The impact of the private sector co-payment mechanism (PSCM) on the private market for ACTs in Nigeria: results of the 2018 cross-sectional outlet and household market surveys.

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Background

- The private sector's role in the provision of malaria treatment in Nigeria is substantive as it accounts for 66% of patronage
- Appropriate and timely Case Management through diagnosis and treatment is an essential malaria control intervention with positive cases treated with **Quality Assured Artemisinin-based Combination Therapy (QA-ACT)**
- To improve accessibility and affordability of QA-ACTs within the private sector, Affordable Medicines Facility – malaria (AMFm) began operations in 2010 transitioning to **Private Sector Co-payment Mechanism (PSCM)** until 2017
- The PSCM's aim was to subsidise the cost of QA-ACTs that had been through the World Health Organization's (WHO's) pre-qualification certification
- One country included under the PSCM was Nigeria, a country with a national malaria prevalence in children aged 6-59 months of 23% in 2018 and a **large private sector pharmaceutical market**
- At the end of the PSCM, a national outlet survey of private pharmacies and PPMVs was conducted along with a nationwide household survey

Objectives

1. To assess the **state of the private-sector ACT market** in Nigeria at the end of the PSCM

2. To ascertain the **current status of ACT availability, gaps in the market, market share and prices** of different antimalarial brands

3. To determine **HH use of the private sector, demand for ACTs, brand preference and factors** affecting purchase decision

4. To provide a **baseline assessment** from which the market could be monitored once the subsidy scheme had been removed

5. To assess **PCSM's impact on the ACT market**

Methods – Outlet Survey

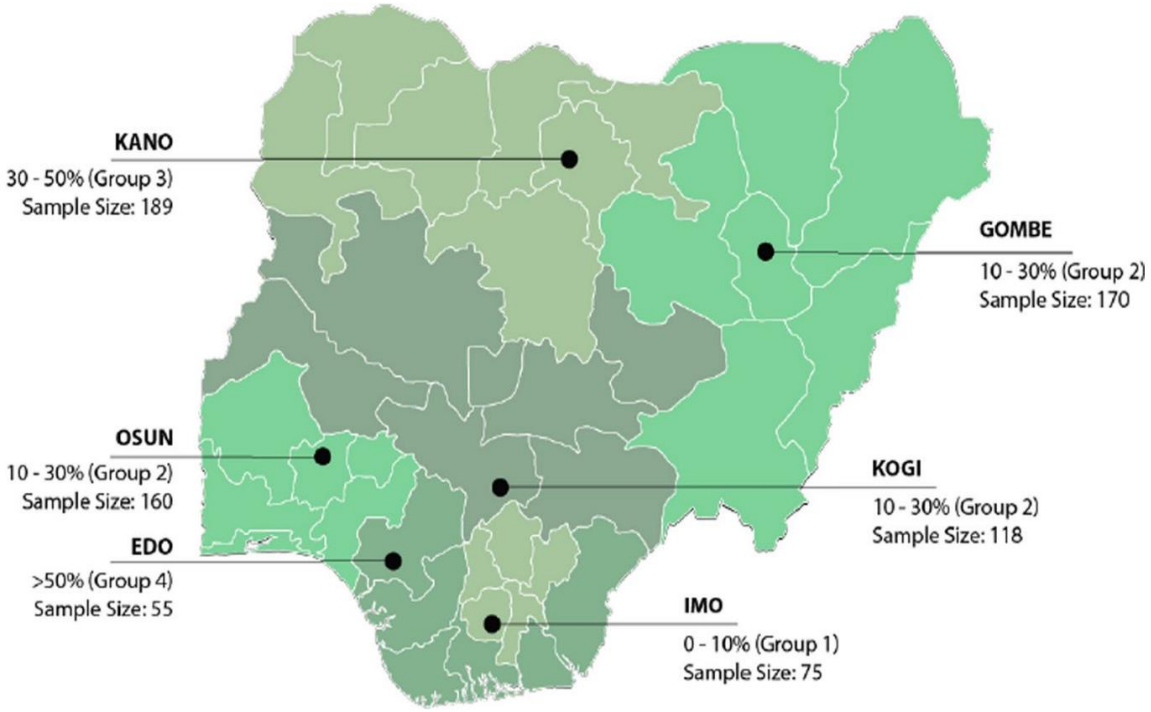


Figure 1: Sampling locations of the outlet survey grouping and outlet sample size

- An **outlet** and **household** survey were conducted across Nigeria's six regions.
- The survey was targeted to both **PPMVs and pharmacies in the private** retail sector
- Sample size of 768 outlets were determined assuming population size >20,000 for demand side market system with a 50% response rate, 5% error margin and 95% confidence level with design effect of two.
- Data was analysed to retrieve proportions compared between sub-groups using a binomial test for difference in proportions or chi-square test for trend with p-values significant at p=0.05
- Data for both surveys was collected digitally through tablet phones on digitized questionnaires using the LimeSurvey software v2. Data was downloaded in excel format and transferred to SPSS [18] and R [19] for analysis

Methods – Household Survey

- HHs were selected from 4 of the 6 states to represent each of the four malaria endemic zones in Nigeria and ensure comparability with the outlet survey
- **Low-income households** in both **urban and rural** areas of Nigeria were surveyed
- Purposive sampling of three low-income segments was conducted including HHs with monthly incomes of: 1) NGN ≤18000, 2) NGN 18,001-36,000, 3) NGN 36,001-100,000.
- Sample size of 384 outlets were determined assuming population size >20,000 for supply side market system with a 50% response rate, 5% error margin and 95% confidence level with design effect of two.
- Questionnaires were delivered to heads of households to collect data on **diagnosis** and **treatment seeking behaviours, ACT brand preference, willingness to pay** and **knowledge of green-leaf ACTs** and **fake ACTs**

Results: Supply-side: outlet survey

Availability of ACT

- ACT medicines (including any ACT) was almost universal at 99.6% [95% CI 98.7–99.9] and 97.6% [95% CI 96.1–98.6], respectively
- Coverage of green leaf ACT was very high at 80.7%, 95% CI [77.6–83.6]

Availability and market share of specific ACT brands

- Most frequently stocked antimalarial was the non-green leaf ACT (and non-QA ACT), Lonart (53%). Followed by the non-ACT anti-malarial, Fansidar (51%) and another non-green leaf ACT (and non-QA ACT), P-Alaxin (47%).
- The most available green leaf ACT medicines were Combisunate (45%) and Coartem (41%)

Table 1: Median retail price of the different types of antimalarials among pharmacies and PPMV

	Survey year	Median retail price (USD)†		% price change on previous year		% price change 2011–2018 (start–end PSCM)	
		Pharmacy	PPMV	Pharmacy	PPMV	Pharmacy	PPMV
Green leaf ACTs*	2009	na	na				
	2011	0.91	0.78				
	2013	1.59	0.95	**74.7**	**22.3**		
	2015	1.56	1.30	**– 1.9**	**36.3**		
	2018	1.47	1.63	**– 5.7**	**25.7**	**61.6**	**109.5**
Non-green leaf ACTs (ss only*)	2009	4.55	4.22				
	2011	3.74	3.90	**– 17.9**	**– 7.7**		
	2013	4.45	3.81	**19.1**	**– 2.2**		
	2015	3.38	3.38	**– 24.1**	**– 11.4**		
	2018	1.63	1.63	**– 51.6**	**– 51.6**	**– 56.3**	**– 58.1**
Non-green leaf ACTs (ds only*)	2009	3.77	3.83				
	2011	2.92	3.57	**– 22.4**	**– 6.8**		
	2013	3.97	3.81	**35.9**	**6.7**		
	2015	3.64	3.64	**– 8.4**	**– 4.6**		
	2018	2.61	2.94	**– 28.2**	**– 19.2**	**– 10.6**	**– 17.7**
Non-ACT antimalarials*	2009	0.52	0.45				
	2011	0.29	0.30	**– 43.8**	**– 34.3**		
	2013	0.67	0.64	**128.3**	**112.7**		
	2015	0.52	0.52	**– 22.1**	**– 18.2**		
	2018	0.65	0.59	**25.7**	**13.1**	**123.5**	**96.7**

Results: Demand-side: household survey

HH treatment-seeking and demand for ACT

- HHs mostly reported seeking treatment from public hospitals (65.1% [60.6–69.4]), followed by PPMVs (34.2% [30.0–38.7]), private hospitals (24.0% [20.2–28.1]), and lastly pharmacies (10.6% [8.0–13.8])
- Seeking treatment from a public hospital was significantly more common among HHs in northern states ($p<0.001$)

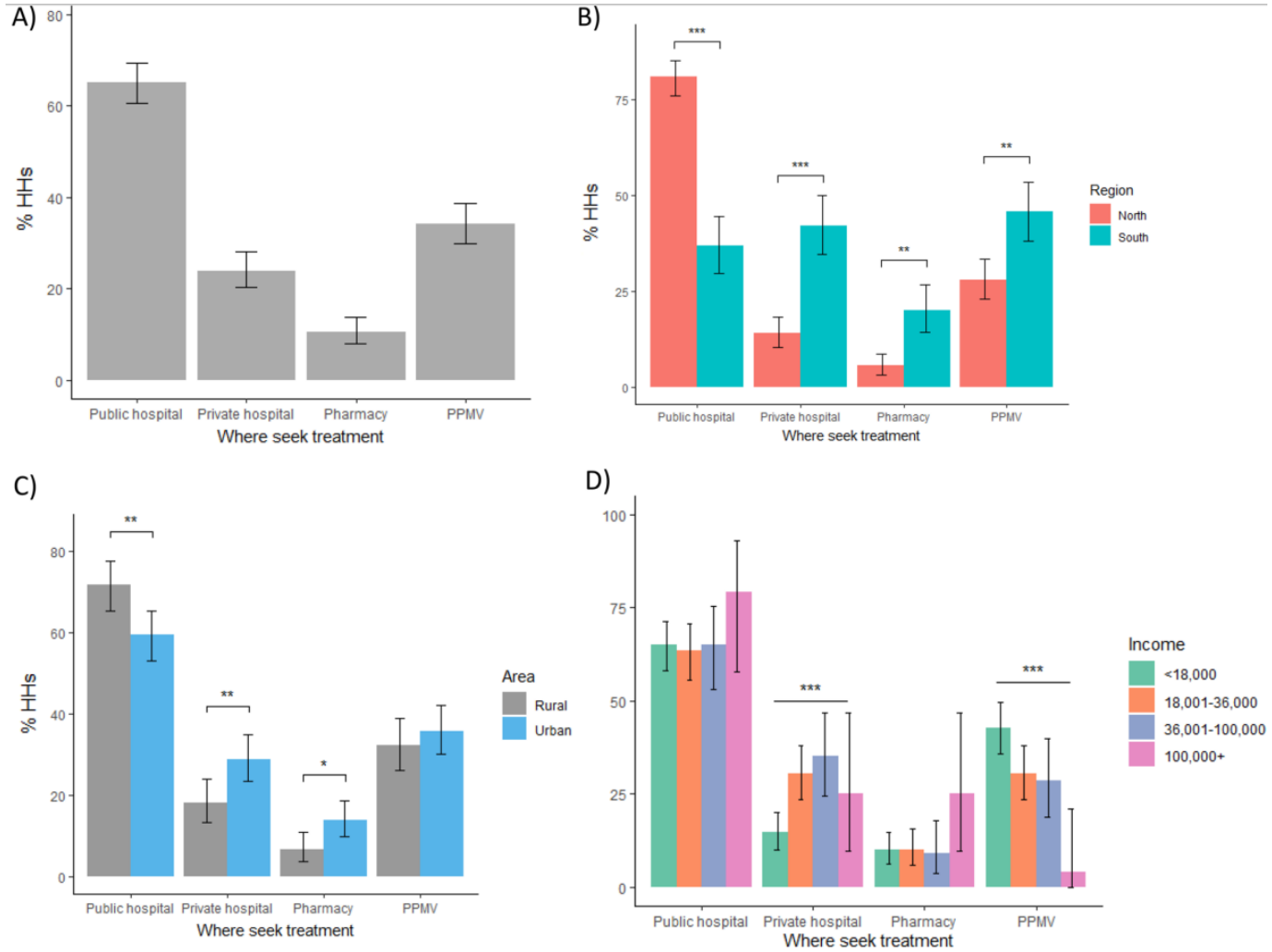
ACT awareness and brand choice

- Among all households, 62% (n = 299) reported knowing about ACTs. Knowledge of ACTs was significantly lower in the southern states (42% versus 74%, $p < 0.001$) and in lower income households (55% in HHs with <18000 versus 79% in HHs with 100,000+ income, p-value = 0.03)

Price of ACT medicines and impact on consumer choice

- Almost two-thirds of HHs (63.9%) reported that the price of ACT medicines had increased in the previous 12 months, with 50% reporting a greater than 10% increase in price

Figure 4: Treatment seeking behaviour following a positive malaria test among HHs



A nationwide, B by region, C by area, and D by monthly income.

Discussions

- Analyses of the 2018 market survey, particularly in relation to previous ACTWatch surveys, show clear impact of the PSCM on increasing ACT availability and affordability across private sector outlets
- ACT availability was almost universal among PPMVs and pharmacies, while availability of green leaf ACT medicines was very high (~80%)
- In comparison to previous ACTWatch surveys, the 2018 market survey shows availability of ACT and green leaf ACT medicines significantly increased over the time period of the subsidy scheme
- Improvements in availability were among PPMVs as opposed to pharmacies among which availability remained steady
- This is important since PPMVs were most frequently visited by lower income HHs and by HHs in rural areas with increased malaria prevalence

Conclusion

- The PSCM had clear impact on increasing the reach of subsidised QA brands and non-subsidised brands.
- Increased market competition led to innovation from unsubsidised brands and large reductions in costs to make them competitive with subsidised brands.
- Continued monitoring of the market is recommended, along with improved local capacity for QA-certification and monitoring

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