

# **Retail prices of ACTs co-paid by the AMFm and other antimalarial medicines in Ghana, Kenya, Nigeria and Tanzania**

## **Report of price-tracking surveys**

**Survey Date: June 2011**

**Investigators: Health Action International ([www.haiweb.org](http://www.haiweb.org) and [www.hiafrica.org](http://www.hiafrica.org))**

*These price tracking studies were commissioned by the Global Fund to Fight AIDS, Tuberculosis and Malaria. Health Action International (HAI) Africa, which conducted the study, also analyzed the data and prepared the report. HAI Africa is solely responsible for the accuracy of data in the report.*

## 1.0 Introduction

The AMFm is an innovative financing mechanism to expand access to affordable artemisinin-based combination therapies (ACTs) for malaria through the public and private sectors. Hosted and managed by the Global Fund to Fight AIDS, Tuberculosis and Malaria, the AMFm does three things: (i) it negotiates with manufacturers to reduce prices paid by private sector importers to the same level as prices paid by public sector importers; (ii) it makes a co-payment on behalf of the first-line buyer, thus subsidizing the buyer's purchase of ACTs from the manufacturer and (iii) it supports country-level activities to promote access to and appropriate use of the co-paid ACTs. Phase 1 of the AMFm started operations in mid-2010 and it includes nine pilots in eight countries. The Global Fund has commissioned an independent evaluation of AMFm Phase 1. For more information on the AMFm, including benchmarks for estimating the success of Phase 1, see <http://www.theglobalfund.org/en/amfm/>.

Private sector markets and prices are generally unregulated in most AMFm pilot countries. The Global Fund commissioned a series of price tracking studies in the private sector of several AMFm Phase 1 countries to inform the implementation of the pilots, including adjustments that may be appropriate in each country context<sup>1</sup>. Information from these studies will be available to implementers who make decisions at country level, technical partners who work with implementers, the Global Fund in its capacity as host and manager of AMFm Phase 1, and other interested parties who might wish to track the progress of work during AMFm Phase 1. These surveys will include Ghana, Kenya, Madagascar, Nigeria, Tanzania and Uganda.

This report is the first in a series. It includes data from Ghana, Kenya, Nigeria and Tanzania, for which the first round of surveys has been completed.

This report is organized as follows: the methods are presented in Section 2, followed by the findings in Section 3. The annexes include more details in which readers might be interested.

## 2.0 Methodology

Sampling and data collection are conducted using the standardized methodology co-developed by WHO and HAI ([www.haiweb.org/medicineprices](http://www.haiweb.org/medicineprices)) minimally adapted for antimalarial medicines and the AMFm price-tracking exercise. The methodology also allows for availability analyses. Sixty facilities are targeted in each country (five formal and five informal facilities per region, in six regions per country). For answers to frequently asked questions on the methods, see <http://www.haiweb.org/medicineprices/faq.html>. For methodology validation studies, see <http://www.haiweb.org/medicineprices/manual/validation.html>.

**Table 1: Number of facilities surveyed by country, June 2011 data collection exercise**

| Country       | Formal Sites* | Informal Sites** |
|---------------|---------------|------------------|
| Ghana         | 30            | 30               |
| Kenya         | 31            | 29               |
| Nigeria       | 30            | 30               |
| Tanzania      | 30            | 30               |
| All Countries | 121           | 119              |

\*Formal sites defined as registered retail pharmacies

\*\*Informal sites defined as unregulated, unlicensed outlets

Data were collected per facility on two lists of antimalarial medicines: the complete list of AMFm ACTs, and a list of "other antimalarials" of interest which includes selected non-AMFm-supplied ACTs and selected non-ACTs.

<sup>1</sup> The price-tracking surveys are different from the baseline and endpoint surveys for the independent evaluation of AMFm Phase 1, for which the Global Fund has contracted other firms.

## 3.0 Findings

### 3.1 Availability

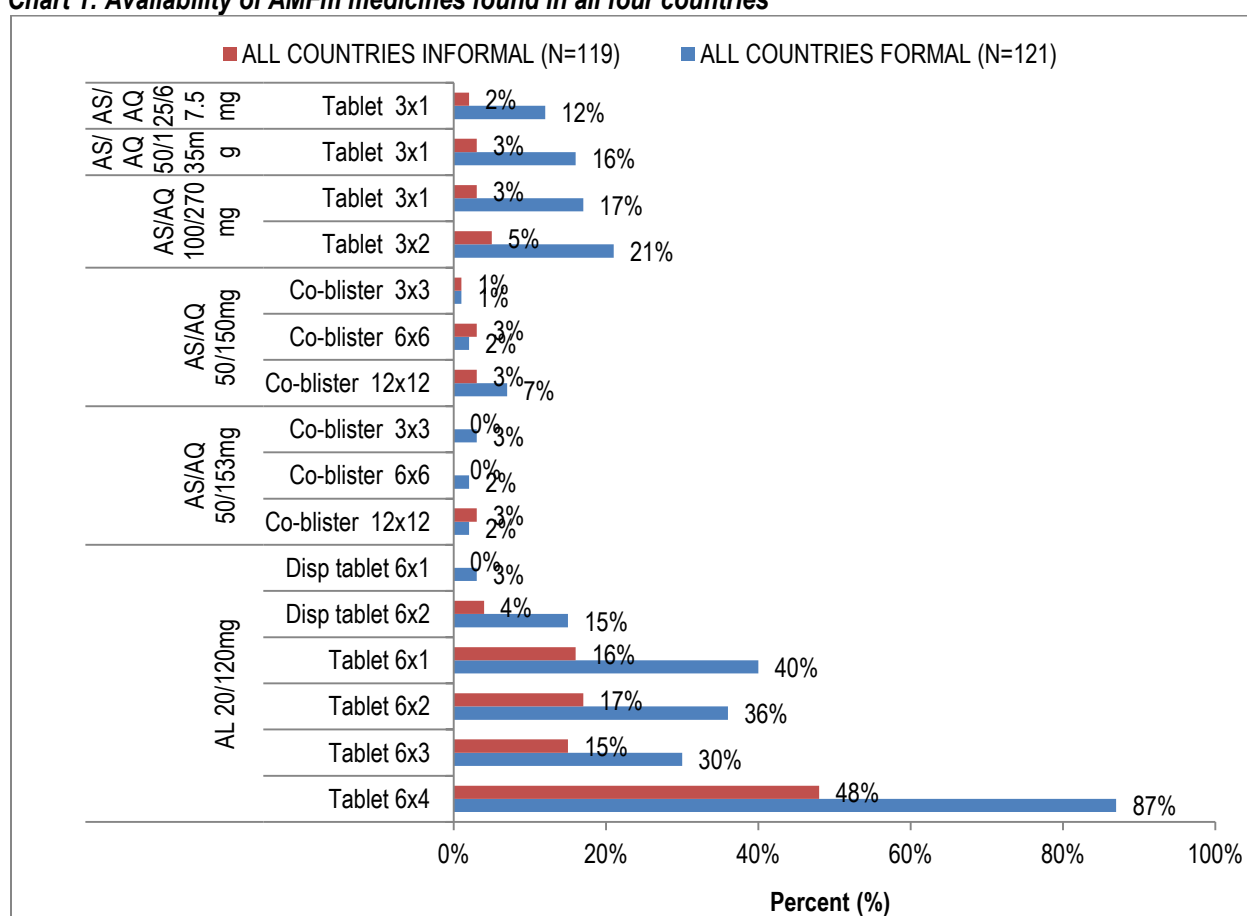
Availability of the surveyed antimalarials varied across countries and across the private sub-sectors.

#### 3.1.1. Availability of AMFm medicines

AMFm medicines were found in the private sectors of all four countries, but not in every formal and informal outlet visited. More AMFm medicines were found in formal outlets than in informal outlets.

Among the AMFm medicines found, artemether/lumefantrine (AL) 20/120mg was the most common. Chart 1 below illustrates the percent of facilities which had AMFm medicines available on the day of data collection. More detail on availability, including *relative availability* and disaggregation by country and sub-sector, may be found in Annexes 1 and 2.

**Chart 1: Availability of AMFm medicines found in all four countries**



#### 3.1.2 Availability of non-AMFm medicines

Each of the non-AMFm medicines surveyed was found at least once across all countries. Findings on their relative availability are presented by country in Annex 3. The most and least available medicines (from the relative availability data) are listed below in Table 2. These results were generated based on the frequency each non-AMFm medicine was found to be available at a facility, regardless of product type (Originator Brand, Lowest Price Generic or Highest Price Generic).

**Table 2: “Most” and “least” available non-AMFm antimalarials surveyed, across countries**

| Most available  | Least available  |
|---|--|
| <ul style="list-style-type: none"> <li>▪ sulphadoxine/pyrimethamine 500/25mg tablet</li> <li>▪ AL 20/120mg tablet</li> <li>▪ doxycycline 100mg tablet</li> <li>▪ dihydroartemisinin-piperaquine 40/320mg tablet</li> <li>▪ sulphamethoxypyrazine/pyrimethamine 500/25mg tablet</li> <li>▪ chloroquine syrup</li> <li>▪ proguanil 100mg tablet</li> <li>▪ quinine 300mg tablet</li> <li>▪ amodiaquine 50mg/5mL suspension</li> </ul> | <ul style="list-style-type: none"> <li>▪ artesunate 50mg suppository</li> <li>▪ artesunate/mefloquine 100/220mg tablet</li> <li>▪ artemether 50mg tablet</li> <li>▪ artesunate/mefloquine 25/55mg tablet</li> <li>▪ atovaquone-proguanil 250/100mg adult tablet</li> <li>▪ chloroquine 150mg tablet</li> <li>▪ quinine 200mg/mL drops</li> <li>▪ chloroquine 100mg tablet</li> <li>▪ sulphadoxine/pyrimethamine drops</li> <li>▪ sulphamethoxypyrazine / pyrimethamine 100mg/5mL suspension</li> </ul> |

### 3.2 Medicine prices

Medicine prices are reported as medians, means, maximums, minimums and quartiles. Selected analyses are presented below for some of the most commonly available medicines, as well as comparisons between AMFm prices and non-AMFm prices. All prices are reported in USD.<sup>2</sup>

#### 3.2.1 ACTs prices: AMFm and non-AMFm

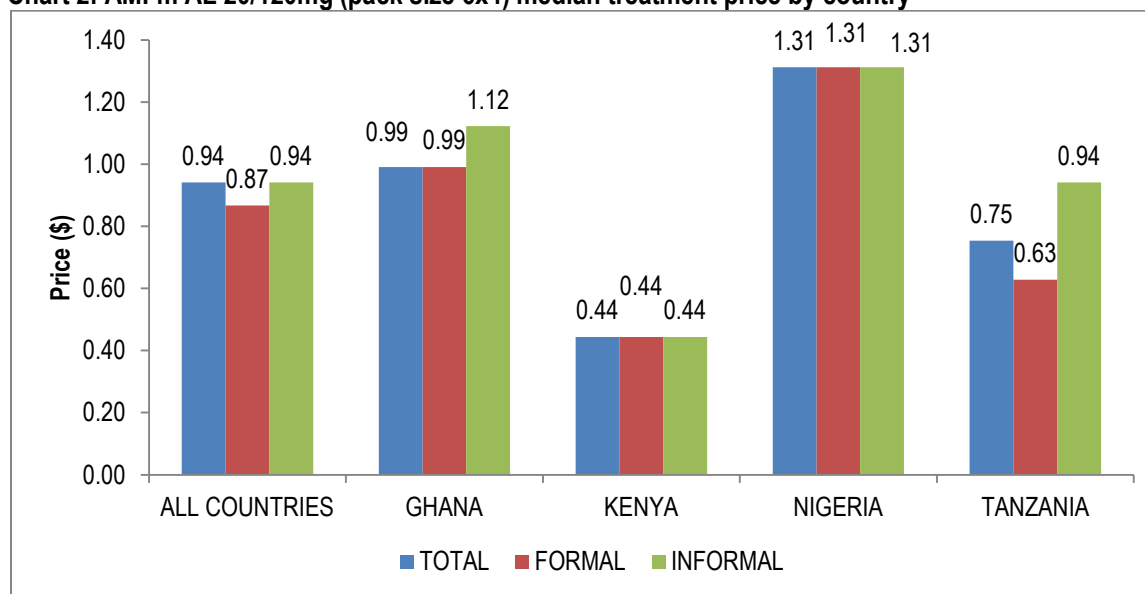
The operational aim of AMFm is to influence the market such that retail prices of co-paid ACTs decline and, over time, become price-competitive with those of the market-dominant non-AMFm antimalarials. AMFm prices varied between countries, but less so between the sub-sectors of the private sector. The Global Fund does not specify a recommended retail price, but countries have the option of doing so if they wish. For each of the countries in the study, the recommended retail prices for adult equivalent treatment packs are as follows:

- Ghana: No more than 1.50 Cedis (about USD1.00)
- Kenya: 40 Kenyan Shillings (about USD0.45)
- Nigeria: 75 Naira (about USD0.50)
- Tanzania: 1,000 Tanzanian Shillings (about USD0.65)

##### 3.2.1.1 AL 20/120mg

As shown in Chart 2 below, Kenya achieved the lowest AMFm treatment price, a median of about \$0.5 for an adult AL treatment (6x4 tablets), across the private sector facilities surveyed. The highest median prices for AMFm AL, above \$1.2 per adult treatment, were found in Nigeria.

<sup>2</sup> USD exchange rates were sourced from [www.xe.com](http://www.xe.com) on the first day of data collection

**Chart 2: AMFm AL 20/120mg (pack size 6x4) median treatment price by country**

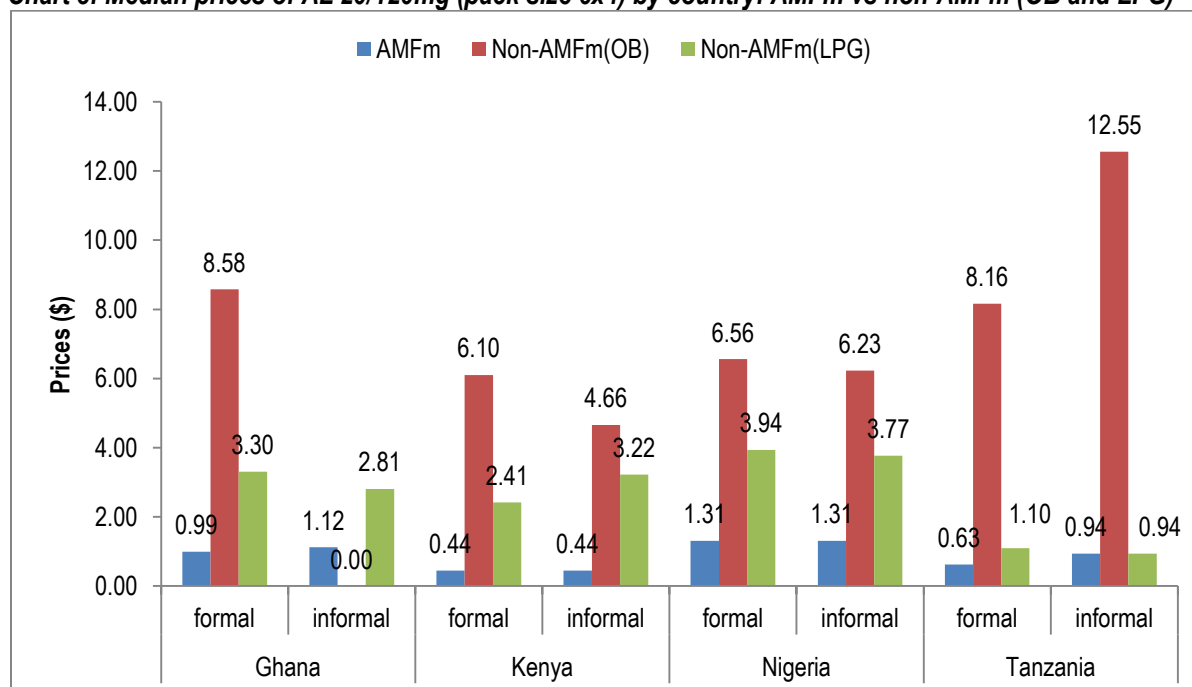
Median prices did not differ between the formal and informal outlets in Kenya and Nigeria, but were higher in informal outlets in both Ghana and Tanzania. Table 4 below further illustrates the AMFm AL 20/120mg prices.

**Table 4: Treatment price data by country for AMFm AL 20/120 (tablet, pack size 6x4) across all manufacturers**

| Country  | Type     | N* | Median | Mean | MIN  | MAX  | Lower Quartile | Upper Quartile | Inter-Quartile Range |
|----------|----------|----|--------|------|------|------|----------------|----------------|----------------------|
| Ghana    | formal   | 31 | 0.99   | 1.31 | 0.79 | 8.59 | 0.99           | 0.99           | 0.00                 |
|          | informal | 5  | 1.12   | 1.08 | 0.67 | 1.32 | 0.99           | 1.32           | 0.33                 |
| Kenya    | formal   | 50 | 0.44   | 0.47 | 0.33 | 1.11 | 0.44           | 0.44           | 0.00                 |
|          | informal | 23 | 0.44   | 0.54 | 0.44 | 1.11 | 0.44           | 0.55           | 0.11                 |
| Nigeria  | formal   | 46 | 1.31   | 1.55 | 0.66 | 9.84 | 0.98           | 1.64           | 0.66                 |
|          | informal | 28 | 1.31   | 1.34 | 0.66 | 2.62 | 0.95           | 1.64           | 0.69                 |
| Tanzania | formal   | 39 | 0.63   | 1.05 | 0.50 | 6.58 | 0.63           | 0.94           | 0.31                 |
|          | informal | 21 | 0.94   | 1.11 | 0.63 | 6.28 | 0.75           | 0.94           | 0.19                 |

\*N is the number of price data points (e.g. based on availability, since price data is only documented for those medicines available on the day of data collection.)

Prices for non-AMFm AL 20/120mg (pack size 6x4, both originator brand (OB) and lowest price generic (LPG)) were higher than AMFm prices across all countries and all sub-sectors. This is illustrated in Chart 3 below. Price details are found in Annex 4.

**Chart 3: Median prices of AL 20/120mg (pack size 6x4) by country: AMFm vs non-AMFm (OB and LPG)**

Median Price Ratios (MPRs) reveal that non-AMFm AL 20/120mg adult treatments cost up to 7 times the AMFm price for the LPG and up to 14 times the AMFm price for the OB. MPRs by country and sub-sector are presented in Table 5 below.

**Table 5: Median Price Ratios for AL 20/120mg: AMFm and non-AMFm across countries**

| Country  | Facility Type | MPR (AMFm: non-AMFm-LPG) | MPR (AMFm: non-AMFm-OB) |
|----------|---------------|--------------------------|-------------------------|
| Ghana    | formal        | 1:3                      | 1:9                     |
|          | informal      | 1:3                      | -                       |
| Kenya    | formal        | 1:5                      | 1:14                    |
|          | informal      | 1:7                      | 1:10                    |
| Nigeria  | formal        | 1:3                      | 1:5                     |
|          | informal      | 1:3                      | 1:5                     |
| Tanzania | formal        | 1:2                      | 1:13                    |
|          | informal      | 1:1                      | 1:13                    |

### 3.2.1.2 Artesunate / amodiaquine

The AMFm data for 50/150 and 50/153 are combined. Median prices for non-AMFm AS/AQ (LPG) were 2 – 5 times higher than the AMFm AS/AQ prices in Ghana and Nigeria. The non-AMFm AS/AQ (OB) prices were 7 – 12 times higher than the AMFm prices in Nigeria. MPRs are shown in Table 6 below.

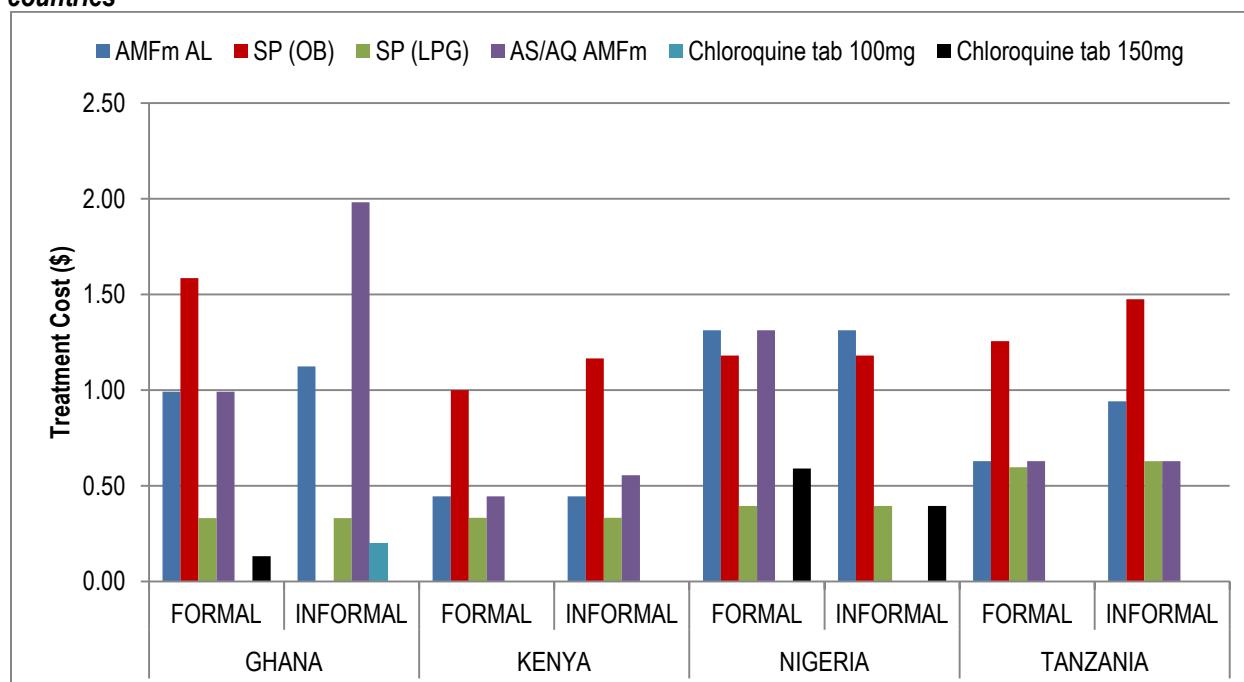
**Table 6: Median Price Ratios for AS/AQ 50/150 (or 153): AMFm and non-AMFm LPG and OB across countries**

| Country  | Facility type | MPR                  |                     |
|----------|---------------|----------------------|---------------------|
|          |               | (AMFm: non-AMFm-LPG) | (AMFm: non-AMFm-OB) |
| Ghana    | formal        | 1:3                  | -                   |
|          | informal      | 1:2                  | -                   |
| Kenya    | formal        | -                    | -                   |
|          | informal      | -                    | -                   |
| Nigeria  | formal        | 1:2                  | 1:7                 |
|          | informal      | 1:5                  | 1:12                |
| Tanzania | formal        | -                    | -                   |
|          | informal      | -                    | -                   |

### 3.2.2 Price variations between AMFm medicines vs non-ACTs by treatment course

The adult treatment prices for AL and AS/AQ were compared to adult treatment prices for a course of treatment with sulphadoxine/pyrimethamine (SP) 500/25mg and chloroquine. Across all four countries and sectors, the lowest price generic SP was generally the lowest treatment cost; in Ghana specifically, chloroquine treatment was the lowest cost treatment. These findings are illustrated below in Chart 4 and with price details in Annex 4.

**Chart 4: Adult treatment median prices for selected AMFm vs non-ACT (SP and chloroquine) across countries**



## 4.0 For Discussion

Consistent with the intent of the price-tracking studies, implementers from each country will examine and interpret the data in their specific contexts, with attention to factors *including but not limited to*: the duration of implementation; the supply of ACTs compared to estimated demand; the duration, extent and intensity of public information campaigns; the pre-AMFm prices of quality-assured ACTs; the reach of private sector supply chains for ACTs; and the nationally recommended retail price, if any, in the country.

## 5.0 Annexes

**Annex 1: Relative availability of AMFm medicines found by country** The N below is the total frequency of different types of medicines found in the facility type. The percentages reported are relative to each other among all the medicines found in the facility and thus add up to 100% (percentages are rounded, thus totals may not exactly be 100%).

| AMFm Medicine                    | Pack Size / Dose  | ALL COUNTRIES |              | GHANA       |             | KENYA        |             | NIGERIA      |             | TANZANIA     |             |
|----------------------------------|-------------------|---------------|--------------|-------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|
|                                  |                   | formal        | infor-mal    | formal      | infor-mal   | formal       | infor-mal   | formal       | infor-mal   | formal       | infor-mal   |
|                                  |                   | <b>N=441</b>  | <b>N=174</b> | <b>N=74</b> | <b>N=18</b> | <b>N=142</b> | <b>N=39</b> | <b>N=122</b> | <b>N=73</b> | <b>N=103</b> | <b>N=44</b> |
| Artemether/Lumefantrine 20/120mg | Tablet 6x4        | 38%           | 44%          | 42%         | 28%         | 35%          | 59%         | 38%          | 38%         | 38%          | 48%         |
| Artemether/Lumefantrine 20/120mg | Tablet 6x3        | 11%           | 11%          | 3%          | 6%          | 8%           | 5%          | 17%          | 16%         | 13%          | 11%         |
| Artemether/Lumefantrine 20/120mg | Tablet 6x2        | 11%           | 13%          | 8%          | 6%          | 8%           | 13%         | 14%          | 14%         | 14%          | 16%         |
| Artemether/Lumefantrine 20/120mg | Tablet 6x1        | 13%           | 13%          | 5%          | 0%          | 13%          | 5%          | 14%          | 19%         | 17%          | 16%         |
| Artemether/Lumefantrine 20/120mg | Disp tablet 6x2   | 4%            | 3%           | 1%          | 0%          | 5%           | 0%          | 4%           | 7%          | 5%           | 0%          |
| Artemether/Lumefantrine 20/120mg | Disp tablet 6x1   | 1%            | 0%           | 0%          | 0%          | 0%           | 0%          | 0%           | 0%          | 4%           | 0%          |
| Artemether/Lumefantrine 40/240mg | Tablet 3x4        | 0%            | 0%           | 0%          | 0%          | 0%           | 0%          | 0%           | 0%          | 0%           | 0%          |
| Artemether/Lumefantrine 40/240mg | Tablet 3x3        | 0%            | 0%           | 0%          | 0%          | 0%           | 0%          | 0%           | 0%          | 0%           | 0%          |
| Artemether/Lumefantrine 40/240mg | Tablet 3x2        | 0%            | 0%           | 0%          | 0%          | 0%           | 0%          | 0%           | 0%          | 0%           | 0%          |
| Artemether/Lumefantrine 40/240mg | Tablet 3x1        | 0%            | 0%           | 0%          | 0%          | 0%           | 0%          | 0%           | 0%          | 0%           | 0%          |
| Artesunate+Amodiaquine 50/153mg  | Co-blisters 12x12 | 0%            | 2%           | 0%          | 17%         | 1%           | 0%          | 1%           | 0%          | 0%           | 0%          |
| Artesunate+Amodiaquine 50/153mg  | Co-blisters 6x6   | 0%            | 0%           | 0%          | 0%          | 1%           | 0%          | 1%           | 0%          | 0%           | 0%          |
| Artesunate+Amodiaquine 50/153mg  | Co-blisters 3x3   | 1%            | 0%           | 1%          | 0%          | 2%           | 0%          | 0%           | 0%          | 0%           | 0%          |
| Artesunate+Amodiaquine 50/150mg  | Co-blisters 12x12 | 2%            | 2%           | 11%         | 11%         | 0%           | 0%          | 0%           | 3%          | 0%           | 0%          |
| Artesunate+Amodiaquine 50/150mg  | Co-blisters 6x6   | 0%            | 2%           | 3%          | 17%         | 0%           | 0%          | 0%           | 1%          | 0%           | 0%          |
| Artesunate+Amodiaquine 50/150mg  | Co-blisters 3x3   | 0%            | 1%           | 1%          | 0%          | 0%           | 0%          | 0%           | 1%          | 0%           | 0%          |
| Artesunate/Amodiaquine 100/270mg | Tablet 3x2        | 6%            | 3%           | 7%          | 6%          | 6%           | 10%         | 4%           | 0%          | 6%           | 2%          |
| Artesunate/Amodiaquine 100/270mg | Tablet 3x1        | 5%            | 2%           | 8%          | 6%          | 8%           | 3%          | 3%           | 0%          | 0%           | 2%          |
| Artesunate/Amodiaquine 50/135mg  | Tablet 3x1        | 4%            | 2%           | 7%          | 6%          | 7%           | 3%          | 2%           | 0%          | 2%           | 2%          |
| Artesunate/Amodiaquine 25/67.5mg | Tablet 3x1        | 3%            | 1%           | 3%          | 0%          | 5%           | 3%          | 2%           | 0%          | 2%           | 2%          |

**Annex 2: Absolute availability of AMFm medicines found by country** This is calculated as percentages of facilities which had the AMFm antimalarial available: regardless of, and across all, manufacturers. For example, if a facility had AL 20/120mg available from three different manufacturers (Novartis, Cipla, Ipca) or just one manufacturer, they would both be captured as facilities with AL 20/120 as “available.”

| Medicine Type                    | Pack Size         | All countries  |                  | Ghana         |                 | Kenya         |                 | Nigeria       |                 | Tanzania      |                 |
|----------------------------------|-------------------|----------------|------------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|
|                                  |                   | formal (n=121) | informal (n=119) | formal (n=30) | informal (n=30) | formal (n=31) | informal (n=29) | formal (n=30) | informal (n=30) | formal (n=30) | informal (n=30) |
| Artemether/Lumefantrine 20/120mg | Tablet 6x4        | 87%            | 48%              | 74%           | 17%             | 97%           | 47%             | 83%           | 63%             | 93%           | 63%             |
| Artemether/Lumefantrine 20/120mg | Tablet 6x3        | 30%            | 15%              | 6%            | 3%              | 33%           | 3%              | 47%           | 37%             | 33%           | 17%             |
| Artemether/Lumefantrine 20/120mg | Tablet 6x2        | 36%            | 17%              | 19%           | 3%              | 30%           | 13%             | 50%           | 30%             | 43%           | 20%             |
| Artemether/Lumefantrine 20/120mg | Tablet 6x1        | 40%            | 16%              | 13%           | 0%              | 50%           | 7%              | 43%           | 33%             | 57%           | 23%             |
| Artemether/Lumefantrine 20/120mg | Disp tablet 6x2   | 15%            | 4%               | 3%            | 0%              | 23%           | 0%              | 17%           | 17%             | 17%           | 0%              |
| Artemether/Lumefantrine 20/120mg | Disp tablet 6x1   | 3%             | 0%               | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              | 13%           | 0%              |
| Artemether/Lumefantrine 40/240mg | Tablet 3x4        | 0%             | 0%               | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              |
| Artemether/Lumefantrine 40/240mg | Tablet 3x3        | 0%             | 0%               | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              |
| Artemether/Lumefantrine 40/240mg | Tablet 3x2        | 0%             | 0%               | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              |
| Artemether/Lumefantrine 40/240mg | Tablet 3x1        | 0%             | 0%               | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              | 0%            | 0%              |
| Artesunate+Amodiaquine 50/153mg  | Co-blisters 12x12 | 2%             | 3%               | 0%            | 10%             | 3%            | 0%              | 3%            | 0%              | 0%            | 0%              |
| Artesunate+Amodiaquine 50/153mg  | Co-blisters 6x6   | 2%             | 0%               | 0%            | 0%              | 3%            | 0%              | 3%            | 0%              | 0%            | 0%              |
| Artesunate+Amodiaquine 50/153mg  | Co-blisters 3x3   | 3%             | 0%               | 3%            | 0%              | 10%           | 0%              | 0%            | 0%              | 0%            | 0%              |
| Artesunate+Amodiaquine 50/150mg  | Co-blisters 12x12 | 7%             | 3%               | 26%           | 7%              | 0%            | 0%              | 0%            | 7%              | 0%            | 0%              |
| Artesunate+Amodiaquine 50/150mg  | Co-blisters 6x6   | 2%             | 3%               | 6%            | 10%             | 0%            | 0%              | 0%            | 3%              | 0%            | 0%              |
| Artesunate+Amodiaquine 50/150mg  | Co-blisters 3x3   | 1%             | 1%               | 3%            | 0%              | 0%            | 0%              | 0%            | 3%              | 0%            | 0%              |
| Artesunate/Amodiaquine 100/270mg | Tablet 3x2        | 21%            | 5%               | 16%           | 3%              | 30%           | 13%             | 17%           | 0%              | 20%           | 3%              |
| Artesunate/Amodiaquine 100/270mg | Tablet 3x1        | 17%            | 3%               | 19%           | 3%              | 37%           | 3%              | 13%           | 0%              | 0%            | 3%              |
| Artesunate/Amodiaquine 50/135mg  | Tablet 3x1        | 16%            | 3%               | 16%           | 3%              | 33%           | 3%              | 7%            | 0%              | 7%            | 3%              |
| Artesunate/Amodiaquine 25/67.5mg | Tablet 3x1        | 12%            | 2%               | 6%            | 0%              | 23%           | 3%              | 10%           | 0%              | 7%            | 3%              |

**Annex 3: Relative availability of non-AMFm medicines found by country** The N below is the total frequency of different types of medicines found in the facility type. The percentages reported are relative to each other among all the medicines found in the facility and thus add up to 100% (percentages are rounded, thus totals may not exactly be 100%).

| Medicine Type  | ALL COUNTRIES |               | GHANA        |               | KENYA        |               | NIGERIA      |               | TANZANIA     |               |
|--|---------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
|  | formal        | infor-<br>mal | formal       | infor-<br>mal | formal       | infor-<br>mal | formal       | infor-<br>mal | formal       | infor-<br>mal |
|  | <b>N=1419</b> | <b>N=716</b>  | <b>N=254</b> | <b>N=38</b>   | <b>N=238</b> | <b>N=73</b>   | <b>N=579</b> | <b>N=386</b>  | <b>N=348</b> | <b>N=219</b>  |
| Amodiaquine suspension 50mg / 5mL                          | 5.6%          | 7.0%          | 9.8%         | 13.2%         | 0.4%         | 2.7%          | 3.8%         | 3.4%          | 9.2%         | 13.7%         |
| Amodiaquine tablet 200mg (as HCl)                          | 4.2%          | 6.3%          | 1.6%         | 2.6%          | 0.0%         | 4.1%          | 4.5%         | 4.9%          | 8.6%         | 10.0%         |
| Artemether tablet 50mg                                     | 0.6%          | 0.0%          | 0.8%         | 0.0%          | 0.0%         | 0.0%          | 1.0%         | 0.0%          | 0.0%         | 0.0%          |
| Artemether/lumefantrine tablet 20/120mg                    | 9.3%          | 8.1%          | 16.5%        | 15.8%         | 7.6%         | 11.0%         | 9.2%         | 8.8%          | 5.5%         | 4.6%          |
| Artesunate suppository 50mg                                | 0.6%          | 0.0%          | 3.5%         | 0.0%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          |
| Artesunate tablet / capsule 50mg                           | 3.2%          | 4.1%          | 1.2%         | 0.0%          | 0.0%         | 0.0%          | 7.4%         | 7.5%          | 0.0%         | 0.0%          |
| Artesunate/amodiaquine tablet 50/153mg                     | 3.0%          | 2.7%          | 5.1%         | 10.5%         | 0.0%         | 0.0%          | 4.3%         | 3.9%          | 1.1%         | 0.0%          |
| Artesunate/mefloquine tablet 25/55mg                       | 0.8%          | 0.1%          | 0.0%         | 0.0%          | 2.9%         | 0.0%          | 0.2%         | 0.0%          | 0.9%         | 0.5%          |
| Artesunate/mefloquine tablet 100/220mg                     | 0.9%          | 0.1%          | 0.0%         | 0.0%          | 2.1%         | 0.0%          | 0.5%         | 0.3%          | 1.4%         | 0.0%          |
| Atovaquone-proguanil adult tablet 250/100mg                | 0.5%          | 0.0%          | 0.8%         | 0.0%          | 2.1%         | 0.0%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          |
| Chloroquine syrup 50mg / 5mL                               | 4.0%          | 7.1%          | 0.4%         | 0.0%          | 0.0%         | 0.0%          | 9.7%         | 13.2%         | 0.0%         | 0.0%          |
| Chloroquine tablet 100mg                                   | 0.0%          | 0.1%          | 0.0%         | 2.6%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          |
| Chloroquine tablet 150mg                                   | 0.3%          | 0.3%          | 0.4%         | 0.0%          | 0.0%         | 0.0%          | 0.5%         | 0.5%          | 0.0%         | 0.0%          |
| Dihydroartemisin tablet 60mg                               | 3.1%          | 2.4%          | 7.5%         | 2.6%          | 0.0%         | 0.0%          | 4.3%         | 4.1%          | 0.0%         | 0.0%          |
| Dihydroartemisinin-piperaquine tablet 40/320mg             | 8.2%          | 5.0%          | 5.5%         | 5.3%          | 18.1%        | 17.8%         | 5.5%         | 4.1%          | 8.0%         | 2.3%          |
| Doxycycline tablet / capsule 100mg                         | 7.7%          | 9.1%          | 7.9%         | 10.5%         | 6.7%         | 6.8%          | 7.9%         | 9.3%          | 7.8%         | 9.1%          |
| Halofantrine suspension 100mg/5mL                          | 2.4%          | 1.3%          | 2.0%         | 0.0%          | 1.3%         | 0.0%          | 4.0%         | 2.3%          | 0.9%         | 0.0%          |
| Halofantrine tablet 250mg                                  | 2.2%          | 1.7%          | 0.8%         | 0.0%          | 5.5%         | 0.0%          | 1.9%         | 3.1%          | 1.4%         | 0.0%          |
| Mefloquine tablet 250mg (as HCl)                           | 1.8%          | 0.0%          | 3.1%         | 0.0%          | 3.4%         | 0.0%          | 0.2%         | 0.0%          | 2.6%         | 0.0%          |
| Proguanil tablet 100mg                                     | 4.8%          | 2.8%          | 1.2%         | 0.0%          | 8.4%         | 0.0%          | 6.0%         | 4.7%          | 2.9%         | 0.9%          |
| Quinine drops 200mg/mL                                     | 0.4%          | 0.4%          | 0.0%         | 0.0%          | 2.1%         | 2.7%          | 0.0%         | 0.0%          | 0.0%         | 0.5%          |
| Quinine suspension 50mg/5mL                                | 5.1%          | 5.0%          | 5.5%         | 5.3%          | 5.9%         | 5.5%          | 3.5%         | 2.3%          | 6.9%         | 9.6%          |
| Quinine tablet 300mg (sulphate or bisulfate)               | 5.4%          | 5.3%          | 5.1%         | 7.9%          | 6.7%         | 4.1%          | 4.0%         | 3.4%          | 7.2%         | 8.7%          |
| Sulphadoxine/pyrimethamine drops                           | 0.3%          | 0.0%          | 0.0%         | 0.0%          | 0.8%         | 0.0%          | 0.0%         | 0.0%          | 0.6%         | 0.0%          |
| Sulphadoxine/pyrimethamine suspension 12.5mg/5mL           | 3.0%          | 4.6%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          | 5.5%         | 6.2%          | 3.2%         | 4.1%          |
| Sulphadoxine / pyrimethamine tablet 500/25mg               | 12.3%         | 16.6%         | 14.6%        | 23.7%         | 11.3%        | 30.1%         | 10.5%        | 13.5%         | 14.1%        | 16.4%         |
| Sulphamethoxypyrazine / pyrimethamine suspension 100mg/5mL | 0.8%          | 0.6%          | 0.0%         | 0.0%          | 0.0%         | 0.0%          | 0.2%         | 0.0%          | 2.9%         | 1.8%          |
| Sulphamethoxypyrazine / pyrimethamine tablets 500/25mg     | 9.5%          | 9.4%          | 6.7%         | 0.0%          | 14.7%        | 15.1%         | 5.4%         | 4.4%          | 14.9%        | 17.8%         |



**Unit price data of non-AMFm lowest price generic artesunate/amodiaquine tablet 50/153mg**

| Country  | Type     | N  | Median | Mean   | MIN    | MAX    | LQ     | UQ     | IQR    |
|----------|----------|----|--------|--------|--------|--------|--------|--------|--------|
| Ghana    | formal   | 13 | 0.1652 | 0.1759 | 0.0550 | 0.4405 | 0.1101 | 0.6541 | 0.5440 |
|          | informal | 3  | 0.0963 | 0.0872 | 0.0550 | 0.1101 | 0.0757 | 0.3097 | 0.2340 |
| Kenya    | formal   | -  | -      | -      | -      | -      | -      | -      | -      |
|          | informal | -  | -      | -      | -      | -      | -      | -      | -      |
| Nigeria  | formal   | 16 | 0.2296 | 0.2698 | 0.1230 | 0.6561 | 0.1572 | 0.9841 | 0.8269 |
|          | informal | 9  | 0.1230 | 0.1558 | 0.0765 | 0.3280 | 0.1230 | 0.4921 | 0.3690 |
| Tanzania | formal   | 2  | 0.1308 | 0.1308 | 0.1046 | 0.1569 | 0.1177 | 0.4316 | 0.3139 |
|          | informal | -  | -      | -      | -      | -      | -      | -      | -      |

**Treatment price data for AMFm artesunate/amodiaquine 100/270mg tablet (treatment pack size 3x2)**

| Country  | Type     | N | Median | Mean   | MIN    | MAX    | LQ     | UQ     | IQR    |
|----------|----------|---|--------|--------|--------|--------|--------|--------|--------|
| Ghana    | formal   | 5 | 0.9911 | 0.9647 | 0.8591 | 0.9911 | 0.9911 | 0.9911 | 0.0000 |
|          | informal | 1 | 1.9822 | 1.9822 | 1.9822 | 1.9822 | 1.9822 | 1.9822 | 0.0000 |
| Kenya    | formal   | 9 | 0.4440 | 0.4563 | 0.3330 | 0.5549 | 0.4440 | 0.4440 | 0.0000 |
|          | informal | 4 | 0.5549 | 0.6659 | 0.4440 | 1.1099 | 0.4440 | 0.7769 | 0.3330 |
| Nigeria  | formal   | 5 | 1.3122 | 1.1416 | 0.7873 | 1.3122 | 0.9841 | 1.3122 | 0.3280 |
|          | informal | - | -      | -      | -      | -      | -      | -      | -      |
| Tanzania | formal   | 6 | 0.6277 | 0.6800 | 0.6275 | 0.9416 | 0.6277 | 0.6277 | 0.0000 |
|          | informal | 1 | 0.6277 | 0.6277 | 0.6277 | 0.6277 | 0.6277 | 0.6277 | 0.0000 |

**Treatment price data for originator brand sulphadoxine/pyrimethamine tablet 500/25mg**

| Country  | Type     | N  | Median | Mean   | MIN    | MAX    | LQ     | UQ     | IQR    |
|----------|----------|----|--------|--------|--------|--------|--------|--------|--------|
| Ghana    | formal   | 9  | 1.5857 | 1.5050 | 1.3215 | 1.6517 | 1.3875 | 1.6517 | 0.2642 |
|          | informal | -  | -      | -      | -      | -      | -      | -      | -      |
| Kenya    | formal   | 16 | 0.9989 | 1.0106 | 0.0222 | 1.6648 | 0.9816 | 1.1099 | 0.1282 |
|          | informal | 8  | 1.1654 | 1.1931 | 0.8879 | 1.6648 | 0.9989 | 1.3319 | 0.3330 |
| Nigeria  | formal   | 29 | 1.1809 | 1.1334 | 0.9841 | 1.3122 | 0.9841 | 1.1809 | 0.1968 |
|          | informal | 20 | 1.1809 | 1.0973 | 0.8529 | 1.3122 | 0.9841 | 1.1809 | 0.1968 |
| Tanzania | formal   | 16 | 1.2555 | 1.3242 | 0.6277 | 1.8832 | 1.1299 | 1.5223 | 0.3923 |
|          | informal | 4  | 1.4752 | 1.4909 | 1.1299 | 1.8832 | 1.2241 | 1.7420 | 0.5179 |

**Treatment price data for lowest price generic sulphadoxine/pyrimethamine tablet 500/25mg**

| Country  | Type     | N  | Median | Mean   | MIN    | MAX    | LQ     | UQ     | IQR    |
|----------|----------|----|--------|--------|--------|--------|--------|--------|--------|
| Ghana    | formal   | 27 | 0.3304 | 0.3510 | 0.2973 | 0.5286 | 0.3304 | 0.3307 | 0.0003 |
|          | informal | 9  | 0.3304 | 0.3451 | 0.1982 | 0.4624 | 0.3304 | 0.4624 | 0.1320 |
| Kenya    | formal   | 11 | 0.3330 | 0.5650 | 0.3330 | 2.2198 | 0.3330 | 0.4994 | 0.1665 |
|          | informal | 14 | 0.3330 | 0.4035 | 0.3330 | 0.8879 | 0.3330 | 0.3857 | 0.0527 |
| Nigeria  | formal   | 29 | 0.3936 | 0.4321 | 0.2624 | 1.0497 | 0.3280 | 0.4593 | 0.1312 |
|          | informal | 28 | 0.3936 | 0.4400 | 0.1968 | 0.9841 | 0.3280 | 0.5249 | 0.1968 |
| Tanzania | formal   | 24 | 0.5964 | 0.5488 | 0.0502 | 0.9416 | 0.4708 | 0.6277 | 0.1569 |
|          | informal | 27 | 0.6277 | 0.6115 | 0.1883 | 0.9416 | 0.5336 | 0.6277 | 0.0942 |

**Treatment price data for lowest priced generic chloroquine tablet 100mg**

| Country  | Type     | N | Median | Mean   | MIN    | MAX    | LQ     | UQ     | IQR    |
|----------|----------|---|--------|--------|--------|--------|--------|--------|--------|
| Ghana    | formal   | 0 | -      | -      | -      | -      | -      | -      | -      |
|          | informal | 1 | 0.1982 | 0.1982 | 0.1982 | 0.1982 | 0.1982 | 0.1982 | 0.0000 |
| Kenya    | formal   | 0 | -      | -      | -      | -      | -      | -      | -      |
|          | informal | 0 | -      | -      | -      | -      | -      | -      | -      |
| Nigeria  | formal   | 0 | -      | -      | -      | -      | -      | -      | -      |
|          | informal | 0 | -      | -      | -      | -      | -      | -      | -      |
| Tanzania | formal   | 0 | -      | -      | -      | -      | -      | -      | -      |
|          | informal | 0 | -      | -      | -      | -      | -      | -      | -      |

**Treatment price data for lowest priced generic chloroquine tablet 150mg**

| Country  | Type     | N | Median | Mean   | MIN    | MAX    | LQ     | UQ     | IQR    |
|----------|----------|---|--------|--------|--------|--------|--------|--------|--------|
| Ghana    | formal   | 1 | 0.1321 | 0.1321 | 0.1321 | 0.1321 | 0.1321 | 0.1321 | 0.0000 |
|          | informal | 0 | -      | -      | -      | -      | -      | -      | -      |
| Kenya    | formal   | 0 | -      | -      | -      | -      | -      | -      | -      |
|          | informal | 0 | -      | -      | -      | -      | -      | -      | -      |
| Nigeria  | formal   | 2 | 0.5905 | 0.5905 | 0.5249 | 0.6561 | 0.5577 | 0.6233 | 0.0656 |
|          | informal | 2 | 0.3936 | 0.3936 | 0.1312 | 0.6561 | 0.2624 | 0.5249 | 0.2624 |
| Tanzania | formal   | 0 | -      | -      | -      | -      | -      | -      | -      |
|          | informal | 0 | -      | -      | -      | -      | -      | -      | -      |