



BACKGROUND

Malaria is considered a major public health problem in Nigeria, where the disease is endemic and 97% of the population is at risk. The National Guidelines for Diagnosis and Treatment of Malaria recommend that all suspected malaria cases receive confirmation by a blood test using microscopy or malaria rapid diagnostic tests (RDT). The first-line treatment for uncomplicated malaria is the artemisinin-based combination therapy (ACT) artemether-lumefantrine (AL). Artesunate-amodiaquine (ASAQ) is recommended as an alternative first-line treatment. There is a ban in Nigeria on the importation, local production, and distribution of oral artemisinin monotherapy (e.g. artesunate tablets, artemether tablets).

The Nigerian National Malaria Control Strategy relies on a set of proven interventions to reduce the malaria burden and aims to achieve universal and equitable access to malaria prevention and treatment measures. Nigeria was one of the participating malaria-endemic countries in the Affordable Medicines Facility, malaria (AMFm) pilot program. The AMFm aimed to improve the availability and affordability of quality-assured ACT (QAACT) and reduce the availability and use of antimalarial monotherapies including non-artemisinin monotherapies such as SP and chloroquine. First-line buyers in the public and private sectors had access to Global Fund co-paid ACTs from 2010-2013.

The ACTwatch project conducted national antimalarial outlet surveys in Nigeria in 2009, 2011 and 2013. The outlet survey is designed to measure key antimalarial market indicators including antimalarial availability, price, and relative market share.

METHODS

Nationally-representative antimalarial outlet surveys were conducted in Nigeria in 2009, 2011 and 2013. A representative sample of localities was selected from each of six geopolitical domains: North Central, North East, North West, South East, South South, and South West. Within selected clusters, a census of all public and private sector outlets with the potential to sell or distribute antimalarials and/or provide malaria blood testing was completed. A booster sample of public health facilities was collected to ensure sufficient sample size for this outlet type.

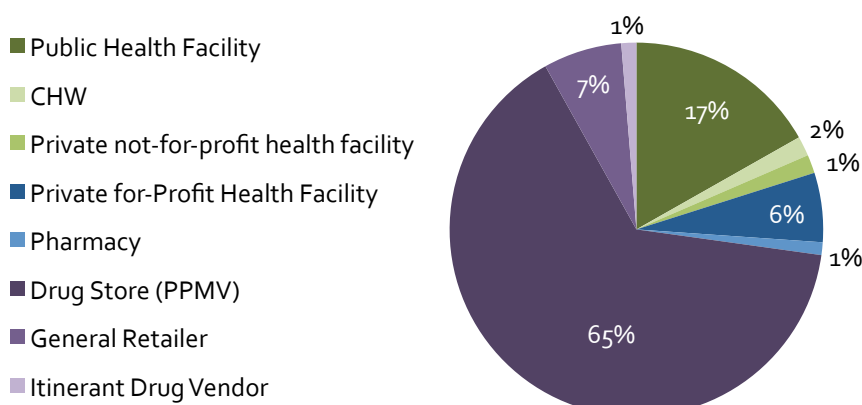
Among outlets with antimalarials in stock or malaria blood testing available, a full survey was conducted. Detailed information was collected about all antimalarials and malaria RDTs in stock, including retail price and amount distributed to consumers in the week preceding the survey. Interviews with providers collected information about malaria case management knowledge and practices.

Double data entry was completed using Microsoft Access. Stata 12.1 (©StataCorp, College Station, TX) was used for all analyses. Standard indicators were constructed according to definitions applied across ACTwatch project countries. For more information about ACTwatch methods, visit www.actwatch.info.

RESULTS

1. Market composition: Outlet type distribution, 2013

Type of outlet, among all outlets with at least 1 antimalarial in stock (N=1,714 outlets)

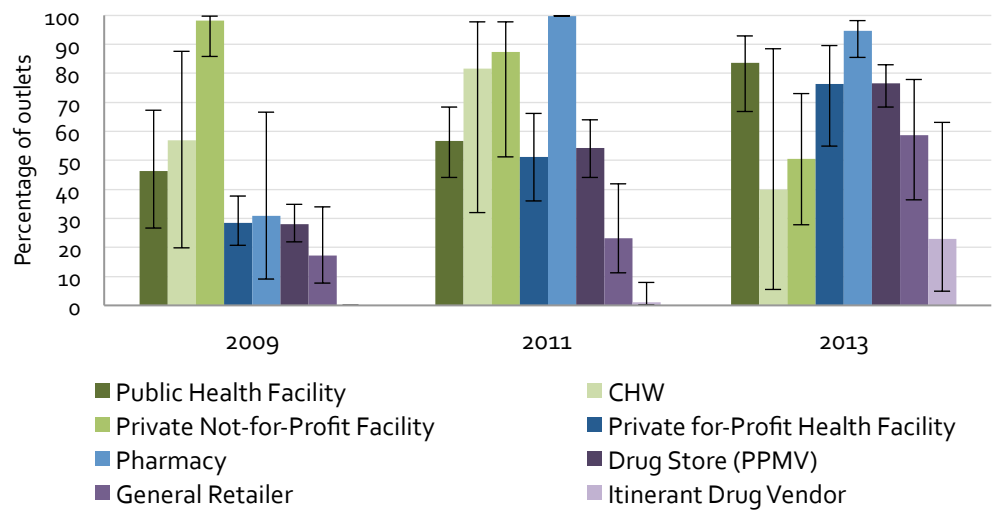


Most of the antimalarial-stocking outlets in Nigeria are drug stores (65%). These are known as patent proprietary medicine vendors or PPMVs. Other types of outlets that stock antimalarials include public and private health facilities, community health workers (CHWs), pharmacies, general retailers, and itinerant drug vendors.

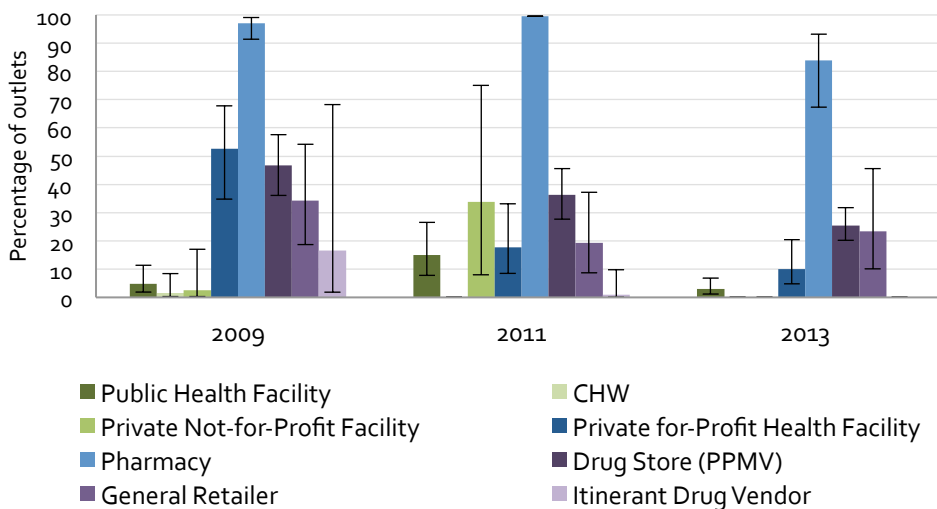
2. Quality-assured ACT availability: Percentage of antimalarial-stocking outlets with QAACT in stock on the day of the survey, 2009-2013
Among all outlets with at least 1 antimalarial in stock

Availability of quality-assured ACT (QAACT) among antimalarial-stocking outlets has improved dramatically over time in the public and private sectors.

In 2013, QAACT was in stock among the majority of antimalarial-stocking public health facilities (84%), private for-profit facilities (76%), pharmacies (95%), and drug shops (77%).

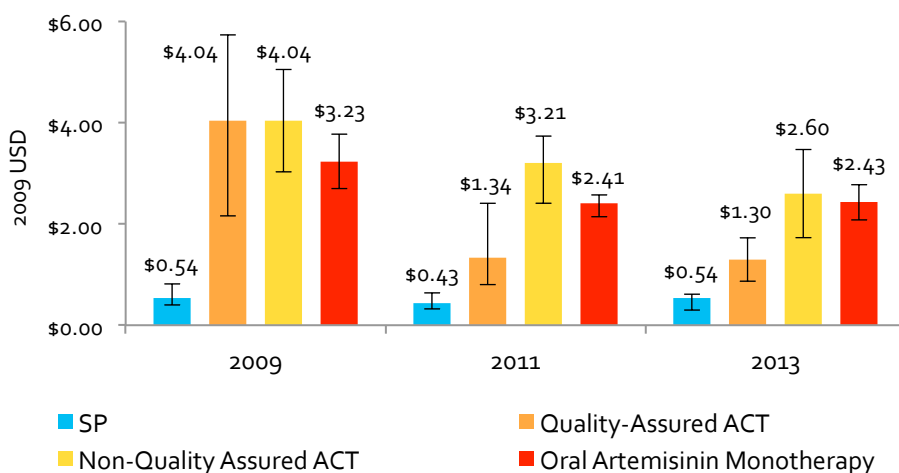


3. Oral artemisinin monotherapy availability: Percentage of antimalarial-stocking outlets with oral artemisinin monotherapy in stock on the day of the survey, 2009-2013
Among all outlets with at least 1 antimalarial in stock



Oral artemisinin monotherapy availability has declined among most private sector outlet types including private for-profit health facilities (2009, 53%; 2013, 10%) and PPMVs (2009, 47%; 2013, 26%) but has remained high among pharmacies. In 2013, 84% of antimalarial-stocking pharmacies had oral artemisinin monotherapy in stock.

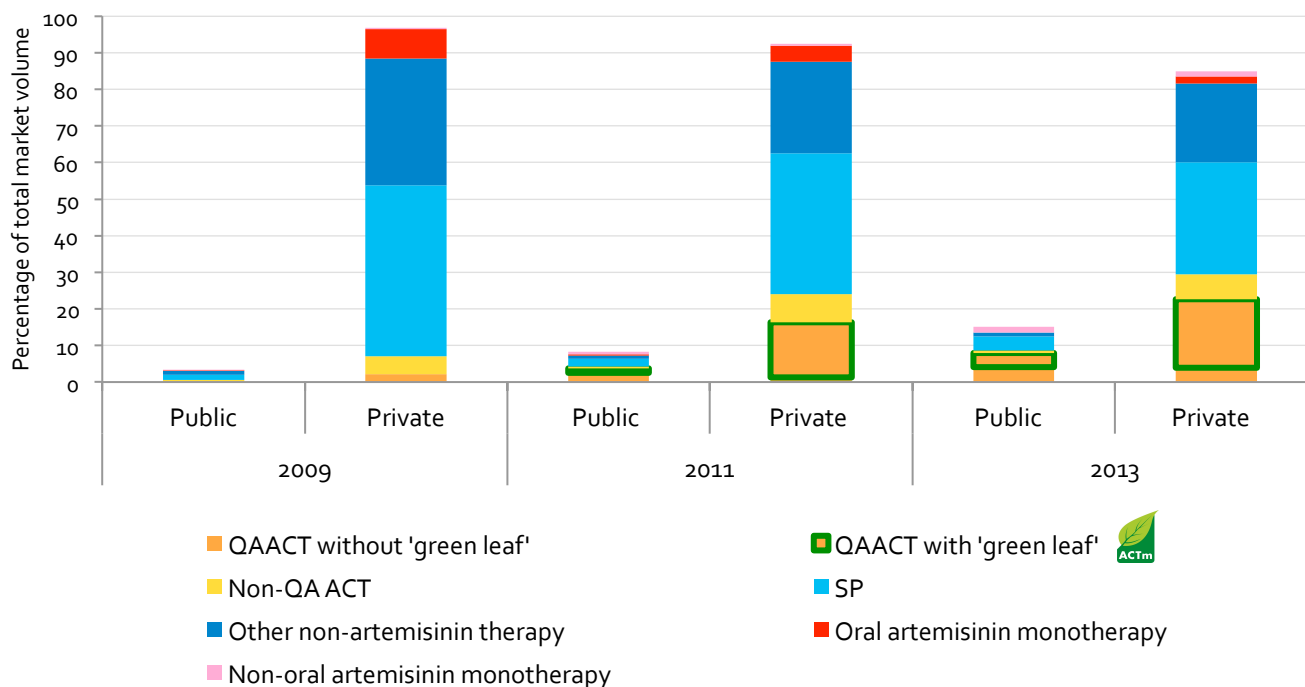
4. Private sector antimalarial price: Median price of one adult equivalent treatment dose, 2009-2013
Among tablet formulations only, in 2009 US dollars to account for inflation



The median price of one QAACT adult equivalent treatment dose (AETD) has reduced over time. In 2009, the price of one QAACT AETD (\$4.04) was 3 times higher than the price in 2013 (\$1.30).

However, in 2013 QAACT remained 2.4 times more expensive than the most commonly distributed non-artemisinin therapy, SP (\$0.54). The 2013 median price of QAACT with (\$1.30) and without the green leaf logo (\$1.16) was similar (data not shown).

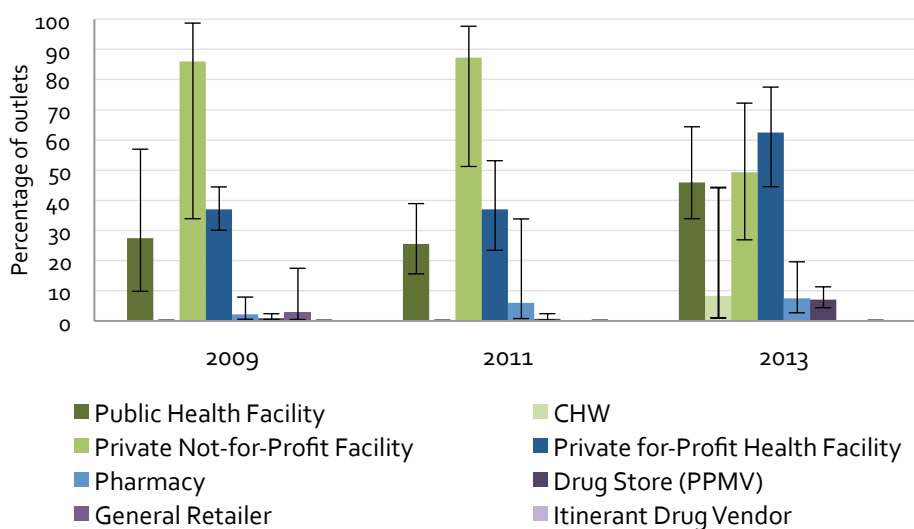
5. Antimalarial market share: Relative market volume (sale/distribution), 2009-2013
The relative amount of antimalarial adult equivalent treatment doses sold/distributed, by sector and type of antimalarial



The private sector accounted for the majority of antimalarials distributed across survey rounds. In 2013, private sector market share was 85%. PPMVs alone accounted for 70% of all antimalarials distributed at the time of the 2013 outlet survey (data not shown).

Relative market share for QAACT increased from 2% in 2009 to 31% in 2013. In 2013, QAACT with the 'green leaf' logo accounted for nearly one-quarter of all antimalarials distributed in Nigeria (23%). Non-artemisinin monotherapy market share decreased from 84% in 2009 to 66% in 2011 and 57% in 2013. Non-artemisinin monotherapies with relatively large market share in 2013 included SP (34%) and chloroquine (22%). Oral artemisinin monotherapy accounted for 8% of the antimalarial market share in 2009 and 2% in 2013.

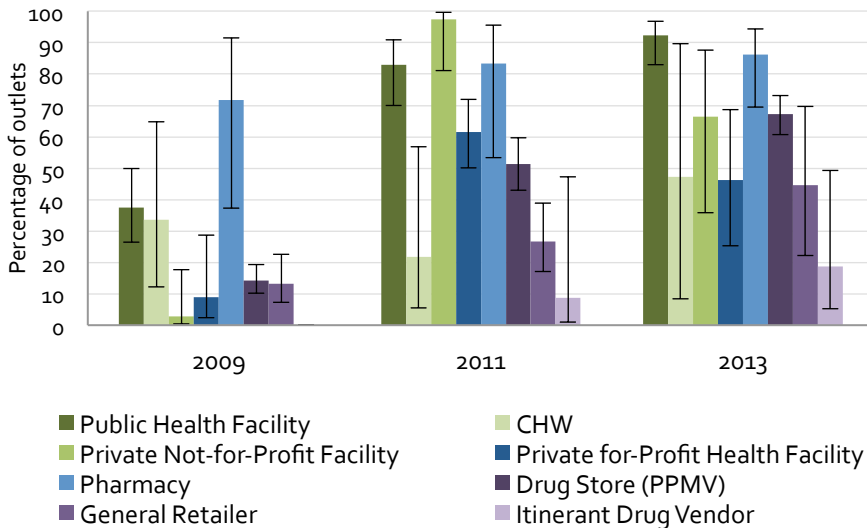
6. Malaria blood testing availability: Percentage of antimalarial-stocking outlets with malaria blood testing available (microscopy or RDT), 2009-2013
Among all outlets with at least 1 antimalarial in stock on the day of the survey or within 3 months



Among antimalarial-stocking outlets, data trends suggest increasing availability of malaria blood testing (microscopy or RDT) among public and private health facilities over time.

However in 2013, fewer than half of public facilities (46%), 49% of private not-for-profit facilities, and 62% of private for-profit facilities provided malaria blood testing (46%). Blood testing availability remained very low among PPMVs (2013, 7%).

7. Provider knowledge: Percentage of providers who correctly cite the first-line treatment, 2009-2013 Among outlets with at least 1 antimalarial in stock on the day of the survey or within 3 months



Correct knowledge of the national first-line treatment for uncomplicated malaria (AL or ASAQ) has improved over time among providers in public and private sector outlets.

The percentage of providers in public health facilities who correctly stated the first-line treatment was 38% in 2009 as compared with 92% in 2013. Knowledge among private sector providers increased over time, including PPMV provider knowledge from 14% in 2009 to 67% in 2013.

SUMMARY

Recent public and private sector strategies to improve malaria case management in Nigeria have been successful. Readiness for malaria case management has improved among both public and private sector outlets between 2009 and 2013. In 2013, most antimalarial-stocking public and private for-profit health facilities, pharmacies, and PPMVs were stocking quality-assured ACT (QAACT) and provider knowledge of the first-line treatment has improved over time. The availability of malaria blood testing has increased since 2009, however there is need to further address gaps in availability in order to ensure confirmatory testing prior to antimalarial treatment. Addressing large gaps in availability of malaria blood testing is particularly important among PPMVs who are providing the majority of antimalarial treatments in Nigeria but generally do not have malaria rapid diagnostic tests available.

The distribution of QAACT relative to other types of antimalarials has increased over time. However, more than half of the antimalarials distributed in Nigeria are still non-artemisinin therapies including SP and chloroquine. These non-artemisinin therapies are distributed primarily by the private sector. The private sector availability of QAACT has improved over time and the retail price reduced with the introduction of the Global Fund co-payment mechanism. However the median private sector price of QAACT is still more than 2 times the cost of the most commonly distributed non-artemisinin therapy, SP. The private sector price of QAACT relative to SP is likely a barrier to achieving higher QAACT relative market share.

Oral artemisinin monotherapy availability and relative market share have decreased over time. However, despite a ban on production and importation, oral artemisinin monotherapy accounted for 2% of the antimalarial market share in 2013 and was available among one in four antimalarial-stocking PPMVs and the vast majority of antimalarial-stocking pharmacies.

Most of the QAACTs distributed by PPMVs and other private sector outlets have the 'green leaf' logo indicating co-payment by the Global Fund. This finding suggests that the co-payment mechanism known as the AMFm has been important for improving QAACT market share over time. Nigeria has applied for continuation of the private sector co-payment mechanism through the Global Fund new funding model. ACTwatch outlet surveys will continue to monitor antimalarial availability, price, and market share. The next outlet survey is planned for 2015.

CONTACT

ACTwatch is a multi-country research project implemented by PSI (www.psi.org) designed to provide timely, relevant, and high quality antimalarial market evidence. Standardized tools and approaches are employed to provide comparable data across countries and over time, with the goal to inform and monitor national and global policy, strategy, and funding decisions for improving malaria case management. The project was launched in 2008 with funding from the Bill and Melinda Gates Foundation (BMGF), and is currently funded through mid-2016 by the BMGF, UNITAID, and DFID. To access survey reports, including the Nigeria national outlet survey reports, please visit www.actwatch.info.

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