## Presentation outline

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</table>
The ACTwatch project
ACTwatch produces standardized malaria medicine & diagnostic evidence in 13 countries
National Outlet Surveys

- 2010
- 2011
- 2014
Context for ACTwatch Outlet Surveys in Kenya

Co-paid ACTs – Global Fund

AMFm

Co-payment mechanism

AL scale up strategies

RDT pilot

Outlet Survey Methods
Study Population

- Study Population: Outlets with 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
  - Registered Pharmacy
  - Unregistered Pharmacy
  - General Retailer
  - Itinerant Vendor
Sampling

- Representative sample of clusters (Locations) from urban and rural domains: 26 urban Locations, and 27 rural Locations selected

- Complete a census of all potentially eligible outlets

- Extend the census area to the division level to boost the sample size for key market segments, including public health facilities and registered 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
## Locations

<table>
<thead>
<tr>
<th>Urban</th>
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<th>Rural</th>
<th>Rural</th>
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<td>WINAM</td>
<td>KESSES</td>
<td>MSAMBWENI</td>
<td>TIRIKI WEST</td>
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<td></td>
<td>KHWISERO</td>
<td>MULOT</td>
<td>WINAM</td>
</tr>
</tbody>
</table>
Outlet Survey Sample

14,127 outlets enumerated

12,676 outlets screened

2,477 outlets met screening criteria

2,449 outlets interviewed

10,199 outlets did not meet screening criteria

28 outlets not interviewed

12,676 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

![Graph showing availability over time for different outlet types.]

- Public Health Facility
- Community Health Worker
- Private-Not-For-Profit Facility
Availability of any antimalarial in all sectors

Among all screened outlets, across survey round

[Bar chart showing availability of antimalarials in different sectors over the years 2010, 2011, and 2014. The sectors include Public Health Facility, Community Health Worker, Private-Not-For-Profit Facility, Private-For-Profit Facility, Registered Pharmacy, Unregistered Pharmacy, and General Retailer.]
What types of outlets are stocking antimalarials?
Market Composition

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

2010
N=1,471

- Public Health Facility: 31%
- Community Health Worker: 12%
- Private Not For-Profit Facility: 3%
- Private For-Profit Facility: 3%
- Pharmacy: 37%

2011
N=1,348

- Public Health Facility: 30%
- Community Health Worker: 19%
- Private Not For-Profit Facility: 3%
- Private For-Profit Facility: 3%
- Pharmacy: 31%

2014
N=1,501

- Public Health Facility: 33%
- Community Health Worker: 13%
- Private Not For-Profit Facility: 10%
- Private For-Profit Facility: 21%
- Pharmacy: 3%
- Itinerant Vendor: 1%

Legend:
- Public Health Facility
- Community Health Worker
- Private Not For-Profit Facility
- Private For-Profit Facility
- Pharmacy
- Drug Store
- General Retailer
- Itinerant Vendor
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
- Other non-artemisinin therapies
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 and was used in a program supplying subsidized ACT
  - 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 facilities with at least one antimalarial in stock, across survey round
Availability of QA ACTs in all sectors

Among all facilities 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 2012, the project is a private sector co-payment mechanism only
Availability of QA ACT with ‘green leaf’ logo, public sector

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

Among all health facilities with at least one antimalarial in stock, across survey round
Availability of non-QA ACTs in the public sector

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

![Graph showing availability of non-QA ACTs in the public sector across different years (2010, 2011, 2014).]
Availability of non-QA ACTs in all sectors

Among all facilities with at least one antimalarial in stock, across survey round
Types of non-QA ACT available in the private sector

- Most are non-QA AL or non-QA DHA PPQ
- Most by Bliss GVS Pharmaceuticals (AL and DHA) or Beijing Holley-Cotec Pharmaceuticals (DHA)
- 3,093 drugs found

![Pie chart showing types of non-QA ACT](image)

- 32% AL tablet
- 19% ASAQ tablet
- 22% DHA PPQ non-tablet
- 8% AS SP tablet
- 4% AN tablet
- 4% AL non-tablet
- 8% ASMQ tablet
- 4% DHA PPQ tablet
- 8% ASMQ non-tablet
Availability of SP, public health sector

Among all public health facilities with at least one antimalarial in stock, across survey round

![Bar chart showing the percentage of outlets with antimalarials from 2010 to 2014. The chart indicates a significant decrease in availability over the years.](chart.png)
Availability of SP, all sectors

Among all health facilities with at least one antimalarial in stock, across survey round.
Availability of SP, all sectors, by IPTp region

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

![Chart showing availability of SP in target and non-target areas across different types of facilities.](chart.png)
Types of SP available in the private sector

- >80% of SP audited in private sector was manufactured in Kenya
- Tablet formulations – typically 2 or 3-tablet packages
- Fanlar and Malodar are both marketed for IPTp

![Types of SP](image.png)
Availability of severe malaria treatment, all sectors

Among all health facilities 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, 2010-2014

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

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
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<tbody>
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<td>Public</td>
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<td>50</td>
</tr>
<tr>
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<td>10</td>
</tr>
<tr>
<td>Private</td>
<td>90</td>
<td>95</td>
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</table>
Antimalarial Market Share, 2010-2014

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

Percentage of total market volume

- QAACt without 'green leaf'
- Non-QAACt
- Other non-artemisinin therapy
- Non-oral artemisinin monotherapy
- QAACt with 'green leaf'
- SP
- Oral artemisinin monotherapy

<table>
<thead>
<tr>
<th>Year</th>
<th>Public</th>
<th>Private</th>
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<tbody>
<tr>
<td>2010</td>
<td></td>
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<tr>
<td>2011</td>
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<td></td>
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<tr>
<td>2014</td>
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</tbody>
</table>
Antimalarial Market Share

Relative market volume (sale/distribution) of antimalarial AETDs, 2014

Percentage of total market volume

- Public
- Private
- Private for-Profit Health Facility
- Registered Pharmacy
- Unregistered Pharmacy
- General Retailer
Antimalarial Market Share

Relative market volume (sale/distribution) of antimalarial AETDs, by sector and drug class, 2014
How much do antimalarials cost in the private sector?
Private sector median price of AETD, 2009-2014

Among all drugs of this type available in the private sector, in 2009 US dollars

- **2010**
  - Non QAACT: $4.61
  - Quality-Assured ACT: $2.30
  - SP: $0.46

- **2011**
  - Non QAACT: $4.61
  - Quality-Assured ACT: $0.52
  - SP: $0.46

- **2014**
  - Non QAACT: $5.25
  - Quality-Assured ACT: $1.75
  - SP: $0.66
Outlet Survey Results – Blood testing
Is malaria blood testing available where antimalarials are distributed?
Malaria Diagnostic Test Availability (RDT or Microscopy)

Among outlets stocking antimalarials, 2010-2014
Results – Knowledge
Do the providers working in outlets stocking antimalarials know the correct first-line treatment for uncomplicated malaria?
Antimalarial drug knowledge, 2009-2014

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

[Graph showing the percentage of outlets across different years and types of facilities, with error bars indicating variability.]

- Public Health Facility
- Private For-Profit Facility
- Registered Pharmacy
- Unregistered Pharmacy
- General Retailer
Urban/Rural Comparisons
Is the availability of QA ACTs different in urban and rural areas?
Availability of QA ACTs, urban/rural

Among all outlets with at least one antimalarial in stock, 2014
Availability of Non-QA ACTs, urban/rural

Among all outlets with at least one antimalarial in stock, 2014
Is the availability of SP different in urban and rural areas?
Availability of SP, urban/rural

Among all outlets with at least one antimalarial in stock, 2014
Is the antimalarial market share different in urban and rural areas?
Antimalarial Market Share, urban/rural

Relative market volume (sale/distribution) of antimalarial AETDs, by sector and drug class, 2014

- QAACT without 'green leaf'
- Non-QAACT
- Other non-artemisinin therapy
- Non-oral artemisinin monotherapy
- QAACT with 'green leaf'
- SP
- Oral artemisinin monotherapy
Is the availability of malaria blood testing different in urban and rural areas?
Malaria MST and RDT availability, urban/rural

Among public health facilities stocking antimalarials, 2014

Percentage of public health facilities

Microscopy

Rural

Urban

Rural

0
10
20
30
40
50
60
70
80
90
100
Summary: National Trends
Summary of National Trends – 2014

1. High readiness of public health facilities to appropriately manage malaria cases:

- QA ACTs are available in >75% of public health facilities across all survey rounds
  - This is a decline from nearly 100% in 2011

- Access to malaria diagnostics in public health facilities has increased from 46% in 2010 to >90% in 2014

- 80% of public health facilities had treatment for severe malaria in stock, 50% had artesunate injection (firstline treatment for severe malaria)

- Half of all public health facilities in IPTp-targeted areas had SP available
The role of the private sector in malaria case management:

- The private sector is responsible for nearly 90% of all antimalarial distribution.
- 40% by registered pharmacies, 30% by unregistered pharmacies
- Fewer than 25% of antimalarial-stocking pharmacies had malaria blood testing available
- QA ACT availability in 2014 remained high following the end of the AMFm pilot period in 2011, particularly among private health facilities and registered and unregistered pharmacies (>80%).
- Private sector price of QA ACT increased from $0.52 in 2011 (same price as SP) to $1.75 in 2014 – a nearly 4 fold increase, and 3x as expensive as SP
Summary of National Trends – 2014

2. The role of the private sector in malaria case management:

- About half of all antimalarials distributed in Kenya were QA ACT, most through the private sector.
- 1 in 5 antimalarials were Non QA ACT, almost exclusively through the private sector.
- 1 in 4 antimalarials distributed were SP, most through the private sector.
- SP is commonly available and distributed by the private sector.
- Most SP products audited were manufactured in Kenya.
3. Urban/rural comparisons:

- Availability of QA ACT in the public and private sector was similar across urban and rural areas.

- Most antimalarials in urban areas were distributed through the private sector, compared with about 75% in rural areas. Availability and distribution of non-quality assured ACTs among private sector outlets is higher in urban versus rural areas.

- Availability of malaria blood testing in public health facilities is similar in urban versus rural areas.

- Among private sector outlets, malaria blood testing is more commonly available in urban as compared to rural areas.
Progress Against National Malaria Strategic Plan 2011-2018
Kenya Malaria Strategy 2009-2017

1. Increase capacity for malaria diagnosis and treatment

2. Increase access to affordable ACTs and diagnostics in private sector

3. Expand access to Community Health Workers

4. Secure commodities of antimalarials and diagnostics in the public sector
## Progress: Kenya Malaria Strategy 2009-2011

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Public Sector</th>
<th>Private Sector</th>
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<tbody>
<tr>
<td>ACTs</td>
<td>✓</td>
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<tr>
<td>Blood Testing</td>
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<tr>
<td>Increase CHWs</td>
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</table>
Acknowledgements

- Ministry of Health
- National Malaria Control Program
- Kenya Pharmacy and Poisons Board
- Ipsos Kenya
- Fieldwork Team
- ACTwatch Team
Thank you!
Rapid Diagnostic Test Availability (RDT)

Among outlets stocking antimalarials, 2010-2014
Private sector median price of antimalarials

Includes SP, QA ACT adult equivalent doses (AETD) and pre-packaged pediatric QA AL, 2014
Types of ACT found among private and public outlets

Among all AM medicines audited, across sector, 2014

<table>
<thead>
<tr>
<th>QA ACT Public</th>
<th>Non-QA ACT Public</th>
<th>QA ACT Private</th>
<th>Non-QA ACT Private</th>
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<tbody>
<tr>
<td>N=979</td>
<td>N=62</td>
<td>N=2,245</td>
<td>N=3,093</td>
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- **AL tablet**
- **ASAQ tablet**
- **ASMQ tablet**
- **A PPQ tablet**
- **AS SP tablet**
- **ASMQ non-tablet**
- **AL non-tablet**
- **DHA PPQ tablet**
- **DHA PPQ non-tablet**