

## 1. Introduction

Price is a major barrier to reliable access to medicines. Availability of medicines in health facilities is also a major determinant of access. To help address these barriers in Kenya, the Ministry of Health conducts surveys on a quarterly basis to monitor medicine prices. Information is collected on availability, affordability, and price variation of a basket of medicines in the public, private and mission sectors.

A total of 83 health facilities, both urban and rural, in four provinces (Central, Coast, Eastern and Nairobi) are surveyed, comprising 26 facilities in the public sector, 31 facilities in the private sector (retail pharmacies and private hospitals), and 26 facilities in the mission sector. Thirty-two medicines that are commonly prescribed and dispensed in Kenya are included in the survey, 28 of which are on the national Essential Medicines List (KEML 2003). Prices charged to patients are recorded for the lowest priced product available at the facility on the day of the survey.

The findings from October 2006 show an overall increase in the availability<sup>1</sup> of the surveyed medicines in the public sector, and an overall decrease in the prices for most medicines in all three sectors. In general, prices are lowest in the public sector.

## 2. Availability

### Key Findings: Availability

1. Of the 28 medicines on the KEML, only five medicines were available in more than 75% of the public sector facilities (using 75% as a target for availability).
2. The two ARVs surveyed (AZT/3TC 300/150mg and 3TC/d4T/NVP 150/40/200mg) were available in 61% and 55%, respectively, of the public health facilities surveyed.
3. Sulphadoxine-Pyrimethamine (SP) was available in more than 80% of the facilities in all the three sectors. The newly introduced antimalarial, Artemether-Lumefantrine, was more available in the private pharmacies (86%), as compared to 68% in the public facilities and 56% in the mission facilities.

**Table 1: Availability of medicines in the three sectors**

Sector	Number of facilities	Median availability October <sup>2</sup>
Overall Public Sector	28	57%
Urban Public Sector	16	63%
Rural Public Sector	12	42%
Overall Private Sector	28	93%
Urban Private Sector	14	93%
Rural Private Sector	14	93%
Overall Mission Sector	24	60%
Urban Mission Sector	13	65%
Rural Mission Sector	11	45%

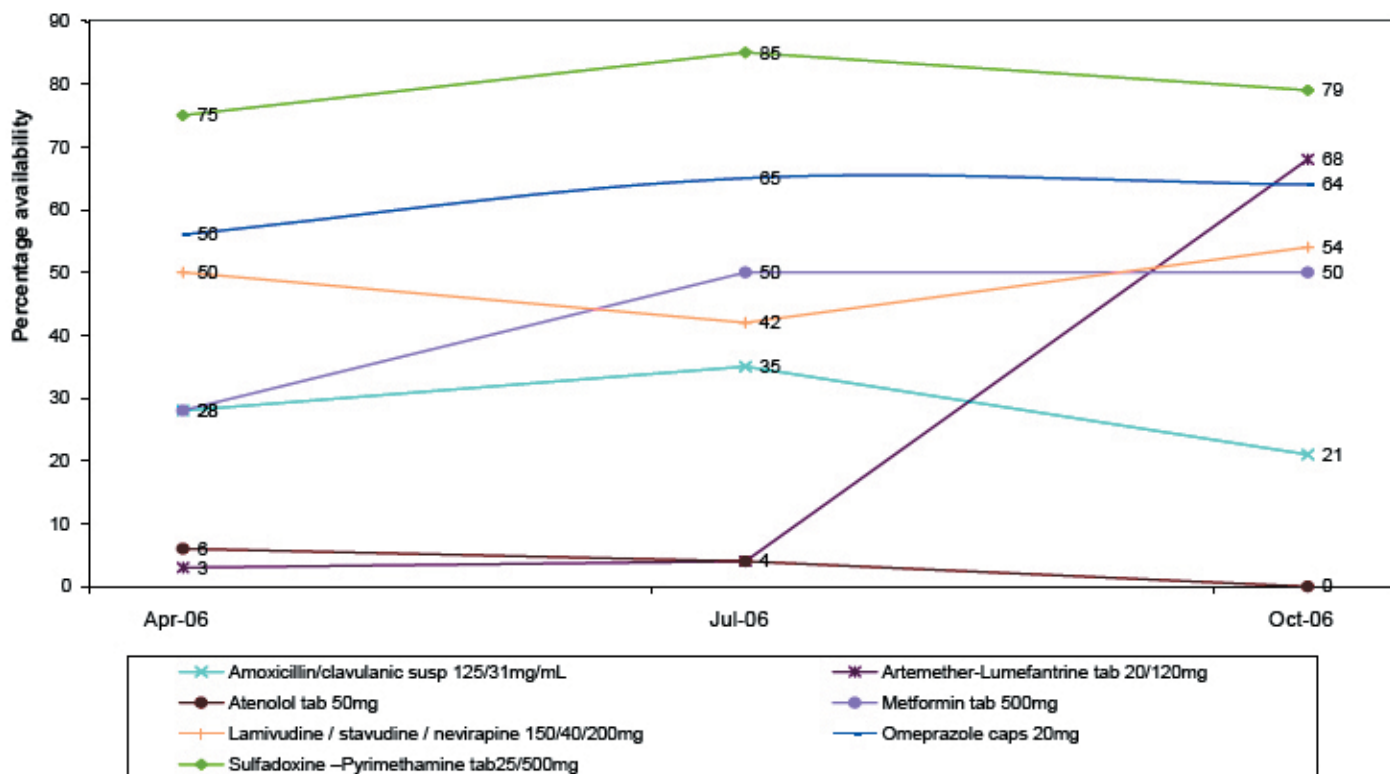
<sup>1</sup> Percentage availability is expressed in terms of the number of facilities in which the medicines were found at the time of data collection.

<sup>2</sup>The median availability is the mid point of the availability of the medicines in the facilities surveyed.

The overall availability of medicines in all three sectors was generally higher in July and October as compared to April 2006. Of the 32 medicines surveyed, the private sector had the highest median availability of 93% followed by the mission sector (60%) and public sector (57%).

The figure below shows the trends in percentage availability between April, July and October for eight selected medicines in the public sector.

**Figure 1: Trends in availability between April, July and October in the public sector**



These eight medicines were chosen with a focus on the recommended treatments for prevalent diseases in Kenya. For these medicines, there was an overall increase in the percentage availability in July as compared to April. In October, the most significant change in availability was noted for Artemether-Lumefantrine which increased from 4% to 68% availability in the public sector facilities surveyed.

### 3. Medicine Prices

#### Key Findings: Medicine Prices

For the same medicines in different sectors:

- Overall private sector medicines prices were 45% higher than public sector prices, while overall mission sector prices were 52% higher than public sector prices.
- Urban vs. rural comparisons revealed the following:
  - Prices in urban mission facilities were 21% higher than in rural mission facilities.
  - Prices in urban public facilities were the same as those in rural public facilities.
  - Prices in rural private pharmacies were 50% higher than in rural mission facilities.
  - Prices in urban private pharmacies were 56% higher than those in urban public facilities.
  - Prices in urban mission facilities were 67% higher than those in urban public facilities.

The table below shows a summary of the comparisons of prices within and between sectors. Compared to the months of April and July, there was a 22% increase in the prices in the public sector, while in the private sector the median decrease in prices was 4%. In the mission sector there was no change in prices for the medicines surveyed.

**Table 2. Median of MPRs<sup>3</sup> - Comparison between and within sectors**

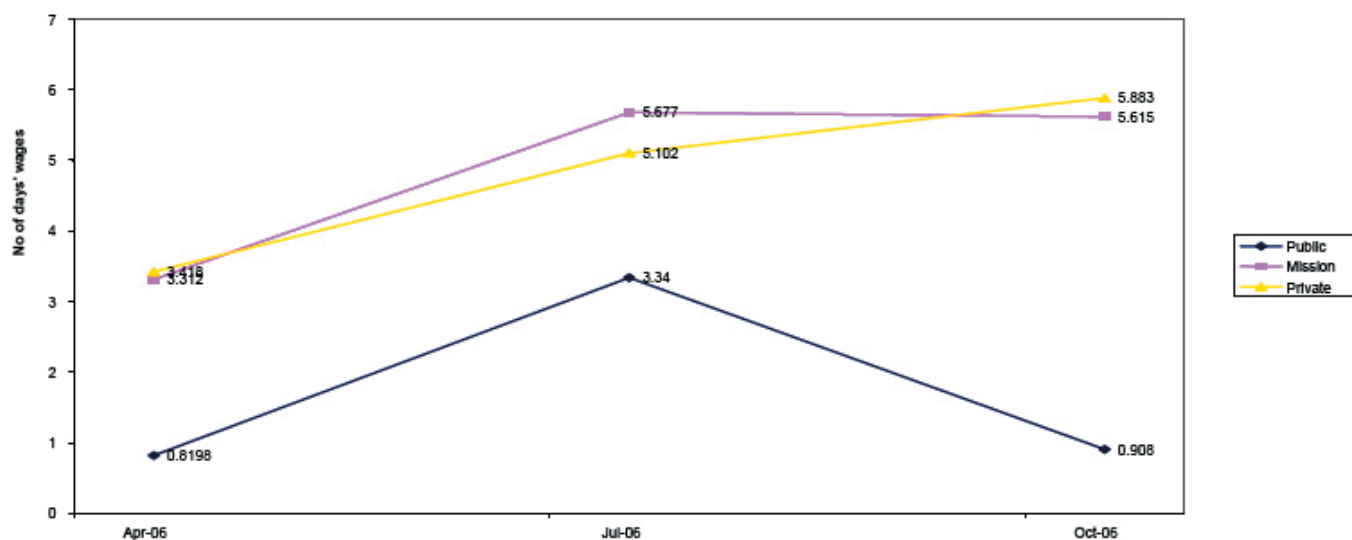
	Overall Private / Public	Overall Mission / Public	Overall Private / Mission	Public: Urban / Rural	Private: Urban / Rural	Mission: Urban / Rural	Urban: Private / Mission	Rural: Private / Mission	Urban: Private / Public	Rural: Private / Public	Urban: Mission / Public	Rural: Mission / Public
Number of times more expensive	1.45	1.52	1.08	1.00	0.90	1.21	1.00	1.50	1.56	1.10	1.67	0.93
# of pairs compared	20	20	28	4	17	23	17	23	14	4	17	4

## 4. Affordability

Affordability is calculated based on the wages of the lowest paid government worker in Kenya (US\$2.33 or 167KSh per day). When using the example of a family with a diabetic father on glibenclamide, a hypertensive mother on atenolol, and a child with acute respiratory tract infection on co-trimoxazole, it is noted that the medicines are unaffordable in all sectors for this worker.

Furthermore, when considering affordability criteria, it must be noted that about 50% of Kenyans live on less than US\$ 1 per day, thus further highlighting the barrier of prices on access to medicines.

**Fig 2. Trends in affordability of treatments for: Adult chronic hypertension and diabetes and paediatric acute respiratory infection**



## 5. Discussion

In the public sector, certain key essential medicines had low availability (<75%), although there were notable improvements for specific medicines, such as for malaria. Following the national policy change to Artemether-Lumefantrine (AL) as the first line treatment, there was a marked increase in its availability from 4% of public sector facilities in July to 68% of facilities in October. It was however notable that Sulphadoxine-Pyrimethamine (SP) and Amodiaquine were still widely available (in about 80% and 75% of all facilities respectively). Availability of SP would be expected only in malaria-endemic areas (for use in pregnancy), whereas availability of Amodiaquine would be expected to decrease as the availability of AL increases. SP, AL, and Amodiaquine were available free of charge in more than 90% of the public sector facilities.

In general, the prices of most medicines are high in the private and mission sectors and are thus unaffordable for average Kenyans.

<sup>3</sup> Comparing the Median Price Ratios (MPRs) of the same medicines in the three sectors. The MPR is a ratio of the local price divided by an international reference price (IRP) converted into the same currency. An MPR of 2 means the price in Kenya is twice the IRP; an MPR of 0.5 means the price in Kenya is half the IRP.

<b>Survey Manager</b>	<b>Medicine Prices Monitoring Advisory Group</b>
Patrick Mubangizi, HAI Africa	Dr F. M. Siyoi, Ministry of Health / Pharmacy and Poisons Board (PPB) Prof I. O. Kibwage, University of Nairobi / PSK Julius Ombogo, INRUD Kenya Chris Forshaw, Ministry of Health / DANIDA Regina Mbindyo, World Health Organization (WHO) Kenya Christa Cepuch, HAI Africa

## ANNEXES

### Annex 1. Availability in the Public Sector

Percentage availability	Medicines	
5 medicines were found in more than 75% of facilities	Amodiaquine tab 200mg Amoxicillin tab / cap 250mg Cotrimoxazole tab 480mg	Diazepam tab 5mg SP tab 500/25mg

### Annex 2. Availability in the Mission Sector

Percentage availability	Medicines	
14 medicines were found in less than 50% of the mission facilities	Aciclovir tab 200mg Amoxicillin/clavulanic acid susp 125/31mg/mL Amoxicillin/clavulanic acid tab 500/125mg Artemether/lumefantrine tab 20/120mg Atenolol tab 50mg Captopril tab 25mg Diclofenac tab 25mg	Fluconazole 200mg Fluoxetine tab 20mg Fluphenazine inj 25mg/ml 3TC/d4T/NVP 150/40/200mg Ranitidine tab 150mg Salbutamol inhaler 100mcg/dose Zidovudine/lamivudine 300/150mg
13 medicines were found in 50-75% of pharmacies	Amitriptyline tab 25mg Amodiaquine tab 200mg Carbamazepine tab 200mg Ceftriaxone inj. 1g Ciprofloxacin tab 500mg Cotrimoxazole susp 480mg/mL Cotrimoxazole tab 480mg	Glibenclamide tab 5mg Ibuprofen tab 400mg Metformin 500mg Nifedipine retard 20mg Omeprazole tab 20mg Phenytoin tab 100mg
5 medicines were found in over 75% of pharmacies	Amoxicillin tab 250mg Clotrimazole cream 1% Diazepam tab 5mg	Furosemide tab 40mg Sulfadoxine/pyrimethamine 500/25mg

### Annex 3. Availability in the Private Pharmacies

Percentage availability	Medicines	
5 medicines were found in less than 50% of the private pharmacies	Diclofenac tab 25mg Fluoxetine tab 20mg Phenytoin tab 100mg	3TC/d4T/NVP 150/40/200mg Zidovudine/lamivudine 300/150mg
5 medicines were found in 50-75% of facilities	Aciclovir tab 200mg Amoxicillin/Clav acid susp. 125/31mg/mL Ceftriaxone inj. 1g	Fluconazole tab 200mg Fluphenazine inj 25mg/mL
22 medicines were found in over 75% of facilities	Amitriptyline tab 25mg Amodiaquine tab 200mg Amoxicillin 250mg Amoxicillin/clavulanic acid tab 500+125mg Artemether/lumefantrine 20/120mg Atenolol tab 50mg Captopril tab 25mg Carbamazepine tab 200mg Ciprofloxacin tab 500mg Clotrimazole cream 1% Cotrimoxazole paed. susp 240mg/5mL	Cotrimoxazole tab 480mg Diazepam tab 5mg Furosemide tab 40mg Glibenclamide tab 5mg Ibuprofen tab 400mg Metformin tab 500mg Nifedipine tab 20mg Omeprazole tab 20mg Ranitidine tab 150mg Sabutamol inhaler 100mcg/dose Sulfadoxine/pyrimethamine 500/25mg

## Annex 4. Comparison of Individual (Median) Medicine Prices (in KSh) Between Sectors

Medicine	Overall Public	Public Urban	Public Rural	Overall Private	Private Urban	Private Rural	Overall Mission	Mission Urban	Mission Rural
Aciclovir tab 200mg	15.00	15.00	25.00	25.00	24.50	25.60	19.98	23.56	16.40
Amitriptyline tab 25mg	1.00	0.99	1.67	1.00	1.00	2.00	1.00	1.33	1.00
Amodiaquine tab 200mg				4.00	3.33	5.00	3.67	4.17	3.67
Amoxicillin caps/tab 250mg	1.99	2.00	1.67	2.50	2.25	2.50	3.00	3.00	2.50
Amoxicillin/clavulanic acid susp 125/31 mg/mL	2.65	2.65		5.10	5.12	4.75	4.14	4.84	3.07
Amoxicillin/clavulanic acid tab 500/125mg	30.00	30.00		78.00	73.80	78.57	66.00	70.00	63.00
artemether/lumefantrine tab 20/120mg				25.00	24.38	26.25	26.67	26.58	54.50
Atenolol tab 50mg				11.00	10.50	11.00	12.00	12.00	11.43
Beclometasone inhaler 50 mcg/ dose	6.66	6.66		3.00	2.78	3.30	2.59	2.75	2.59
Captopril tab 25mg	5.00	5.00		10.00	10.00	10.00	14.60	10.00	14.80
Carbamazepine tab 200mg	1.83	0.83	2.00	3.00	3.00	4.00	3.05	3.00	3.40
Ceftriaxone inj 1 g powder	110.00	100.00	225.00	285.00	320.00	270.00	325.00	300.00	350.00
Ciprofloxacin tab 500mg	13.50	12.50	13.50	10.00	10.00	10.00	8.00	14.00	5.00
Clotrimazole cream/oint 15%w/v	2.00	2.25	1.75	2.50	2.25	2.50	2.00	2.50	1.50
Co-trimoxazole tab 80/400mg	0.60	0.40	1.20	0.75	1.20	0.60	0.54	0.59	0.50
Diazepam tab 5mg	2.50	2.50	2.50	2.00	2.00	2.00	2.00	2.00	1.15
Diclofenac tab 25mg	1.00	1.00	2.00	1.00	1.00	1.50	1.00	1.00	1.00
Fluconazole caps/tab 200 or 150mg	80.00	80.00		200.00	210.00	145.00	58.75	57.50	60.00
Fluoxetine cap/tab 20mg				30.50	34.00	25.50	46.00	57.00	35.00
Fluphenazine inj. 25mg/mL	77.50	100.00	55.00	150.00	165.00	150.00	119.00	105.00	130.00
Furosemide tab 40mg	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Glibenclamide tab 5mg	1.83	2.00	1.00	4.50	4.00	5.00	3.00	3.33	1.67
Ibuprofen tab 400mg	1.75	1.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Metformin tab 500mg	1.66	1.67	1.00	6.50	6.00	7.00	5.00	7.00	3.00
Lamivudine/stavudine/ nevirapine 150/40/200mg				40.00	45.00	36.67	13.70		13.70
Nifedipine retard 20mg	1.66	1.67	1.60	6.50	5.00	10.00	5.00	7.50	3.33
Omeprazole caps 20mg	3.57	3.79	3.57	20.00	20.00	20.00	10.00	10.00	10.00
Phenytoin cap 100mg	0.92	1.06	0.83	1.00	1.00	1.00	2.00	3.00	1.83
Pyrimethamine/sulfadoxine tab 25/500 mg				6.67	6.67	7.50	8.33	10.00	6.67
Ranitidine tab 150mg	3.33	3.33	5.67	10.00	8.00	10.00	6.00	8.00	6.00
Salbutamol inhaler 0.1 mg/ dose	1.33	0.90	1.75	1.60	1.60	1.55	1.50	1.50	1.24
Zidovudine/lamivudine tab 300/150mg				56.49	85.17	27.82	30.00	40.00	30.00

The monitoring of medicines prices in Kenya has been made possible through a WHO / HAI - Africa collaborative project on access to medicines. The Ministry of Health gratefully acknowledges the financial support of DFID - UK through this project.

### For more information or comments, please contact:

*The Chief Pharmacist, Ministry of Health, Cathedral Road, PO Box 30016, Nairobi Kenya.*

*Or The Survey Manager, Tel: 0733 606 048 or Email: [info@baiafrica.org](mailto:info@baiafrica.org)*