ACTWATCH RESEARCH BRIEF

## Contents

Background ........................................................................................................................................... 1

ACTwatch at a glance ................................................................................................................................. 1

Methods .................................................................................................................................................. 1

Sample .................................................................................................................................................... 1

Market composition .................................................................................................................................... 1

Antimalarial availability ............................................................................................................................ 1

Antimalarial market share ........................................................................................................................ 1

Private sector price .................................................................................................................................... 1

Malaria blood testing availability ............................................................................................................. 1

Urban and rural comparisons ................................................................................................................... 1

Summary .................................................................................................................................................. 1
Background

The target for malaria case management in Benin is to ensure that 100 percent of all fever cases receive a parasitological diagnosis, by microscopy or rapid diagnostic test (RDT), followed by appropriate treatment.

MALARIA SITUATION IN BENIN

Benin’s 2014 population was 10.6 million people, with an estimated growth of 3.5 percent per year. Children under 15 account for 42.5 percent of the total population. One hundred percent of the population is at risk for malaria and live in high endemic areas. Malaria is the leading cause of mortality among children under five; more than 40 percent of malaria cases in health centers occur in this age group.

MALARIA PREVALENCE

Malaria is endemic to Benin, with stable transmission throughout the country. Benin has three regions categorized by mosquito breeding and transmission patterns: the coastal region has heterogeneous transmission, the central region, where malaria is holoendemic, and the northern region where malaria is seasonal. Nationwide, malaria parasitemia prevalence with the *Plasmodium falciparum* (pf) parasite was 28 percent in 2011-2012 among children under five. According to the Ministry of Health 2011 health report, malaria is the leading cause of child mortality, and the leading cause of adult morbidity.

NATIONAL TREATMENT GUIDELINES

The 2011-2018 Benin National Strategic Plan (NSP) recommends testing after treatment as part of effective case management at all levels of care.

Benin uses the Artemisinin-based Combination Therapy (ACT) Artemether Lumefantrine (AL) as the first-line treatments for uncomplicated malaria and Artesunate Amodiaquine (ASAQ) as the first-line treatment for children under six months and pregnant women. The NSP also promotes free access to Sulfadoxine Pyrimethamine (SP) for IPTp (intermittent preventive treatment in pregnancy) for malaria.

The central medical stores (CAME) in Benin are stocking injectable artesunate, and the next version of the malaria case management guidelines are prepared to include injectable artesunate as the first-line treatment for severe malaria.

GOAL OF THE BENIN MALARIA CONTROL STRATEGY

The revised Benin National Strategic Plan 2011-2018’s primary targets are to reduce the number of cases by 75% from those reported in 2000, to reduce the national mortality rate to one per 100,000 persons, and to strengthen the malaria program. Broad objectives of the malaria strategy related to appropriate case management include:

1. Increase access to malaria diagnostics and appropriate treatment
2. Increase access to CHWs, targeting rural areas
3. Ensure free universal access of IPTp to pregnant women
4. Blood test all suspected malaria cases, either with microscopy or RDT
5. Treat all confirmed malaria cases with ACTs: AL or ASAQ

KEY INTERVENTIONS

In 2011, Benin launched the Free Malaria Care Initiative to provide free malaria treatment to children under five and pregnant women, implemented through community health workers (CHWs). In 2014, public health facilities began using a performance-based funding mechanism to repay these facilities for treatment of confirmed malaria cases. In addition, the President’s Malaria Initiative (PMI) provided over two million doses of ACT in 2015, and no central-level stockouts occurred during that time. To improve access to malaria diagnostics, the National Malaria Control Program (NMCP) of Benin partnered with the Global Fund to increase stock of rapid diagnostic tests for malaria (RDT) and to train CHWs on RDT use. Under this effort, 72 percent of CHWs have been trained on using RDTs. The President’s Malaria Initiative (PMI) has also provided two million RDTs to the country in 2015.

References on this page:

Photo credit: Steve Poyer
WHAT IS ACTWATCH?
ACTwatch is a multi-country research project implemented by Population Services International (PSI). Standardized tools and approaches are employed to provide comparable data across countries and over time. ACTwatch is designed to provide timely, relevant, and high quality antimalarial market intelligence, including information on ACTs and RDTs. The project was launched in 2008 with funding from the Bill and Melinda Gates Foundation (BMGF), and is currently funded through 2016 by the BMGF, UNITAID, and the Department of International Development (DFID). Research methods implemented include outlet and household surveys, supply chain studies, and key informant interviews.

GOAL
The goal of the ACTwatch project is to provide policymakers with evidence to inform and monitor national and global policy, strategy, and funding decisions for improving malaria case management and elimination efforts.

RELEVANCE
ACTwatch market monitoring in Benin from 2009 to 2014 has been implemented in the context of national strategies designed to improve coverage of appropriate malaria case management. These efforts include:

- National efforts to improve availability of malaria blood testing and ensure continuous stock of ACT.
- National efforts to extend malaria blood testing and antimalarial treatment to community level through equipping CHWs with RDTs and ACTs.
- Multiple strategies to introduce and scale up the use of ACT and malaria RDTs in public and private sectors, supported by multiple partners including the World Bank, the Global Fund, and the President’s Malaria Initiative.

OUTLET SURVEYS
Outlet surveys are the core component of the ACTwatch project. The outlet surveys in Benin were designed to monitor key antimalarial market indicators at the national level and within urban/rural domains. This summary report presents trends from the three most recent outlet surveys conducted in 2009, 2011 and 2014.
What questions are answered by the outlet survey?

What types of outlets in the public and private sectors are distributing antimalarials and providing malaria blood testing?

What types of antimalarials and RDTs are available and distributed by public and private sector?

What proportion of public and private sector antimalarial medicine outlets are stocking: 1) quality-assured ACT; 2) non-quality-assured ACT; and 3) malaria blood testing?

What is the antimalarial market share of quality-assured ACT relative to the market share for other types of antimalarials?

What is the consumer price for antimalarial medicines and malaria blood testing among private sector outlets?

The ACTwatch Countries, 2016
Methods

ACTwatch implements standardized methods and questionnaires that allow for comparisons between countries and survey rounds. A full census of all outlets providing malaria care and a full audit of all available antimalarials provides a complete picture of the antimalarial market.

HOW IS THE SAMPLING CONDUCTED?
A nationally representative sample of outlets providing antimalarials to consumers was selected. In Benin, a one-stage cluster sampling approach was used to select clusters (arrondissements) within each stratum, with cluster population serving as the measure of size. The primary sampling unit, or cluster, is usually an administrative unit with 10,000 to 15,000 inhabitants.

WHAT TYPES OF OUTLET S ARE SAMPLED?
The main types of outlets sampled include public and private not-for-profit facilities, CHWs, private for-profit facilities, pharmacies, drug stores, general retailers, and itinerant drug vendors.

HOW ARE THE OUTLETS IDENTIFIED?
The ACTwatch outlet survey includes all outlets with the potential to sell antimalarial medicines. As many of these outlets may be unregistered, mobile or recently opened, official listings of these shops and their locations are not typically available. A census approach was therefore implemented, supported by the use of key informant interviews with local officials, local maps, and lists of registered outlets where available.

WHAT IS AN OUTLET CENSUS?
This involves a team of data collectors moving systematically through a defined area in order to identify all outlets that have the potential to sell or distribute antimalarials.

WHAT HAPPENS AFTER AN OUTLET IS IDENTIFIED?
The outlet is screened for availability of malaria medicines or diagnostic testing. Outlets are included in the survey if they have antimalarials or malaria diagnostic tests in stock at the time of survey or in the previous 3 months. Permission to conduct the interview is obtained from the main provider.

HOW IS INFORMATION ON ANTIMALARIALS AND RDTs CAPTURED?
Among outlets with antimalarials or and malaria tests in stock, a full audit of the antimalarials and diagnostic tests is conducted. Information is recorded for each unique antimalarial and RDTs identified in the outlet.

WHAT INFORMATION IS RECORDED ON THE AUDITS?
An audit sheet is completed for each unique antimalarial and RDT in stock. The audit sheet captures product information from the product package including the brand name, the manufacturer, country of manufacturer, formulation and strength. The audit sheet also captures information from the provider including the amount sold in the last seven days and the retail price. If a particular product is available in multiple package sizes, strengths, or formulations, an audit sheet is completed for each unique product.

Comprehensive product information and provider reports on amount distributed and retail price allow for calculating estimates of antimalarial availability, price, and relative market share.
Sample

Antimalarial outlet types

**HOW MANY OUTLETS WERE INCLUDED IN THE SAMPLE AND SCREENED?**
Across the survey rounds, between 1,800 and 4,300 outlets were enumerated (i.e. identified as outlets with potential to sell or distribute antimalarials). Of these, 89 percent in 2009, 97 percent in 2011, and 99 percent in 2014 were screened for antimalarial availability. Among those that were screened, the percent that were interviewed across the survey rounds was similar over time: 57 percent in 2009, 47 percent in 2011, and 45 percent in 2014.

Notes:

1: Antimalarials in stock on day of visit
2: Antimalarials reportedly in stock during the previous 3 months but not on the day of the visit
3: Malaria blood testing available but no antimalarials in stock
* Outlets enumerated: Identified as outlets with potential to sell or distribute antimalarials and/or provide malaria blood testing during the census or booster sampling.
** Outlets screened: Administered questions to assess current or recent (previous 3 months) availability of antimalarials and malaria blood testing (microscopy or RDT)
~ Outlets interviewed: A partial or complete interview was conducted with an outlet representative.
1 in 2
Number of outlets that met the screening criteria across survey rounds

<table>
<thead>
<tr>
<th>Year</th>
<th>Outlets enumerated*</th>
<th>Outlets screened</th>
<th>Outlets interviewed**</th>
<th>Outlets that met screening criteria</th>
<th>Outlets that did not meet screening criteria</th>
<th>Outlets not interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2,966</td>
<td>2,867</td>
<td>1,390</td>
<td>1,519</td>
<td>1,348</td>
<td>129</td>
</tr>
<tr>
<td>2014</td>
<td>4,369</td>
<td>4,332</td>
<td>1,948</td>
<td>2,061</td>
<td>2,271</td>
<td>113</td>
</tr>
</tbody>
</table>
Market composition

WHAT IS ANTIMALARIAL MARKET COMPOSITION?
Antimalarial market composition illustrates the distribution of all outlets that were found to have at least one antimalarial in stock on the day of survey. The pie charts illustrate the distribution of these antimalarial-stocking outlet types according to the public and private sector, by each outlet category.

TRENDS IN ANTIMALARIAL MARKET COMPOSITION
Unregulated private sector outlets, including itinerant vendors and general retailers, accounted for over 70 percent of all antimalarial-stocking outlets over each survey round. The market composition for private for-profit facilities and pharmacies has remained largely unchanged over the years, making up ten percent of the market composition in 2009 and 2014.

By contrast, the public sector market composition has seen an expansion in community health workers, especially in rural areas, from not being identified among antimalarial-stocking outlets in 2009, to a 16 percent share in 2011 and an 11 percent share in 2014.
Antimalarial availability

Availability of antimalarials by outlet type

**ANTIMALARIAL AVAILABILITY AMONG SCREENED OUTLETS**

The census approach involved a search for all outlets that had the potential to sell antimalarial medicines in each selected area. This graph shows the percentage of outlets that were found to have at least one antimalarial in stock on the day of the survey, among all outlets that were screened across the three survey rounds.

In the public sector, antimalarial availability on the day of the survey in public health facilities remained high over time (greater than 90 percent). However, in 2014, a slight decline was observed in community health workers, from over 80 percent in 2011 to 53 percent in 2014.

In the private sector, antimalarial availability among pharmacies remained high and relatively stable over time (>90 percent). Private for-profit facilities also had stable availability of antimalarials, at or above 80 percent at each survey round. Around one-third of general retailers were stocking antimalarials in any given year, while availability among itinerant drug vendors has steadily grown from 43 percent in 2009 to 68 percent in 2014.

**+90%**

Availability of antimalarials in public health facilities over time

**1/3**

The fraction of general retailers who carried antimalarials over time

**↑ 25**

Percentage point increase in antimalarial availability among itinerant vendors, 2009 to 2014
WHAT TYPES OF ANTIMALARIALS ARE STOCKED?
There are a number of key categories of antimalarials dispensed by outlets in Benin. These include quality-assured ACTs (QA ACT), QA ACT with a ‘green leaf’ logo, non-quality-assured ACTs (non QA ACT), and other non-artemisinin therapies including Sulfadoxine-Pyrimethamine (SP), quinine, and chloroquine.

QUALITY-ASSURED VERSUS NON-QUALITY-ASSURED ACT
Quality-assured ACT are ACT that comply with the Global Fund to Fight AIDS, Tuberculosis, and Malaria’s Quality Assurance Policy. A quality-assured ACT is any ACT that appeared in the Global Fund’s indicative list of antimalarials meeting the Global Fund’s quality assurance policy prior to data collection, or that previously had C-status in an earlier Global Fund quality assurance policy. Quality-assured ACT also include those ACT that had been granted regulatory approval by the European Medicines Agency – specifically Eurartesim® and Pyramax®.

Non-quality-assured ACT are all ACT that do not have approval from a stringent regulatory authority, and do not have WHO Good Manufacturing Practices (GMP).

ACTs with the ‘green leaf’ logo are those that are distributed as a part of the Global Fund co-payment funding mechanism, a continuation of the Affordable Medicines Facility-malaria (AMFm) pilot. These ACTs are co-paid and available to first-line buyers at a subsidized cost. They are distinguishable from other ACTs by a specified logo on the packaging. Benin was not a participant country in the AMFm pilot or subsidy program, yet ‘green leaf’ logo antimalarials have been found in Benin. According to the 2009 Benin Supply Chain Survey (available at www.actwatch.info), Nigeria was a source for private sector antimalarials, and was also a participant in the Global Fund subsidy mechanism.

NON-ARTEMISININ THERAPIES
Several types of non-artemisinin therapies were audited in both the public and private sector. SP was found in both the public sector, for use in IPTp, as well as the private sector, where the manufacturer packaging marketed SP for the treatment of malaria in people of all ages. Quinine was found in both sectors, primarily in tablet form and manufactured locally by Pharmaquick. Tablet formulations of chloroquine were also found in the private sector, over half of which was manufactured by Syncom from India.

TYPES OF NON-ARTEMISININ THERAPIES, OTHER THAN SP, FOUND IN THE PRIVATE SECTOR IN 2014

Common manufacturers of non-artemisinin therapies included Quinine by Pharmaquick made in Benin, and Chloroquine by Syncom made in India.
Availability of quality-assured ACTs

QUALITY-ASSURED ACT
Among antimalarial-stocking outlets, public health facilities have seen high levels of quality-assured ACT availability across each survey round (>80 percent). Community health workers, though they were not carrying QA ACT in 2009, have had availability above 90 percent in both 2011 and 2014.

In the private sector, availability among pharmacies has remained high (>87 percent) across each round of the survey, while private for-profit outlets started with low availability in 19 percent in 2009 but grew to 88 percent in 2014. General retailers and itinerant vendors less commonly carry quality-assured ACT (<40 percent in any survey), but availability is growing in both outlet types: from 3 percent in 2009 to 37 percent in 2014 for general retailers, and from 1 percent in 2009 to 29 percent in 2014 for itinerant drug vendors.

ACT WITH THE ‘GREEN LEAF’ LOGO
Though Benin was not part of the initial pilot for the Affordable Medicines Facility, malaria (AMFm) program, and has not yet accessed the co-payment mechanism under the Global Fund’s new model, which would result in availability of subsidized ACTs with the ‘green leaf’ logo, these drugs were found in the private sector in Benin.

Over one-third of private for-profit facilities (37 percent) had these drugs available in 2014, along with 34 percent of general retailers and 26 percent of itinerant vendors. This indicates the possibility that drugs from neighboring Nigeria, which was participating in the AMFm program, have found their way into Benin’s private sector antimalarial market.
Availability of non-quality-assured ACTs and SP

**AVAILABILITY OF NON-QUALITY-ASSURED ACT**
Pharmacies have seen the highest levels of non-quality-assured ACT availability, among all antimalarial-stocking outlet types, with 93 percent of these outlets carrying non-QA ACT in 2014. Availability among private for-profit facilities has increased from 5 percent in 2009 to 11 percent in 2014, these gains are slight. All other outlet types had very low availability of non-QA ACT across all survey rounds (<6 percent).

**AVAILABILITY OF SP**
SP is used for the intermittent preventive treatment of malaria in pregnant women, according to the 2011-2018 Benin Strategic Plan, and is dispensed during antenatal clinic visits. Availability of SP in public health facilities declined from 2009, at 52 percent, to 2011, at 18 percent. Fewer than half of all antimalarial-stocking public health facilities had SP available in 2014 (46 percent).

In the private sector, SP availability was considerably higher among pharmacies, where more than 70 percent of locations carried SP in each survey year. Over half itinerant vendors had SP in 2014 (53 percent), and nearly one in five general retailers (18 percent).

It is worth noting that most types of SP found in the private sector were marketed according to product packaging for treatment of malaria in people of all ages.
AVAILABILITY OF NON-ARTEMISININ THERAPY
Among all outlets stocking at least one antimalarial, pharmacies had the highest levels of availability of all types of non-artemisinin therapies compared to other outlet types in the latest survey round. Oral quinine (quinine tablets) was the most commonly stocked non-artemisinin therapy, with availability in over 80% of public health facilities, near 70% of private for-profit facilities, pharmacies, and over itinerant drug vendors, and over 30% of general retailers.

Injectable quinine, which may be used to treat severe cases of malaria, was found in more than 60% of public and private for-profit facilities, and nearly half of pharmacies. In contrast, chloroquine was more commonly found among general retailers (66%) and itinerant vendors (34%). Over 90% of the chloroquine available in the private sector is tablet formulation made in India. The rest of the chloroquine is largely syrups.

SEVERE MALARIA TREATMENT
The WHO recommends the following antimalarials for treatment of severe malaria: parenteral artesunate, artemether, and quinine. Rectal artesunate is recommended for pre-referral treatment. More than 75 percent of public health facilities had severe malaria treatment in stock in 2014, up from 65 percent in 2009. Private for-profit facilities (67 percent) and pharmacies (75 percent) also had high availability of severe malaria treatment. Across all survey rounds, less than two percent of general retailers and no itinerant vendors were found to have this treatment in stock.

>80%
Percent of public health facilities that had oral quinine in stock in 2014

>60%
Percent of pharmacies that had other non-artemisinin therapies in stock in 2014. Examples of these therapies include amodiaquine or mefloquine.
Antimalarial market share

Role of the public and private sector

WHAT IS ANTIMALARIAL MARKET SHARE?
Market share of antimalarials, or the relative public and private sector distribution for all antimalarials, is estimated using information about reported distribution of each antimalarial dispensed to individual customers during the week preceding the survey.

WHAT WAS THE ANTIMALARIAL MARKET SHARE OF THE PUBLIC AND PRIVATE SECTORS IN 2014?
The private sector held the larger portion of antimalarial market share at 71 percent of antimalarials sold or distributed in 2014. The largest contributor came from general retailers, with 32 percent of the market share. Pharmacies and private for-profit facilities together represented one third of the antimalarial market, with 19 percent and 12 percent share, respectively. Itinerant vendors were the smallest contributor to private sector market share with 8 percent.

In 2014, QA ACT had 35 percent of the total antimalarial market share, and most were distributed by the public sector. Non-quality assured ACT had 13 percent of that share and were distributed by pharmacies. Non-artemisinin therapies had 51 percent of the antimalarial market share, including chloroquine (15 percent of the total share), quinine tablets (12 percent), and SP (23 percent of total share), most of which was distributed by general retailers and itinerant drug vendors.

1 in 3
Antimalarials were distributed by general retailers

1 in 2
Antimalarials distributed was a non-artemisinin therapy, such as chloroquine, quinine, or SP
HOW IS PRICE CALCULATED?
Antimalarial price is using the median price of an adult equivalent treatment dose for tablet formulations of each antimalarial type. An adult equivalent treatment dose (AETD) is the number of milligrams of an antimalarial drug required to treat an adult weighing 60 kilograms. However, it should be noted that the price for one AETD is not necessarily the price that consumers commonly pay for a given antimalarial, particularly when less than a full adult course is purchased. The relatively high price of quinine in the figure below is the median price for a full course. Yet, when consumers purchase quinine, they may typically purchase less than a full course.

HOW DID ANTIMALARIAL PRICE VARY OVER TIME?
The price of QA ACT has dropped considerably over time: in 2011, QA ACT were under half the cost from 2009, and the price dropped again 2014. The price of non-QA ACT remained high, but did see slight reductions in price at each survey round. The price of SP remained low over time, and did see a slight reduction in cost from 2009 to 2011. The price of quinine stayed relatively stable over time, but increased in price relative to QA ACT. Chloroquine remained inexpensive, and similar to the cost of SP across survey round.

HOW DID ANTIMALARIAL PRICE VARY BY DRUG TYPE?
Non-artemisinin therapies, including SP and chloroquine, tend to be less expensive than ACTs. Quality-assured ACTs are cheaper than non-quality-assured ACTs.
Malaria blood testing availability

Outlet types that offer malaria blood testing

WHEN PEOPLE SEEK TREATMENT FOR FEVER, WHERE WILL THERE BE AN OPPORTUNITY TO CONFIRM THEIR DIAGNOSIS?

This graph shows the percentage of outlets that had a diagnostic test available, either microscopy or an RDT, among all antimalarial-stocking outlets.

In the public sector, availability of any malaria diagnosis on the day of survey among antimalarial-stocking public health facilities increased from 40 percent in 2011 to 90 percent in 2014. Community health workers offered diagnostic services for the first time in 2014, but availability was just over 12 percent.

In the private sector, trends in for-profit facilities suggest a slight decline in malaria diagnostic availability between 2011 and 2014. Among pharmacies, availability was 33% in 2011, but no pharmacies were recorded as offering diagnostic services in 2014.

90%
Availability of diagnostic testing in public health facilities in 2014

↑50
Percentage point increase in malaria diagnosis availability in the public sector between 2011 and 2014

<3%
Average availability of diagnostic services among all private sector outlet types
Urban and rural comparisons

Differences in availability and market share

ARE THERE DIFFERENCES IN OUTLET TYPES ACROSS URBAN AND RURAL AREAS?
The 2014 survey round found several distinctions of outlet types by urban or rural domain. Private for-profit facilities, pharmacies, and itinerant vendors were found largely in urban areas, while community health workers were found mainly in rural facilities. Only public health facilities and general retailers were commonly found in both locations (see page 13).

ARE THERE DIFFERENCES IN ANTIMALARIAL AVAILABILITY ACROSS URBAN AND RURAL AREAS?
There is little urban/rural variation in ACT availability by outlet type, including any ACT, QA ACT, and 'green leaf' logo ACT. Differences were seen in the urban and rural availability of SP; more rural public health facilities stocked SP than urban locations in 2014 (53 compared to 29 percent), and more urban general retailers had SP than rural retailers (34 compared to 6 percent).

ARE THERE DIFFERENCES IN DIAGNOSTIC AVAILABILITY ACROSS URBAN AND RURAL AREAS?
In 2014, blood testing by microscopy was more commonly found in urban public health facilities (40 percent) compared to rural locations (1 percent). Data trends suggest an inverse relationship with RDTs, with higher availability in rural public health facilities (90 percent) compared to urban locations (82 percent).

ARE THERE DIFFERENCES IN MARKET SHARE ACROSS URBAN AND RURAL AREAS?
Considerable differences were noted during the 2014 outlet survey in antimalarial market share across urban and rural domains. In urban areas, the private sector had 83 percent of the market share, compared with 53 percent in rural areas. While about half of the antimalarials distributed in rural areas were QA ACT, the QA ACT market share in urban areas was only 26 percent. In urban areas, Non-QA ACT accounted for 22 percent of the total market share, compared to just 2 percent in rural areas. Other non-artemisinin therapies, including chloroquine and quinine, accounted for 34 percent of antimalarials distributed in rural areas, compared with 23 percent in urban areas, and most of this was through private outlets.

>83% vs. 53%
Percent of market share held by private outlets in urban versus rural areas

~25% vs. ~50%
Percent of antimalarials distributed that were QA ACT in urban versus rural areas

97%
Percent of non-quality assured ACT in urban areas distributed through the private sector
Summary

Recent public and private sector strategies to improve malaria case management in Benin have largely been successful, particularly in the public sector. However, barriers towards adherence to national treatment guidelines exist, specifically low availability of malaria diagnostic services and the relatively high cost of quality-assured ACTs in the private sector, and limited availability of SP for purposes of IPTp in the public sector.

There is high readiness among public health facilities to provide appropriate malaria case management for febrile patients in Benin. At the time of the 2014 national outlet survey, 90 percent of public health facilities had quality-assured ACT and malaria diagnostics in stock. Progress has been made in both of these indicators since the last outlet survey in 2011, when 80 percent of public facilities had QA ACT in stock, and only 40 percent offered malaria blood testing.

Readiness for IPTp in the public sector has seen increases since 2011, when 18 percent of public health facilities were stocking SP. However, availability in 2014 remained below desired levels for sufficient readiness to prevent malaria in pregnancy, at 46 percent of public facilities.

Although the public sector is well prepared to manage febrile patients, offering high availability of malaria blood testing and treatment, the private sector had over 70 percent of the antimalarial share in 2014. Furthermore, 40 percent of all antimalarials distributed in Benin in 2014 were distributed by general retail outlets and itinerant drug vendors. Pharmacies accounted for about 20 percent of all antimalarial distribution. The role of the private sector in antimalarial distribution suggests an ongoing need to engage with pharmacies and for-profit facilities, as well as unregulated outlet types such as retailers and itinerant vendors.

However, these outlet types rarely stock malaria blood tests and this presents a challenge to appropriate malaria case management and to adherence to the national guidelines regarding treating after testing. Private sector outlet types are also more likely to stock and distribute non-quality-assured ACTs and non-artemisinin therapies such as chloroquine, quinine, and SP, more than other outlet types. This presents a challenge to appropriate malaria case management in the private sector as patients seeking treatment in these locations are less likely to reach an outlet that will be able to confirm their diagnosis with a blood test.

Additionally, while the availability of QA ACT among antimalarial-stocking retailers has increased since 2009 to 40% availability in 2014, and 1 in 3 retailers stocked QA ACT with the ‘green leaf’ logo in 2014, these retailers more often distribute cheaper alternatives including the non-artemisinin therapies chloroquine and SP. This draws attention to the importance of examining the market share in the private sector by antimalarial type over what is on the shelves, as availability in these cases may not equate with distribution.

Further, the price of antimalarials in the private sector may also drive access to affordable high-quality malaria medicines. In 2014, quality-assured ACT cost an average of four times more than non-artemisinin therapies such as chloroquine and SP. Although considerable reductions in the price of QA ACT have been observed over time (from $5.74 in 2009 to $1.82 in 2014—a reduction of approximately 70 percent), the 2014 price of one dose of QA ACT in the private sector was still 4 times more expensive than one dose of SP. This, in addition to SP availability and the fact that the SP found in the private sector is marketed for malaria treatment for people of all ages according to product packaging, makes it less likely that patients seeking treatment in the private sector will receive appropriate case management. This will be an important area to examine and address.
to ensure continued progress toward ensuring that all malaria cases are detected and treated according to national policy.

The 2014 study found continued private sector availability and distribution of non-artemisinin therapies including chloroquine, quinine and SP, and non-quality-assured ACTs. The continued availability and distribution of these products is of concern for effective and appropriate malaria case management. Quality-assured ACTs marked with a ‘green leaf’ logo that were made available to countries participating in the AMFM pilot program were found in Benin during the 2014 outlet survey, even though Benin had not participated in the pilot. According to the 2009 Supply Chain Outlet Survey conducted in Benin, it is likely that these medicines came from nearby Nigeria that had participated in the pilot. This is an indication of leakage of Global Fund products from supported countries into the Benin market.

Considerable progress has been made against the malaria case management objectives of the 2011-2018 Benin National Strategic Plan. Increasing access to first-line treatment of malaria has reached nearly universal access in the public sector. Targets to increase access to malaria diagnostics have also been achieved in the public sector, reaching 90 percent availability among public health facilities in 2014. Access to community health workers has also increased from none surveyed in 2009 to 78 surveyed in 2014, 53 percent of whom had antimalarials in stock. Availability of SP in the public sector has also increased since 2011, and reductions in availability of non-quality-assured ACT have been noted during each survey round.

Opportunities exist to address the low availability of confirmatory testing in the private sector, and remove non-QA ACTs and non-artemisinin therapies from the market. Sub-optimal availability of SP for IPTp in the public sector should be addressed, along with the proportion of dispensed quality-assured antimalarials and discontinuation of the use of oral quinine in public health facilities.

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ACTwatch is a multi-country research project designed to provide timely, relevant, and high quality antimalarial market evidence. Launched in 2008 with funding from the Bill and Melinda Gates Foundation, it is currently implemented in 13 countries with additional funding from UNITAID and the DFID. Standardized tools and approaches are employed to provide comparable data across countries and over time.

Project achievements include the implementation of over 40 outlet surveys, most of them nationally representative of the public and private sector, a number of peer reviewed publications, and a repository of antimalarial medicines and rapid diagnostic tests on the website (www.actwatch.info). The project has informed malaria control and elimination strategies and priorities for national control programs and their partners.

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