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

• 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.

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