Benin: 2014 ACTwatch Outlet Survey
Malaria Indicator Survey 2014
# Presentation outline

**ACTwatch Project**
- ACTwatch in Benin  

**Outlet survey methods**
- Study population  
- Sampling  
- Product audit  
- Provinces  

**Outlet survey results**
- Antimalarial availability  
- Antimalarial market share  
- Antimalarial price  
- Malaria diagnostic availability  
- Provider drug knowledge  
- Urban/rural comparisons  

**Summary of National Trends**  

**Progress against NMSP (2011-2018)**

---

2 | Benin Outlet Survey Results | December 2015 | Business Use Only
The ACTwatch project
ACTwatch produces standardized malaria medicine & diagnostic evidence in 13 countries
ACTwatch in Benin

- National Outlet Surveys
  - 2008
  - 2009
  - 2011
  - 2014

- National Household Surveys
  - 2009
  - 2011

- Antimalarial Supply Chain Study
  - 2009
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
  - Pharmacy
  - General Retailer
  - Drug Shop
  - Itinerant Vendor
Sampling

- Representative sample of clusters (arrondissements) from urban and rural areas: 14 urban arrondissements, and 9 rural arrondissements selected

- Complete a census of all potentially eligible outlets

- Extend the census area to the commune level to boost the sample size for key market segments, including pharmacies, drug stores, and public health facilities

- 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
# Provinces

## Urban
- Cotonou
  - 2nd Arrondissement
  - 5th Arrondissement
  - 9th Arrondissement
  - 12th Arrondissement
- Kerou
- Bembereke
- Parakou
  - 2nd Arrondissement
- Djougou
  - Djougou III
- Abomey-Calavi
- Dogbo
  - Tota

## Urban
- Adjara
  - Adjara II
- Porto Novo
  - 4th Arrondissement
- Adja-Ouere
- Bohicon
  - Bohicon II

## Rural
- Materi
  - Nodi
- Sinende
  - Sikki
- So-Ava
  - Ganvie I
- Toviklin
  - Adjido
- Za-Kpota
  - Allahe
- Gogounou
  - Gounarou
- Save
  - Kaboua
- Come
  - Akodeha
Outlet Survey Results - Antimalarials
Outlet Survey Sample

4,369 outlets enumerated

4,332 outlets screened

2,061 outlets met screening criteria

1,948 outlets interviewed

37 outlets not screened

2,271 outlets did not meet screening criteria

113 outlets not interviewed

4,332 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

<table>
<thead>
<tr>
<th>Public Health Facility</th>
<th>Community Health Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2011</td>
</tr>
</tbody>
</table>

Percentage of outlets

- 2009
- 2011
- 2014
Availability of any antimalarial, all sectors

Among all screened outlets, across survey round

![Graph showing availability of antimalarials across different sectors and years.](Image)

- **Public Health Facility**
- **Community Health Worker**
- **Private For-Profit Facility**
- **Pharmacy**
- **General Retailer**
- **Itinerant Vendor**

---

15 | Benin Outlet Survey Results | December 2015 | Business Use Only
What types of outlets are stocking antimalarials?
Market Composition

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

2009
N=626

- Public Health Facility: 53%
- Community Health Worker: 7%
- Private Not For-Profit Facility: 9%
- Private For-Profit Facility: 25%

2011
N=890

- Public Health Facility: 67%
- Community Health Worker: 5%
- Private Not For-Profit Facility: 1%
- Private For-Profit Facility: 16%
- Pharmacy: 3%

2014
N=1501

- Public Health Facility: 59%
- Community Health Worker: 11%
- Private Not For-Profit Facility: 1%
- Private For-Profit Facility: 1%
- Pharmacy: 11%
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
Types of ACT found among private and public outlets

Among all AM medicines audited, across sector, 2014

QA ACT Private
N=1812
- AL tablet
- ASAQ tablet
- DHA PPQ tablet
- AL non-tablet

QA ACT Public
N=671
- A NAP tablet
- ASMQ tablet
- DHA PPQ Trim tablet
- ASAQ non tablet

Non-QA ACT Private
N=6293
- A PPQ tablet
- ASSP tablet
- DHA SP tablet
- DHA PPQ non-tablet
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

![Chart showing availability of QA ACTs in the public sector over years 2009, 2011, and 2014 for Public Health Facility (green) and Community Health Worker (yellow).]
Availability of QA ACTs, 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 2012, the project is a private sector co-payment mechanism only.

- Countries with the Global Fund co-payment mechanism include Nigeria and Ghana.
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Health Facility</th>
<th>Community Health Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 non-QA ACTs in the public sector

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

Among all outlets 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 DHA PPQ
- Typically tablets except Bimalaril suspension
- Country of manufacture – most from India or China
- 6,293 drugs found

Non-QA ACT Private
N=6293

- AL tablet
- ASAQ tablet
- DHA PPQ tablet
- AL non-tablet
- A NAP tablet
- ASMQ tablet
- DHA PPQ Trim tablet
- ASAQ non tablet
- A PPQ tablet
- ASSP tablet
- DHA SP tablet
- DHA PPQ non-tablet
Availability of SP, public health sector

Among all public health facilities 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
Types of SP available in the private sector

- Tablet formulation, typically 3-tablet packages
- 23 separate brands of SP found
- Country of manufacture – most from India or Nigeria
Types of other non-artemisinin therapies available in the private sector

- Tablet formulation, not the injectables used for severe malaria
- 9 separate brands found
- Quinine by Pharmaquick made in Benin
- Chloroquine by Syncom made in India
What is the antimalarial market share between the public and private sectors?
Antimalarial Market Share

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

[Chart showing market share for various distribution channels: Public, Private, Private-For-Profit Facility, Pharmacy, Drug Store, General Retailer, Itinerant Vendor.]

34 | Benin Outlet Survey Results | December 2015 | Business Use Only
Antimalarial Market Share

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

![Bar chart showing market share by sector and drug class for antimalarial AETDs in 2014. The chart compares public, private, private-for-profit facility, pharmacy, drug store, general retailer, and itinerant vendor sectors, with different colors representing different drug classes: Quality Assured ACT (QAACT), Non-quality-assured ACT, SP, Other non-artemisinin therapy, Oral artemisinin monotherapy, and Non-oral artemisinin monotherapy.]
How much do antimalarials cost in the private sector?
Among all drugs of this type available in the private sector, in 2009 US dollars.
Outlet Survey Results – Blood testing
Is malaria blood testing available where antimalarials are distributed?
Malaria Diagnostic Test Availability (RDT or MST)
Among outlets stocking antimalarials, 2011 and 2014

- Public Health Facility
- Private-For-Profit Facility
- General Retailer
- Community Health Worker
- Pharmacy
- Itinerant Vendor

Percentage of outlets

2011

2014

40 | Benin Outlet Survey Results | December 2015 | Business Use Only
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 percentage of outlets over time and by type of outlet (Public Health Facility, Community Health Worker, Private-For-Profit Facility, Pharmacy, General Retailer, Itinerant Vendor).]
Urban/Rural Comparisons
Is the availability of antimalarials 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

Percentage of sector market volume

- Quality Assured ACT (QAACT)
- Non-quality-assured ACT
- SP
- Other non-artemisinin therapy
- Oral artemisinin monotherapy
- Non-oral artemisinin monotherapy
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
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

![Graph showing availability of SP at public health facilities and general retailers in urban and rural areas.](image-url)
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

Urban

Rural

Microscopie  RDT
Summary: National Trends
Summary of National Trends – 2014

1. Improving readiness of public health facilities to appropriately manage malaria cases:
   
   ✔ High availability of ACTs (90%) and malaria RDTs (87%) in public health facilities
   
   ✔ High provider knowledge of first-line treatment (>90%)
   
   ➢ Growing availability of SP for IPTp (46% in 2014, up from 18% in 2011)
   
   ➢ CHW percentage of antimalarial market at 11% in 2014, down from 16% in 2011
Summary of National Trends – 2014

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

- 82% of antimalarials are distributed by the private sector, 60% by pharmacies and general retailers.
- Most non-artemisinin therapies, including locally-manufactured quinine tablets and imported chloroquine and SP tablets, are sold in the private sector.
- Availability of malaria blood testing services is low in the private sector – only 12% of private for-profit facilities, and no others.
- ‘Green leaf’ QA ACTs were found in 30-40% of private for-profit health facilities, general retail shops, and mobile vendors.
- QA ACTs cost 4 times more than SP in the private sector, but is now at its lowest price since 2009*. SP remains inexpensive by comparison.
Summary of National Trends – 2014

3. Urban/rural comparisons:
   - Public sector readiness for malaria case management was high for QA ACT availability and testing in both urban and rural areas
   - Microscopic testing in the public sector is available almost exclusively in urban areas (40% of urban PHFs have MST, 1% of rural PHFs have MST)
   - There are no urban/rural differences for the availability of RDTs in the public sector
   - Rural public health facilities sell more SP than urban public health facilities
   - Private sector in urban areas sells mainly SP and non-QA ACT
   - Private sector in rural areas sells mainly quinine and chloroquine
   - SP availability is higher among urban (34%) private sector locations than rural (6%)
Progress Against National Malaria Strategic Plan 2011-2018
1. IPTp – free universal access to IPTp in pregnant women
   • low SP availability in the public sector (46%)

2. Blood test all suspected malaria cases
   • High availability in the public sector (90%) but nearly zero in private sector*

3. Firstline treatment of malaria with ACTs, AL, AS/AQ
   • High availability in public sector and pharmacies (>90%), low among retailers and mobile vendors (<30%)
4. Increased access to malaria diagnostics and treatment:
   • ACT access has increased to 90% in 2014 from 79% in 2011 among public health facilities and from 19% in 2011 to 38% in 2014 among general retailers
   • RDT access has increased from 37% in 2011 to 87% in 2014 among public health facilities

5. Increased access to CHWs, particularly in rural areas
   • In 2014, 78 CHWs were screened in rural areas, and 53% were stocking antimalarials

6. (PMI)-Increase access to ACTs to 85% of governmental health facilities
   • Over 90% of public health facilities carried ACTs in 2014
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Public Sector</th>
<th>Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPTp</td>
<td>x</td>
<td>--</td>
</tr>
<tr>
<td>Blood Testing</td>
<td>v</td>
<td>x</td>
</tr>
<tr>
<td>ACTs</td>
<td>v</td>
<td>x</td>
</tr>
<tr>
<td>Increase CHWs</td>
<td>x</td>
<td>--</td>
</tr>
</tbody>
</table>
Acknowledgements

- Ministry of Health
- National Malaria Control Program
- Afrikonsulting Group
- Fieldwork Team
- ACTwatch Team
Merci!
Annex
Availability of microscopic testing

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

<table>
<thead>
<tr>
<th>Percentage of outlets</th>
<th>2009</th>
<th>2011</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Facility</td>
<td>10</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Private-For-Profit Facility</td>
<td>5</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Community Health Worker</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>General Retailer</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Itinerant Vendor</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Availability of rapid diagnostic testing

Among all outlets with at least one antimalarial in stock, 2011 and 2014

- Public Health Facility
- Community Health Worker
- Private-For-Profit Facility
- Pharmacy
- General Retailer
- Itinerant Vendor
Private sector median price of antimalarials
Includes SP, QA ACT adult equivalent doses (AETD) and pre-packaged pediatric QA AL, 2014

<table>
<thead>
<tr>
<th></th>
<th>Private-For-Profit Facility</th>
<th>Pharmacy</th>
<th>Drug Store</th>
<th>General Retailer</th>
<th>Itinerant Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP AETD</td>
<td>$0.52</td>
<td>$1.03</td>
<td>$0.52</td>
<td>$1.03</td>
<td>$0.52</td>
</tr>
<tr>
<td>QA ACT AETD</td>
<td>$5.77</td>
<td>$2.47</td>
<td>$1.65</td>
<td>$3.30</td>
<td>$1.44</td>
</tr>
<tr>
<td>Pre-packaged pediatric QA AL</td>
<td>$1.44</td>
<td>$1.03</td>
<td>$0.52</td>
<td>$0.62</td>
<td></td>
</tr>
</tbody>
</table>
Private sector median price of AETD, 2014

Among all drugs of this type available in the private sector, in 2014 US dollars