in 2010 US dollars

- SP: $0.70 (2010), $0.59 (2011), $0.49 (2013), $0.44 (2015)
Private sector median price of AETD, 2010-2015

Among all QA ACT with and without green leaf logo in the private sector, in 2015 USD
Outlet Survey Results – Blood testing
Is malaria blood testing available where antimalarials are distributed?
Malaria Diagnostic Test Availability (RDT or Microscopy)
Among public sector outlets stocking antimalarials, 2010-2015

[Bar chart showing the percentage of outlets with Malaria Diagnostic Test Availability from 2010 to 2015 across different types of health facilities: Public Health Facility, Community Health Worker, Private not-for-Profit Health Facility, and All Public. The chart indicates improvements over the years.]
Malaria Diagnostic Test Availability (RDT or Microscopy)

Among outlets stocking antimalarials, 2010-2015
Malaria blood testing availability, urban/rural

Among all outlets stocking antimalarials, 2015
Malaria Rapid Diagnostic Test Availability (RDT)

Among public sector outlets stocking antimalarials, 2010-2015
Malaria Rapid Diagnostic Test Availability (RDT)
Among outlets stocking antimalarials, 2010-2015
Malaria RDT availability, urban/rural

Among all outlets stocking antimalarials, 2015
Private sector median price of RDTs and pre-packaged QA AL, 2015

- Pre-packaged pediatric QA AL: $0.39
- RDT - Child: $0.81
- Pre-packaged adult QA AL: $1.62
- RDT - Adult: $0.81
Malaria Blood Testing Market Share

Relative market volume (sale/distribution) of malaria blood testing, by sector and type of test

![Chart showing market share of malaria blood testing by sector and type of test. The chart is divided into public, private, private for-profit facility, pharmacy, and drug store sectors. The public sector shows a higher percentage of market volume, with green bars representing microscopy and blue bars representing RDT.]
ORS, Zinc & Amoxicillin availability
Availability of ORS
Among all outlets with at least one antimalarial in stock, 2015
Availability of Zinc
Among all outlets with at least one antimalarial in stock, 2015
# Availability of ORS & Zinc

*Among all outlets with at least one antimalarial in stock, 2015*

<table>
<thead>
<tr>
<th>Health Facility Type</th>
<th>PERCENT OF OUTLETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Facility</td>
<td>81%</td>
</tr>
<tr>
<td>Community Health Worker</td>
<td>17%</td>
</tr>
<tr>
<td>Private Not For-Profit Health Facility</td>
<td>64%</td>
</tr>
<tr>
<td>Total Public Sector</td>
<td>70%</td>
</tr>
<tr>
<td>Private for-Profit Health Facility</td>
<td>55%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>94%</td>
</tr>
<tr>
<td>Drug Store</td>
<td>53%</td>
</tr>
<tr>
<td>Total Private Sector</td>
<td>58%</td>
</tr>
</tbody>
</table>
Availability of Amoxicillin DT
Among all outlets with at least one antimalarial in stock, 2015
Availability of QA ACT, ORS, Zinc & Amoxicillin DT

Among all outlets with at least one antimalarial in stock, 2015
Results – Knowledge
Do the providers working in outlets stocking antimalarials know the correct first-line treatment for uncomplicated malaria?
Antimalarial drug knowledge, 2010-2015

Providers who state the first-line treatment for uncomplicated malaria, among antimalarial stocking outlets, across survey round

![Graph showing the percentage of outlets for different types of providers (Public Health Facility, Community Health Worker, Private Not For-Profit Health Facility, All Public, Private For-Profit Health Facility, Pharmacy, Drug Store, All Private) for the years 2010, 2011, 2013, and 2015. The graph indicates the percentage of outlets that correctly identified the first-line treatment for uncomplicated malaria over the survey rounds.](image-url)
Summary: National Trends
Summary of National Trends – 2015

1. High readiness of public health facilities to appropriately manage malaria cases:
   - Availability of QA ACTs has increased each survey round in the public sector
     - Availability of QA ACTs in 2015 was above 96% in all public sector outlet types
   - Availability of malaria blood testing has increased each survey round in public health facilities
     - Availability in 2015 was 95%
   - RDT availability has particularly seen growth: from availability in 3% of public health facilities in 2010 to 82% of facilities in 2015
   - The market composition of antimalarial-stocking Community Health Workers has seen increases from 4% in 2010 to 25% in 2015
Summary of National Trends – 2015

2. The role of the private sector

- The private sector accounts for over half of the antimalarial market share since 2011.

- Drug stores are the most common distributor of antimalarials and account for about one-third of all antimalarial distribution.

- QA ACT market share increased during the AMFm pilot period from 5% in 2010 to 39% in 2011, and afterward to 44% in 2013 and 48% in 2015. Nearly all of these were ‘green leaf’ ACTs, subsidized product from the Global Fund.

- 1 in 5 antimalarials distributed in the private sector in 2015 were non-QA ACTs.

- There is a financial incentive to seek testing for an adult before treatment, since RDTs are cheaper than adult treatments, but treatment for a small child is much cheaper than an RDT.
Summary of National Trends – 2015

- Readiness of the private sector to appropriately manage malaria cases:
  - High availability of QA ACTs over time
    - Availability of QA ACTs in all private outlets increased dramatically during the AMFm pilot period 2010-2011 from 11 to 63%, and again to 75% in 2013 and 2015.
  - Gaps exist in availability of malaria blood testing
    - Availability in all private outlets increased from 14% in 2010 to 33% in 2015, but remained at relatively low levels compared to public sector availability
    - Availability was highest in private for-profit facilities at 70% in 2015, and pharmacies at 51% in 2015.
3. Improved readiness to manage severe malaria cases:

- Efforts to expand access to injectable artesunate have made the most progress in public health facilities, from 4% availability in 2013 to 53% in 2015.
- Access has also increased in private for-profit health facilities, from 7% availability in 2013, to 20% in 2015.
- Efforts to expand access to rectal artesunate have had moderate success in the public sector: availability in public health facilities increased from 1% in 2013 to 31% in 2015.
- There was very low availability of rectal artesunate in the private sector in any survey round.
Summary of National Trends – 2015

4. Urban/rural comparisons:

• Malaria treatment options vary in urban versus rural areas.
  - Urban areas have more antimalarial-stocking private sector outlets, especially private for-profit facilities
  - In rural areas, there are more public sector options including CHWs.
  - Drug stores are common in both urban and rural areas.
  - Availability of malaria diagnostic tests was higher in urban private outlets than rural outlets, due to the presence of private for-profit facilities in urban areas with high testing availability

• The QA ACT market share was higher in rural outlets than urban outlets

• SP availability was higher in urban over rural public health facilities, and in the urban private sector compared to the rural private sector

• Non QA ACT availability was higher among private outlets in urban areas

• Availability of injectable artemisinin was higher in urban outlets than in rural outlets
Acknowledgements

- Ministry of Health
- SEDC
- Fieldwork Team
- ACTwatch Team
Thank you!
Private sector median price of AETD, 2015

Among all drugs of this type available in the private sector, in 2015 US dollars