ACTWATCH OUTLET SURVEY RESULTS

TANZANIA, 2016
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1.1 background
Overview of ACTwatch
ACTwatch has implemented 50 outlet surveys since 2008. Over 360,000 public- and private-sector outlets have been screened for the availability of antimalarials, and more than 50,000 outlets have been audited over the course of the project. ACTwatch has gathered information on branded and generic antimalarial medicine price and sales for over 400,000 antimalarial products.

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 and malaria diagnostic testing market intelligence, including information on artemisinin-based combination therapies (ACT), the most effective treatment for malaria. The project was launched in 2008 with funding from the Bill and Melinda Gates Foundation (BMGF) and is currently funded through mid-2017 by the BMGF, UNITAID, and the Department for International Development (DFID).

Research methods implemented include outlet and household surveys, supply chain studies, key informant interviews, and, in selected countries, a new module to document private-sector fever case management practices using observation and client exit interviews.

What are the project goals and objectives?

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

The objectives include:

1) Generation of relevant, timely, and high-quality antimalarial market evidence;

2) Identification of strengths and gaps in the antimalarial market performance of the public and private sectors, and market readiness to adhere to national guidelines;

3) Dissemination of evidence at national, regional, and international levels; and

4) Reach policy-makers, donors, and implementers with timely evidence to inform policy, strategy, and funding decisions.

Why is ACTwatch relevant?

ACTwatch data provide timely and practical evidence for national malaria programs and their partners. The project monitors antimalarial markets in the context of policy shifts and investments in the scale-up of first-line ACT and blood testing using malaria rapid diagnostic tests (mRDT). This has included adaptation of project methods for the evaluation of the Affordable Medicines Facility-malaria (AMFm) pilot.

What are the outlet surveys?

Outlet surveys are the core component of the ACTwatch project. In the sub-Saharan Africa region, project countries include Benin, the Democratic Republic of Congo (DRC) (in Kinshasa and Katanga), Kenya, Madagascar, Nigeria, Tanzania, Uganda, and Zambia. In the Greater Mekong Subregion, outlet surveys have been implemented in Cambodia, Lao People’s Democratic Republic (PDR), Myanmar, and Thailand.

The 2016 outlet survey was the fourth round of ACTwatch outlet surveys conducted in Tanzania, with previous studies implemented in 2010, 2011 and 2014. The outlet surveys in Tanzania were designed to monitor key antimalarial market indicators at the national level and within urban and rural domains. The outlet survey findings can inform ongoing monitoring and evaluation, as well as adjustment to policy, strategy, and funding decisions to strengthen malaria case management.
The ACTwatch Countries, 2016
What questions are answered by the ACTwatch 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 mRDT are available and distributed by the public and private sectors?

What proportion of public and private sector antimalarial-stocking 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?
1.2 background
Country Background
Important gains in malaria control have been achieved in recent years in Tanzania; however, persistent prevalence of malaria in mainland Tanzania continues to pose a large burden of morbidity and mortality for the country. Nearly the entire Tanzania mainland population (93%) remains at risk of malaria infection, and Tanzania’s National Malaria Control Program (NMCP) estimates that between 60,000 to 80,000 malaria deaths occur annually in mainland Tanzania. Those most at risk of malaria in Tanzania’s mainland continue to be children under five and pregnant women. Malaria places a significant strain on the Tanzanian health system where it is thought that more than 40% of all outpatient visits are attributable to malaria.

The 2014-2020 National Malaria Strategic Plan aims to achieve universal access to high-quality malaria diagnostic testing and treatment in both public and private health facilities. The national target is to increase the proportion of children under five who receive appropriate diagnosis and treatment within 24 hours of fever onset to 80%, and also receive appropriate management of both uncomplicated and severe malaria according to national treatment guidelines.

Public health care system

The Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) provides policy and governance for the health sector as well as oversees medical research in mainland Tanzania. Health services in the country are provided by the government, parastatal organizations, voluntary organizations, faith-based organizations, and private practitioners. As of 2015, there were approximately 6,734 public health facilities in mainland Tanzania.

Private health care system

The private health sector in Tanzania consists of non-profit and for-profit organizations. Non-profit organizations primarily include faith-based, charitable, and community-based organizations that engage in service delivery, particularly in rural communities. For-profit organizations consist of a variety of actors that provide medical products, technology, services, and private health financing, mainly in urban areas. National health policies in recent years have sought to better engage the private sector through Public-Private Partnerships (PPPs), although the for-profit sector remains small relative to the non-profit and public sectors.

Following the loosening of laws in Tanzania in 1991 that previously banned the provision of medical services in the private sector, there was a proliferation and diversification of private providers. A large proportion of outlets were registered (but essentially unregulated) private-medicine dispensing outlets, including duka la dawa baridi (DLDBs). According to the national policy, DLDBs are only permitted to sell non-prescription medications. However, in practice they frequently also dispensed prescription-only drugs. In 2003, the Tanzanian government introduced the accredited drug dispensing outlet (ADDO) program, which aimed to provide accreditation to these outlets through a program of training and support to increase their capacity to provide quality primary health services, particularly in remote areas. As part of the accreditation process, ADDO providers received training on malaria case management and malaria national treatment guidelines. ADDOs are permitted to sell non-prescription medicines, including ACT, while referring any cases of severe malaria to a public health facility. Since a successful 2012 pilot initiative introducing mRDTS testing in ADDOs, these tests have been rolled-out in these outlets nationally. There are nearly 8,000 ADDOs and another 2,000 outlets awaiting accreditation by the government, located mainly in rural areas.

AMFm

In 2010, Tanzania participated in the Affordable Medicines Facility- malaria (AMFm) pilot, set up by the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), with the aim of increasing the uptake of ACTs and reducing the use of artemisinin monotherapies in the public and private sectors. AMFm-subsidized products carried a ‘green leaf’ logo to differentiate them from other non-subsidized and non-quality assured products. Following the AMFm pilot period in 2010-2011, the subsidy mechanism transitioned into a new model called the private sector co-payment mechanism (CPM) which continued to fund ACT subsidies in the private sectors of many malaria-endemic countries, including Tanzania. The public sector continued to receive subsidized ACTs through an alternative GFATM mechanism.
Mainland Tanzania Malaria Case Management Guidelines

Diagnosis

In 2006, the National Malaria Control Programme revised policies favoring presumptive diagnosis of malaria to treatment based on parasitological confirmation for patients aged five years and older, with treatment based on clinical diagnosis permitted for children under age five, although implementation remained limited in practice. In 2010, the policy was amended to include parasitological confirmation of suspected malaria cases for all ages.

Treatment

Since 2014, the national guidelines for diagnosis and treatment of malaria stipulate artemether lumefantrine (AL) as the first-line treatment for uncomplicated malaria in both adults and children, with dihydroartemisinin piperaquine (DHAPPQ) as a second-line drug in cases of treatment failure. Quinine is the second-line treatment for cases of uncomplicated malaria contraindicated for ACT and for women in the first trimester of pregnancy, or in cases of severe malaria not responding to the first-line treatment. The national guidelines align with the World Health Organization’s (WHO) recommendations stipulating injectable (IV/IM) artesunate for treatment of patients with severe malaria, and a three-course treatment of Sulfadoxine Pyrimethamine (SP) for intermittent treatment as prevention during pregnancy (IPTp), rather than a two-course treatment as previously stipulated. Oral artemisinin monotherapies have been banned since 2006, while non-oral artemisinin monotherapies are allowed for treatment of severe disease.
1.3 background
Outlet Survey Methods
ACTwatch antimalarial market monitoring in Tanzania from 2010 to present has been implemented to monitor health system readiness and performance for malaria case management in the context of recent strategies and investments to improve case management, including:

- End of the AMFm ACT subsidy mechanism implemented from 2011-2014 and continuation of a similar co-payment subsidy mechanism with a lower co-payment/subsidy available to first-line buyers from 2014.
- National efforts to improve the availability of confirmatory testing prior to antimalarial treatment within the public sector and among private for-profit health facilities.
- Efforts to extend malaria blood testing and antimalarial treatment to the community level through home-based management of malaria delivered through ADDOs.
- Emphasis on improving coverage of Sulfadoxine Pyrimethamine (SP) delivered for intermittent preventive treatment in pregnancy (IPTp).

How were sampling conducted?

A nationally representative antimalarial outlet survey was conducted in mainland Tanzania between June 6 and July 15, 2016. A representative sample of wards was selected from urban and rural domains. Within selected clusters, a census of all outlets with the potential to sell or distribute antimalarials and/or provide malaria blood testing was completed. Additional wards were selected for oversampling of public health facilities, private for-profit health facilities, pharmacies and ADDOs. This booster sampling strategy was used to obtain a sufficient sample size for indicator estimates within these outlet types.

What types of outlets are screened?

Outlets eligible for the survey met at least one of three criteria: 1) one or more antimalarials were in stock on the day of the survey, 2) one or more antimalarials were in stock in the three months preceding the survey, and/or 3) malaria blood testing (microscopy or mRDT) was available.

How are the outlets identified?

All fieldworkers were trained in how to identify and classify different outlet types that had the potential to stock antimalarials or malaria diagnostics.

Lists of outlets that were government-registered (i.e. health facilities, pharmacies, ADDOs, etc.) were provided to field teams. Local leaders, officials, and stakeholders were also consulted, and snowball sampling was used with each identified outlet to ensure a full census of all outlets was conducted within a given ward.

What information was captured in the questionnaire?

Among eligible outlets, service providers were interviewed and all antimalarials and mRDTs were audited. The audit collected information about each antimalarial and mRDT in stock (e.g. brand name, drug active ingredients and strengths, manufacturer, etc.) and retailer reports on consumer price and sale/distribution volumes for each product.

How is information on antimalarials and malaria rapid diagnostic tests captured?

A structured questionnaire programmed into mobile phones using DroidDB software was used to complete an audit of all antimalarials and mRDTs as well as a provider interview.

What other information was collected?

Key informant interviews were conducted with specific stakeholders to supplement information for the Tanzania background.

How were data analyzed?

All data cleaning and analysis were performed using Stata 13.1 (©StataCorp, College Station, TX). Data were weighted to account for variation in probability of outlet selection, and standard error calculation reflected clustering of
Sampling Flowchart for Tanzania in 2016

Outlets enumerated* (6,119)

Outlets not screened (251)

Outlets screened** (5,868)

Outlets that did not meet screening criteria (3,550)

Outlets that met screening criteria (2,318)
1=(2,195)
2=(39)
3=(84)

Outlets not interviewed (1)

Outlets interviewed *** (2,317)
1=(2,194)
2=(39)
3=(84)

Notes for flowchart:

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

* Identified as outlets with potential to sell or distribute antimalarials and/or provide malaria blood testing during the census or booster sampling.

** Administered questions to assess current or recent (previous 3 months) availability of antimalarials and malaria blood testing (microscopy or rapid diagnostic test).

*** Indicates total outlets included in the study and where a partial or complete interview was conducted with an outlet representative.
What types of outlets were included?

The study population is defined as all outlets with the potential to sell or distribute antimalarial medicines and/or provide malaria blood testing. The classification of different outlets was based on discussions with national stakeholders to determine appropriate categories of outlets to screen as part of the census approach.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tr>
<td>Public Health Facilities</td>
<td>National referral hospitals, regional hospitals, district hospitals, health centers, and dispensaries.</td>
</tr>
<tr>
<td>Private Not-For-Profit Facilities</td>
<td>NGO hospitals, NGO clinics, faith-based hospitals, and faith-based clinics.</td>
</tr>
<tr>
<td>Private For-Profit Facilities</td>
<td>Private hospitals, clinics, and diagnostic laboratories.</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>Pharmacies are licensed and regulated by a national regulatory authority and are staffed by pharmacists and qualified health practitioners. There are approximately 800 registered pharmacies in Tanzania.</td>
</tr>
<tr>
<td>Accredited Drug Dispensing Outlet (ADDO)</td>
<td>Drug shops that primarily sell medicines. These outlets are trained and regulated by a national regulatory authority. Over 9,000 ADDOs currently serve the 25 regions of Tanzania.</td>
</tr>
<tr>
<td>Duka La Dawa Baridi (DLDB)</td>
<td>Drug shops that primarily sell medicines. These outlets are not guaranteed to be staffed by qualified health dispensers/practitioners and are not licensed by a national regulatory authority.</td>
</tr>
<tr>
<td>General retailers</td>
<td>Grocery stores and village shops. Supermarkets, mini-markets, and kiosks primarily sell fast-moving consumer goods, food, and provisions. Kiosks/tables are points of sale located in non-permanent structures that sell fast-moving goods, such as food, beverages, and household goods. Although retailers may have over-the-counter medicines, including oral contraceptives, available, national authorities do not regulate the sale of medicines by retailers.</td>
</tr>
<tr>
<td>Itinerant drug vendors</td>
<td>Mobile providers selling medicines and other goods. They are not registered with any national regulatory authority.</td>
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2.1 results
Market Composition

Relative distribution of outlets stocking antimalarials

This section summarizes the relative distribution of outlets stocking at least one antimalarial across the public and private sectors.
How does market composition change over time?

Overall, the public and non-profit sector accounted for 20% of outlets with antimalarials in stock in 2016, with little change in these proportions seen over survey waves. In 2016, ADDOs and DLDBs predominated the private sector, accounting for 48% and 24% of all outlets, respectively. With each survey round, ADDOs have become more prevalent, from 7% in 2010 to 48% in 2016, and DLDBs have become less prevalent, from 48% in 2010 to 24% in 2016, reflecting the Tanzanian government’s policy of accrediting DLDBs. The proportion of the total antimalarial-stocking market accounted for by general retailers has declined substantially, from 21% in 2010 to 2% in 2016.

MARKET COMPOSITION ACROSS OUTLETS

Three-quarters of the antimalarial market composition was comprised of the private sector.
How does market composition compare between urban and rural areas?

The public sector accounts for a larger proportion of all antimalarial-stocking outlets in rural areas (29%) compared to urban areas (8%). Almost two thirds of outlets in urban areas are ADDOs (62%), followed by DLDBs (20%), while these outlets account for 39% and 27% of rural outlets, respectively. Other private-sector outlet types account for only a small proportion of antimalarial-stocking outlets in both urban and rural areas.

MARKET COMPOSITION ACROSS URBAN AND RURAL AREAS

Sixty-two percent of antimalarial-stocking outlets were ADDOs in urban areas, compared to 39% in rural areas.
2.2 Results
Antimalarial Availability

Availability of 1) any antimalarial among all screened outlets, and 2) different types of antimalarials, among outlets with antimalarials in stock

This section shows the percentage of outlets stocking at least one antimalarial, among all screened outlets. It also shows the availability of different antimalarial products among outlets stocking at least one antimalarial.
Which outlets stock at least one antimalarial?

In 2016, 96.2% of public outlets had antimalarials in stock at the time of the survey compared with 15.7% of private sector outlets. Within private sector outlets, over 94% of pharmacies, ADDOs and DLDBs were stocking antimalarials at the time of the survey, compared to 63.0% of private for-profit health facilities, and only 0.5% of general retailers. Over survey rounds, there was a trend in the increasing percentage of outlets in the private sector (as a whole) to have any antimalarials in stock on the day of the survey in the period 2010-2016, while there appear to have been slight declines in the public sector between the two most recent survey rounds.

Public-sector availability of antimalarials was 96% in 2016, reflecting an increase from 2010. Private-sector availability of antimalarials in 2016 was greater than 95% in pharmacies, ADDOs, and DLDBs, reflecting an increase from 2010.
Quality-assured ACT

QA ACTs are ACTs with WHO pre-qualification from a manufacturer with “Good Manufacturing Practices” (GMP). QA ACTs include the following:

- Any ACT that appeared on the Global Fund’s indicative list of assured antimalarials prior to data collection
- Any ACTs that previously had C-status in an earlier Global Fund quality assurance policy
- Any ACT that had been granted regulatory approval by the European Medicines Agency

What is the availability of quality-assured ACT?

In 2016, the availability of QA ACT among antimalarial-stocking public-sector outlets was higher than in private sector outlets (public, 92.6%; private 65.1%). Most of the ACT were quality-assured in the public sector (93%), compared to the private sector (65.1%). Declines in QA ACT were observed in ADDOs and DLDB between 2014 and 2016.

OUTLETS STOCKING QA ACT

Across most outlet types, quality-assured ACT (QA ACT) availability peaked in 2014 following substantial increases from 2010 levels, with subsequent decreases in 2016. This pattern was more noticeable in the private sector.
What is the availability of non-quality assured ACT?

Availability of non-QA ACT increased in the private sector from 20.5% in 2014 to 42.9% in 2016. The majority of pharmacies stocked non-QA ACT at each survey round (>90%). In 2016, non-QA ACTs were available within 43.3% of ADDOs, an increase from 17.4% in 2014. Availability was also moderate among DLDBs at 34.9% in 2016 compared with 17.4% in 2014.

OUTLETS STOCKING NON-QA ACT

Availability of non-QA ACT has increased over time from 2011 and 2016. In 2016, non-QA ACT availability was 15% in the public sector and 43% in the private sector.
What types of quality-assured and non-quality assured ACTs are available in the public and private sectors?

AL tablets made up the entirety of QA ACTs in the public sector and nearly all QA ACTs in the private sector (99.6%) (data not shown here). There was greater variability in the non-QA ACTs audited, where Dihydroartemisinin Piperaquine (15.7% public; 27.8% private), Artemisinin Piperaquine (7.7% public/13.2% private), and non-tablet AL (62.9% public; 35.4% private) also made up substantial proportions of audited antimalarials.

Artemether Lumefantrine (AL) tablets made up the entirety of QA ACTs in the public sector and nearly all QA ACTs in the private sector (99.6%) (data not shown here). There was greater variability in the non-QA ACTs audited, where Dihydroartemisinin Piperaquine (15.7% public; 27.8% private), Artemisinin Piperaquine (7.7% public/13.2% private), and non-tablet AL (62.9% public; 35.4% private) also made up substantial proportions of audited antimalarials.
What is the availability of Sulfadoxine Pyrimethamine?

SP, recommended for IPTp, was available in only 53% of public health facilities in 2016. High availability of SP in the private sector in 2016 was observed, particularly at pharmacies, ADDOs, and DLDBs, though stock at DLDBs declined in 2016.
OUTLETS STOCKING INJECTABLE ARTESUNATE

Stock of injectable artesunate, recommended for severe malaria, was stocked by 70% of the public sector, showing an increase over time. Injectable artesunate was negligible in the private sector.

What is the availability of injectable artesunate?

Injectable artesunate is the first-line treatment for severe malaria. In 2016, 74.1% of antimalarial-stocking public health facilities and 68.9% of private for-profit health facilities had artesunate IV/IM in stock. This was an increase from 2014 when availability was 22.6% in public facilities and 3.8% in private for-profit facilities.
2.3 results
Malaria Diagnostic Availability

Availability of malaria diagnostics, among outlets with antimalarials in stock.

This section summarizes the availability of malaria blood testing among all outlets with at least one antimalarial in stock on the day of the survey or within the past three months.
Which outlets had malaria blood testing available?

In public health facilities, availability of malaria blood testing increased from below half in 2010 and 2011 to 89.1% in 2014 and 92.9% in 2016. In the private sector, testing availability increased in recent years but remained low in 2016 (11.4%). While most private for-profit health facilities had testing available (95.9%), availability was lower than 10% among ADDOs (7.5%) and DLDBs (5.1%).

OUTLETS WITH MALARIA BLOOD TESTING AVAILABLE

*Increases in malaria testing were observed over time in the public sector and among private for-profit facilities, such that availability was about 95% in 2016. Availability of testing was low in other private-sector outlets (<20%) in 2016.*
Which outlets had mRDT available?

In public health facilities, availability of mRDTs increased from below half in 2010 and 2011 to 75.8% in 2014 and 90.4% in 2016. In the private sector, mRDT availability increased in recent years but remained low in 2016 (10.2%). While most private for-profit health facilities had mRDTs available (74.4%), availability was lower than 10% among ADDOs (7.2%) and DLDBs (5.1%).

OUTLETS WITH mRDT AVAILABLE

*Increased availability of diagnostic testing was attributed to mRDTs. There was a greater availability of mRDTs versus microscopy in the overall public sector.*
2.4 results
Antimalarial Market Share

Relative sale or distribution of antimalarials in the week preceding the survey

This section summarizes relative market volume (sale/distribution) of antimalarial of adult equivalent treatment doses.
What is the distribution of antimalarials by sector?

The private sector accounted for 63.8% of all antimalarial distribution in 2016. Market share for QA ACT was 30.0% in 2010. During the AMFm pilot, this increased to 41.6% by 2011 and stayed at 43.7% in 2014. However, in 2016 QA ACT market share declined to 33.2%, meaning only one in three antimalarials distributed were QA ACTs. At each survey round, more than half of antimalarials distributed were non-artemisinin therapies—mostly SP. In 2016, 53.2% of antimalarials distributed were SP treatments. Market share for non-QA ACT increased from less than 5% in 2010, 2011, and 2014 to 9.8% in 2016, meaning one in 10 antimalarials distributed were non-QA ACT.
Defining antimalarial market share

Provider reports on the amount of the drug sold or distributed during the week preceding the survey were used to calculate market share. The volume of each drug distributed is the number of ‘adult equivalent treatment doses’ (AETDs) that were reportedly sold/distributed during the week preceding the survey. Measures include all dosage forms (tablet and non-tablet).

What is the distribution of antimalarials within each sector?

Within the public sector, QA ACTs made up around the same market share (ranging from 45-55%) between 2010, 2011, and 2014. However, in 2016, the market share of QA ACTs in the public sector dropped to 33.9%. QA ACTs were nearly absent from the private sector in 2010, but their share of the market rose to 41.7% in 2011 and 43.6% in 2014, before falling to 33.3% in 2016. In both the public and private sectors, the majority of antimalarials distributed in 2016 were SP treatments (public, 60.7%; private, 49.0%).

SP generally had the highest distribution throughout all four years across both the public and private sectors and accounted for 53% of the total market share in 2016.
What are differences in antimalarial market share by class and outlet type?

The private sector made up roughly 65% of the total antimalarial market share, with ADDOs accounting for the largest proportion within that sector, at just under 40%, followed by DLDBs at just over 10%. Private-for-profit facilities and pharmacies each contributed to about 5% of the private-sector market share, and general retailers and itinerant drug vendors made up about 1% each.

In 2016, general retailers and itinerant drug vendors did not contribute to the antimalarial market share.

ANTIMALARIAL MARKET SHARE BY SECTOR AND ANTIMALARIAL CLASS

ADDOs accounted for the largest proportion of the private-sector antimalarial market share, at just under 40%.
What are differences in antimalarial market share by urban and rural areas?

Antimalarial market share for the private sector was greater in urban areas (79.3%) compared to rural areas (46.9%). QA ACT market share was similar in urban (33.3%) versus rural areas (33.1%), and in both urban and rural areas, about half of all antimalarials distributed were SP treatments (urban, 50.4%; rural, 56.4%). Non-QA ACTs had a higher market share in urban areas, where they accounted for 11.9% of all antimalarials distributed compared to 7.6% in rural areas.

ANTIMALARIAL MARKET SHARE BY ANTIMALARIAL CLASS ACROSS URBAN/RURAL AREAS

Antimalarial market share for the private sector was greater in urban areas (79.3%) compared to rural areas (46.9%).
2.5 results
Private-sector Price

Median price for malaria testing and treatment in the private sector

This section presents median private-sector price for mRDT and antimalarial AETD, or the amount of medicine needed to treat a 60-kg adult.
How did private-sector prices compare among treatments?

During the AMFm pilot period, the price of QA ACT declined and was similar to the price of SP in 2011. However, since 2011, the price of QA ACT has doubled and in 2016, QA ACT was 1.3 times more expensive than SP. mRDT testing ($0.93) was less expensive than pre-packaged treatment for an adult ($1.40) (data not shown). The median price of all malaria diagnostics was lower than one AETD of QA ACT.

The price of an mRDT in the private sector in 2016 was $0.93
2.6 results
Provider Knowledge

Provider knowledge of first-line treatment for malaria

This section addresses provider knowledge about the first-line treatment for malaria. Providers at outlets with at least one antimalarial in stock on the day of the survey or within the past three months were asked to cite the first-line treatment for malaria.
Do providers know the first-line treatment for uncomplicated malaria?

Overall, the percentage of providers who correctly stated the first-line treatment for uncomplicated malaria was high across all survey rounds, and in the majority of outlet types and survey years this percentage was over 90%. For example, public health facilities ranged from 94.3% in 2010 to 99.7% in 2016, while in the private sector in 2016, 90.7% of providers stated the correct treatment.

PROVIDERS WHO CORRECTLY STATED THE FIRST-LINE TREATMENT FOR UNCOMPLICATED MALARIA

The percentage of providers who correctly stated the first-line treatment for uncomplicated malaria remained high across survey rounds.
3 discussion
Summary
Public sector

The latest Outlet Survey shows a high readiness for the public sector to manage malaria cases. Across each survey round, over 85% of public health facilities in Tanzania had antimalarials in stock, with 96% of public health facilities stocking antimalarials in the most recent 2016 survey. Over 95% of antimalarial-stocking public health facilities had QA ACT in stock by 2016, demonstrating an improvement from 2010 levels. Furthermore, three-quarters of all screened public health facilities had injectable artesunate, the first-line treatment for severe malaria, reflecting a substantial increase in the public sector since the previous survey round, from 22.6% in 2014 to 71.4% in 2016. In terms of malaria diagnostic capacity, over 90% of antimalarial-stocking public health facilities had confirmatory testing available (mRDT or microscopy), a 40% increase from 2010. The high degree of readiness for malaria case management among public health facilities in Tanzania was observed in both urban and rural areas.

However, lower readiness was observed in 2016 for IPTp, given that only around half (53.5%) of the antimalarial-stocking public health facilities had SP available. Declines in public-sector availability at the national level are concerning because IPTp is an important intervention for pregnant women. Maintaining a constant supply of SP in the public sector will be critical to ensure appropriate preventative measures are taken among pregnant women. Additionally, despite widespread availability of QA ACT and sub-optimal availability of SP, the market share findings illustrate that SP was widely administered in the public sector and more commonly than QA ACT. Market share of QA ACT within the public sector was just under 50% in 2010 and declined to 35.5% in 2016. This may reflect an improvement in confirmatory testing, with more patients being tested and appropriately managed, or it alternatively suggests SP is being administered beyond IPTp.

Private sector

The private sector plays an important role in antimalarial distribution in Tanzania, with around 62% of antimalarials distributed through this channel in 2016, and mostly through ADDOs. Across each survey round, ADDOs have become more prevalent antimalarial service delivery points, reflecting the Tanzanian government’s policy of accrediting DLDBs. Therefore, improving malaria case management coverage in Tanzania requires addressing readiness and performance of ADDOs and continued accreditation of DLDBs, which still contributed one fifth of the private-sector antimalarial market share.

One decade after shifts in Tanzania’s national malaria treatment guidelines to ACT, significant progress has been achieved in improving the availability and affordability of QA ACT in the private sector. However, while the availability and relative antimalarial market share for QA ACT have increased since 2010, distribution of non-artemisinin therapies, including SP, remains common in
the private sector. Of concern is the recent drop in the availability of QA ACT in the private sector (from 83% in 2014 to 65.1% among all antimalarial-stocking outlets in 2016), accompanied by an increase in the price of this medicine since the AMFm period. It was also observed that during 2011, QA ACT market share was 41.6%, and it was maintained at 43.7% in 2014. However, in 2016, QA ACT market share declined to 33.2%, meaning only one in three antimalarials distributed were QA ACTs.

Challenges to QA ACT uptake persist, including the widespread availability and use of SP for private-sector case management. SP marketed for the treatment of malaria among people of all ages is available from numerous manufacturers and is inexpensive relative to ACT. The diversity of the SP market and the high relative market share suggest ongoing high demand for this medicine, despite the intended discontinuation of its use for case management due to drug resistance. It is also unlikely that this antimalarial is being used for IPTp in the private sector, especially as there are instructions for administration of SP for all age groups.

The private-sector consumer price of QA ACT has declined in recent years due to the AMFm and CPM that targeted the private sector. Despite these declines, during the most recent outlet survey, QA ACT was 1.3 times more expensive than SP. In 2016, the price of QA ACT was 2.5 times higher than during the AMFm pilot period in 2011. This reflects a gradual increase from earlier years, where the price of QA ACT has crept up every survey round from 2011. The relatively high cost of QA ACT is likely a barrier to increased uptake.

The recent emergence of non-QA ACT is another challenge to QA ACT uptake. Almost half of private-sector outlets had non-QA ACT in stock in 2016. These include ACT suspensions and tablets that are not WHO-prequalified or approved by a stringent drug regulatory authority. Non-QA ACT availability and distribution have been increasing in the private sector, contributing 4% of all antimalarials distributed in 2010 to 9% in 2016. Availability and use of these non-quality assured treatments must be closely monitored given the threat that substandard combination therapies pose to artemisinin drug efficacy.

Confirmatory testing is largely unavailable among private-sector outlets providing antimalarials, and most testing is conducted in the public sector. In 2016, only 11% of antimalarial-stocking private-sector outlets had confirmatory testing available. Among ADDOs, which were recently permitted to test, and responsible for the majority of antimalarial distribution, less than 8% had confirmatory testing available. Limited availability of malaria testing in the private sector is likely a barrier to increasing coverage of confirmatory testing prior to treatment, given the sector’s high relative antimalarial market share. While access is a key barrier to diagnostic testing in the private sector, where testing was available it was less expensive than QA ACT, suggesting there may be a financial incentive to test before purchasing treatment.
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WHAT IS ACTWATCH?
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 12 countries with additional funding from UNITAID and the DFID. Standardized tools and approaches are employed to provide comparable data across countries and over time.

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