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interventions to improve sustainable access to
affordable medicines in 6 sub-Saharan African countries**

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proposées pour améliorer durablement l'accès aux
médicaments dans 6 pays de l'Afrique subsaharienne**



**World Health
Organization**

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MEDICINE PRICES IN GHANA

MEASURING MEDICINE PRICES

One-third of the global population lacks reliable access to needed medicines. The high price of medicines is a key factor in their inaccessibility. High prices are particularly burdensome to patients in developing countries where most medicines are paid for out-of-pocket by individual patients.

In September 2004, the Ghanaian Ministry of Health was supported by the World Health Organisation (WHO), Health Action International-Africa (HAI-A) and the HAI-A partner in Ghana, the Catholic Health Service, to carry out a national survey of medicine prices. The survey was conducted in the public, private and NGO sectors. Using the WHO/HAI methodology: *Medicine Prices: a new approach to measurement*¹, the Ministry assessed the affordability of key medicines, analyzed the prices and availability of a selection of important medicines, and identified price components (taxes, mark-ups etc.) of locally produced and imported medicines. The evidence obtained was used to determine factors contributing to high and variable medicine prices and identify strategies and policies to improve their affordability. This is one of a series of papers summarizing the results of medicine price surveys carried out by countries across Africa and elsewhere in the world.

BACKGROUND - GHANA

Ghana is classified as a low income country by the World Bank with a per capita GDP of US\$271 (2000); the economy is agriculture based accounting for 46.7% to GDP, the services sector and the industry sector account for 24.3% and 22.1% respectively. Per capita public health spending was US\$6.3 (2001) and US\$13.5 (2004); per capita public sector medicines expenditure is estimated at US\$1 (2006).

Medical services in Ghana are provided by the central government, local institutions, a sizeable number of missionary institutions (private not-for-profit), and a relatively small number of private-for-profit practitioners. Since 1971, there have been user fees and since 1985 revolving drug funds ("Cash & Carry") which have assisted in the sustainability of the public health system as well as encouraging efficiency and quality of services. However there are concerns that these can be financial barriers resulting in inequities in access to health services and especially access to medicines. Most districts have implemented the National Health Insurance Scheme, within which a medicines list and new reimbursement scheme is being established, which is intended to bring relief for out-of-pocket payments for medicines.

Purchase of Pharmaceuticals by the Central Medical Store (CMS) is through international competitive bidding and also through local private suppliers. The Regional Medical Stores (RMS) and teaching hospitals are meant to procure drugs through the CMS and from the local private sector. All the regional hospitals and facilities are, in turn, expected to procure from the RMS in their respective regions. While it is MOH policy for facilities to procure through the public system, except in cases of unavailability, it has been observed that there are significant private sector purchases at all levels, in some regions and facilities, purchases from the private sector being in the majority.

Patients pay for medicines in the public sector and these fees tend to increase with each level of distribution which together with the mixed procurement methods and lack of an effective pricing policy results in highly variable prices and higher prices in the most remote areas. There are provisions for exemptions for some vulnerable and needy groups of patients, where the health facility claims a reimbursement from the Ministry of Finance through the Ministry of Health. This reimbursement process has been fraught with a lot of problems and many facilities have stopped providing medicines free of charge to these groups except in the most deprived areas. It is hoped that the National Health Insurance Scheme will improve access for those whom are entitled to exemptions.

Drug registration, import and export control, and the licensing of warehouses and manufacturing premises are functions of the Food and Drugs Board. Licensing of pharmacies and chemical sellers is the responsibility of the Pharmacy Council.

The government provides around 60% care in the public sector, mainly in the urban areas and the mission sector around 40%, mainly in the rural areas. In the private sector, there are approximately 950 pharmacies, 8000 chemical sellers and 200 private health facilities.

MEDICINES, AREAS AND SECTORS SURVEYED

The medicines surveyed included a standardized core group of 30 medicines that were surveyed in all countries and a supplementary group of up to 20 medicines specific to Ghana. The core group was selected based on global burden of disease, availability of standard formulations and importance. Medicines in the supplementary group were selected because of the importance and/or the frequency of their use in treating important common health problems in Ghana. Both medicines on and off patent and on and off the national essential medicines list were represented.

In all, 49 medicines were surveyed in 4 regions in Ghana: Accra, Upper East Region, Ashanti Region and the Western Region.

Areas measured in each sector	Public facilities	Private outlets	NGO facilities
Affordability to patients	✓	✓	✓
Procurement price	✓		✓
Price to patients	✓	✓	✓
Availability to patients	✓	✓	✓

PRESENTATION OF PRICE INFORMATION

The WHO/HAI survey methodology presents prices as median price ratios (MPR). The MPR is the ratio of the local price divided by an international reference price converted into the same currency. As such, the reference price serves as an external standard for evaluating local prices. An MPR of 1 means the local price is equivalent to the reference price whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the 2003 *Management Sciences for Health (MSH) International Drug Price Indicator Guide* (<http://erc.msh.org/>). The MSH guide pulls together information from recent price lists of large, non-profit generic medicine suppliers and thus reflects the prices governments could be expected to pay for medicines. Patient prices can be expected to be higher than the prices paid by governments, but these surcharges should be minimal and relatively consistent across medicines and facilities.

INTERPRETATION OF FINDINGS

Where survey findings point to the high cost or poor availability of a few specific medicines, they are named in this paper. However, these are unlikely to be isolated incidents. As only around 50 medicines were included in this survey, a finding of high prices or low availability of even 3 or 4 medicines – or 6% to 8% of those studied – could indicate a greater problem and requires further investigation.

AFFORDABILITY TO PATIENTS

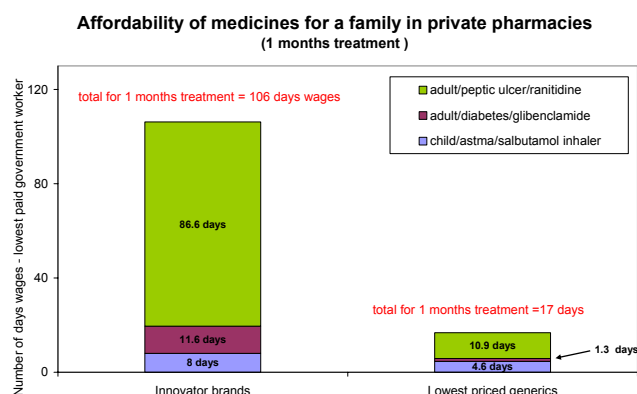
In this paper, affordability is calculated in terms of the number of days the lowest paid unskilled government worker would have to work to pay for one treatment course for an acute condition or one month's treatment for a chronic condition. At the time of the survey, the lowest paid unskilled government worker earned Ghanaian Cedis 9,348 (US\$1.05) per day. According to the World Development Report 2005, 78.5% of the population of Ghana lives on less than US\$ 2 per day and 44.8% on less than US\$ 1 per day. Nearly half of the population lives on less than the salary of the lowest paid government worker and hence the affordability for many Ghanaians will be lower than what is presented for this worker.

Overall, medicines were found to be unaffordable to a large proportion of the population; purchasing treatments for chronic conditions was found to require many more days' work than purchasing treatments for acute conditions.

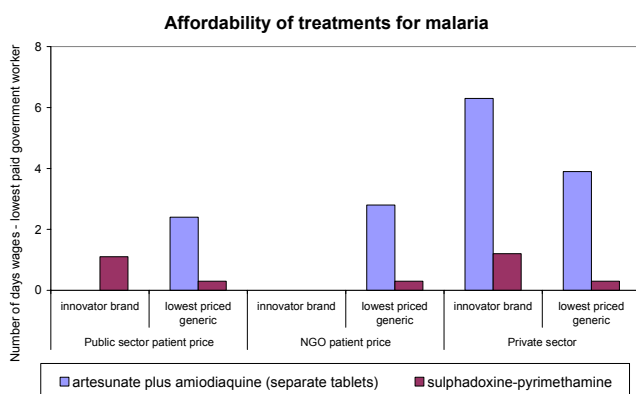
The burden is especially great for a family needing treatment for several conditions at the same time, e.g. using the lowest priced generic medicines, it would take at least 17 days' wages for the lowest paid unskilled government worker to purchase a medicines for a child with asthma, an adult with diabetes and an adult with a peptic

¹ <http://www.haiweb.org/medicineprices/>

ulcer²; treatment with innovator brand medicines would require 106 days salary for a months treatment – clearly unaffordable in both cases. The chart below presents the breakdown for each of the medicines in innovator and generic forms



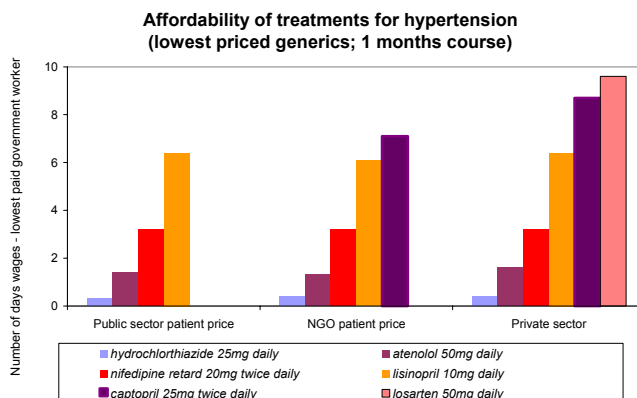
At the time of the study, chloroquine was the recommended treatment for uncomplicated malaria, which has since changed to artesunate + amodiaquine from January 2006. The chart below demonstrates the affordability of malaria medicines, with the recent implementation of the new malaria drug policy of artesunate+ amodiaquine compared to sulphadoxine-pyrimethamine (presented as chloroquine not surveyed in the study - a course of sulphadoxine being similarly priced to a course of chloroquine).



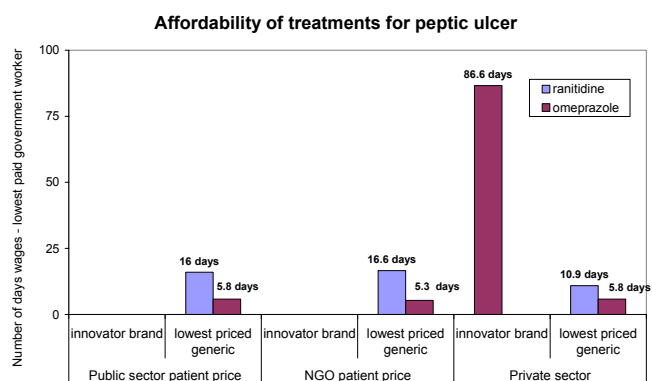
The older antimalarials are similarly priced in all sectors, however this was not found to be the case with the new regimen, where it was cheapest in the public sector. However compared to the previously recommended treatment, a course of artesunate + amodiaquine is 8 times the price or would require a minimum of an additional 2 days work when purchased in the public sector, raising to 13 times or an additional 3.6 days work in the private sector.

Cost-effectiveness analyses indicate that antimalarial treatment is generally highly cost-effective, even in the most resource-poor countries. In practice, however, the costs of treating malaria patients with the most effective antimalarials may well not be affordable for communities or households. With such policy changes, it is essential that measures are taken to ensure continued access to malaria treatment.

It was found that there are significant differences in affordability between medicines within a therapeutic category. The chart below illustrates these differences for five lowest priced generics used for treatment of hypertension – monotherapy – if more than one drug is used, the numbers shown are additive. Where medicines are available in more than one sector, the patient prices are relatively similar; there being much greater differences between therapeutic choices and/or antihypertensive class.



Treatment of peptic ulcers was found to be particularly unaffordable, with at least 5 days salary for omeprazole and 10 days salary for ranitidine necessary to purchase a months treatment. Prices for the generics didn't vary widely between sectors, with the prices in the private sector being lowest for generic ranitidine. Despite the innovator brand being 15 times the price of the lowest priced generic equivalent, it was stocked by 1 in 3 retail pharmacies – indicating that it probably has a significant market share.



The price of medicines is a key aspect of their affordability. In this survey, public procurement prices were assessed as were the prices charged to patients at public sector facilities, private retail pharmacies, and non-governmental facilities.

PUBLIC SECTOR PROCUREMENT PRICES

Public sector procurement prices for the lowest priced generic medicines were found to be 0.95 times the international reference prices. In other words, Ghana is procuring medicines at 5% less than the published international market prices of non-profit generic medicine suppliers.

Number of times more expensive: public procurement prices compared to international reference prices		
Price (MPR)	Innovator brand ³	Lowest priced generic ⁴
No. of medicines included in analysis	0	26
Median MPR		0.95
25 th percentile		0.61
75 th percentile		1.99

n= 49 medicines

Five medicines were procured at less than half the international reference price, however, seven were procured for more than twice the international reference price, the seven procured at apparently high prices compared with what is on the international market are listed in the table below.

² Number of days wages for lowest paid government worker to buy 1 months of medicines. This family has the following medicines requirements each month: 1 salbutamol inhaler for a child with asthma; infection; 60 glibenclamide tablets 5mg for an adult with diabetes; 60 ranitidine tablets 150mg for 1 adult with peptic ulcer

³ Innovator brands are not generally procured for use in the public sector

⁴ The lowest priced generic equivalent was determined facility-by-facility and was the lowest priced generic equivalent product available for sale at each facility included in the survey. In determining public procurement prices, the lowest priced generic at the national medical store or on the national tender document was used.

Number of times more expensive: public procurement prices compared to international reference prices – lowest priced generics	
albendazole	9.27
ciprofloxacin	2.12
clotrimazole cream	3.92
fluphenazine	5.76
mebendazole	6.00
phenytoin	2.05
sulphadoxine-pyrimethamine	2.04

PUBLIC SECTOR PATIENT PRICES

At public sector facilities, patient prices for the lowest priced generic medicines were found to be 2.43 times international reference prices. Patient prices ranged from 0.88 times (or 12% less than) the international reference price for diazepam to 23.17 times the international reference price for albendazole. This may relate to items being sourced from the private sector instead from the public sector procurement sources.

Number of times more expensive: patient prices for medicines at public health facilities compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included ⁵	3	30
Median MPR	14.91	2.43
25 th percentile	11.13	1.35
75 th percentile	40.93	5.11

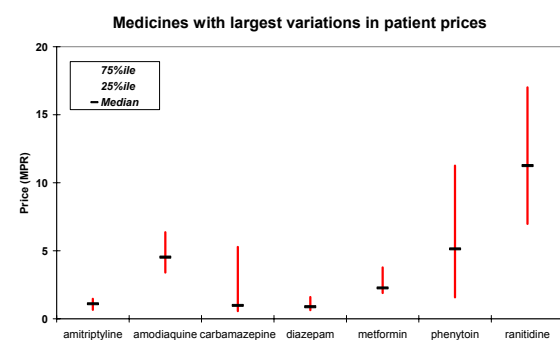
n= 28 facilities; 49 medicines

Three innovator brands were found: ceftriaxone, mebendazole and sulphadoxine-pyrimethamine – generic equivalents of these were also found at very much lower prices, these differences are shown in the table below:

Number of times more expensive: patient prices for innovator brands and lowest priced generics at public health facilities			
Price (MPR)	Innovator brand	Lowest priced generic	Number of times more expensive
ceftriaxone	7.35	2.20	3.3
mebendazole	66.94	5.05	13.3
sulphadoxine-pyrimethamine	14.91	4.36	3.4

n= 28 facilities

There are no national guidelines on how medicines prices are fixed in the public sector and it was found that the prices patients are charged for lowest priced generic medicines varied from facility to facility in the public sector. In some cases, the prices varied by many multiples. Those medicines with the greatest variation in price are shown below.



The following table shows those generic medicines for which patients at public facilities are charged at least five times published international prices for the lowest priced generic and/or innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

Number of times more expensive: patient prices for medicines at public facilities compared to international reference prices		
Medicine	Lowest priced generic (MPR)	Innovator brand (MPR)
albendazole	23.17	
atenolol	5.43	
ceftriaxone injection	2.20	7.35
ciprofloxacin	7.05	
clotrimazole skin cream	5.42	
diclofenac 50mg	8.58	
glibenclamide	5.47	
mebendazole	5.05	66.94
phenytoin	5.13	
ranitidine	11.26	

PRIVATE SECTOR PATIENT PRICES

Out of the 49 medicines surveyed, innovator brand products were found for 29 of them in private retail pharmacies.

At private retail pharmacies, patient prices for the lowest priced generics were found to be 4.12 times the international reference price. The prices charged to patients for the lowest priced generic medicines ranged from 0.99 times the international reference price for artemether to 33.65 times the international reference price for fluconazole 150mg⁷.

For innovator brands, patient prices were found to be 18.47 times the international reference price. The prices charged to patients for the innovator brand medicines ranged from 2.86 times the international reference price for amoxicillin + clavulanic acid to 154.34 times the international reference price for fluconazole 150mg.

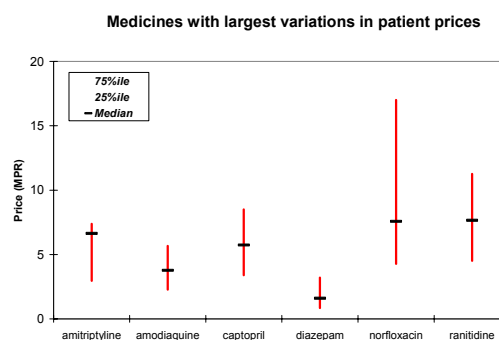
Number of times more expensive: patient prices for medicines at private retail pharmacies compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	18	39
Median MPR	18.47	4.12
25 th percentile	9.22	2.04
75 th percentile	60.67	7.00

n= 28 facilities; 49 medicines

Availability at private retail pharmacies	Innovator brand	Lowest priced generic
Median availability	5.4%	64.3%
25 th percentile	0	32.1%
75 th percentile	32.1%	92.9%

n= 28 facilities; 49 medicines

In the private sector, the prices patients are charged for medicines varied from pharmacy to pharmacy. In some cases, the prices varied by many multiples. The lowest priced generics medicines with the greatest variation in price are shown below.



The following table shows those generic medicines for which patients at private retail pharmacies are charged at least fifteen times published international prices for the lowest priced generic and/or innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

⁵ Patient prices were analyzed only in cases where at least 4 data points were available, i.e. price data were collected from at least four facilities.

⁶ 25mg strength also studied

⁷ 200mg strength also studied

Number of times more expensive: patient prices for medicines at private retail pharmacies compared to international reference prices			
Medicine	Lowest priced generic - LPG (MPR)	Innovator brand - IB (MPR)	Number of times more expensive IB: LPG
albendazole	30.1	60.3	2.0
amodiaquine	3.8	32.1	8.4
diclofenac 50mg	8.6	125.3	14.6
fluconazole 150mg	33.6	154.3	4.6
glibenclamide	5.5	49.2	8.9
mebendazole	20.2	78.3	3.9
nifedipine retard	2.6	20.6	7.9
ranitidine	7.7	60.8	7.9
sulfadoxine-pyrimethamine	4.4	16.3	3.7

n= 28 facilities

When comparing the price difference between innovator brand medicines and lowest priced generic medicines matched pairs of medicines where the same medicines were found in both groups, innovator brands were found to be 3.74 times more expensive than the lowest priced generic (n=17 medicines). The table below shows the differential between the price patients at private retail pharmacies are charged for the innovator brand and the lowest priced generic equivalent for the eight medicines with the greatest differences. It can be seen that some of the innovator brands were widely available (i.e. in 1 or 3 pharmacies or more, up to 90%) and hence likely to have a noteworthy market-share, despite having a high brand premium to the price.

Patient prices and availability at private retail pharmacies for innovator brands compared to lowest priced generic equivalents			
Number of times more expensive innovator brand: lowest priced generic		Availability	
		Innovator brand	Generic
amodiaquine	8.5	39.3%	57.1%
diclofenac 50mg	14.6	35.7%	92.9%
fluconazole 150mg	4.6	57.1%	85.7%
glibenclamide	9.0	53.6%	92.9%
mebendazole	3.9	89.3%	53.6%
nifedipine retard	8.0	42.9%	100%
ranitidine	7.9	32.1%	75.0%
sulfadoxine-pyrimethamine	3.7	78.6%	96.4%

n= 28 facilities

NON-GOVERNMENTAL SECTOR PROCUREMENT PRICES

NGO sector procurement prices for the lowest priced generic medicines were found to be 1.31 times international reference prices. In other words, procurement is 31% more than the published international market prices of non-profit generic medicine suppliers.

Number of times more expensive: public procurement prices compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included in analysis	0	22
Median MPR		1.31
25 th percentile		0.92
75 th percentile		2.93

n= 49 medicines

Eight of the medicines were procured at less than the international reference price, however, seven were procured for more than twice the international reference price, the seven procured at apparently high prices compared with what is on the international market are listed in the table below.

Number of times more expensive: public procurement prices compared to international reference prices – lowest priced generics	
ciprofloxacin	3.17
clotrimazole cream	3.51
diclofenac 50mg	3.43
fluconazole 150mg	17.95
glibenclamide	2.19
ketoconazole	3.36
nystatin pessary	5.32

NON-GOVERNMENTAL SECTOR PATIENT PRICES

In the non-governmental sector, the price charged to patients for lowest priced generics was found to be 2.75 times the international reference price. Patient prices ranged from 0.77 times the international reference price for artesunate to 31.41 times the international reference price for fluconazole 150mg. No innovator brands were found.

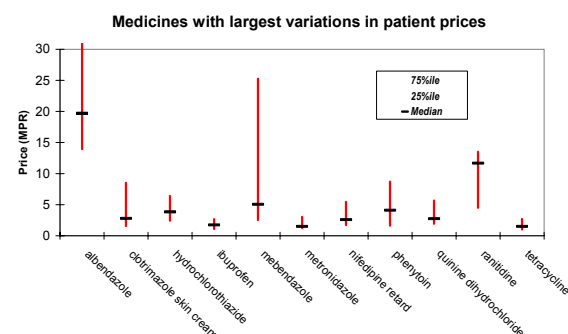
Number of times more expensive: patient prices for medicines at non-governmental facilities compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	0	35
Median MPR		2.75
25 th percentile		1.58
75 th percentile		4.44

n= 28 facilities; 49 medicines

Availability at non-governmental facilities	Innovator brand	Lowest priced generic
Median availability	0%	32.1%
25 th percentile	0%	7.1%
75 th percentile	0%	67.9%

n= 28 facilities; 49 medicines

In non-governmental facilities, the prices patients are charged for medicines varied from facility to facility for some medicines. Those lowest priced generics with the greatest variation in price are shown below.



The following table shows those generic medicines for which patients at NGO facilities are charged at least five times published international prices for the lowest priced generic and/or innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

Number of times more expensive: patient prices for medicines at NGO facilities compared to international reference prices	
Medicine	Lowest priced generic (MPR)
albendazole	19.70
ciprofloxacin	7.05
diclofenac 50mg	6.87
fluconazole 150mg	31.41
mebendazole	5.05
ranitidine	11.67

INTER-SECTORAL COMPARISONS

The table below compares the prices of lowest priced generics between sectors where the same medicines were found in both sectors.

For lowest priced generics:	Were this many times more expensive:	Than:
Public sector patient prices (n=22 medicines)	2.36	Public procurement prices
NGO patient prices (n=20 medicines)	1.99	NGO procurement prices
NGO procurement prices (n=16 medicines)	1.43	Public sector procurement prices
Private retail patient prices (n=30 medicines)	1.66	Public sector patient prices
Private retail patient prices (n=30 medicines)	1.49	NGO patient prices
NGO patient prices (n=30 medicines)	1.13	Public sector patient prices

While NGO sector procurement prices were 43% more than for public sector procurement prices for lowest priced generics, the NGO sector procurement price of some medicines was as much as 3.7 times the public procurement price.

Number of times more expensive: NGO sector procurement prices compared to public sector procurement prices (lowest priced generic)	
amodiaquine	2.32
amoxicillin	1.95
cotrimoxazole	2.06
diclofenac 50mg	1.99
ketoconazole	1.81
salbutamol inhaler	3.70

While public sector patient prices for lowest priced generics were more than double public procurement prices, the public sector patient price of some medicines was as much as 8.2 times the public procurement price; this may relate to items being sourced from the private sector instead from the public sector procurement sources.

Number of times more expensive: patient prices at public sector facilities compared to public sector procurement prices (lowest priced generic)	
amodiaquine	8.2
ceftriaxone injection	3.7
ciprofloxacin	3.3
co-trimoxazole suspension	3.5
diclofenac 50mg	5.0
glibenclamide	3.3
metformin	3.0
metronidazole	3.3

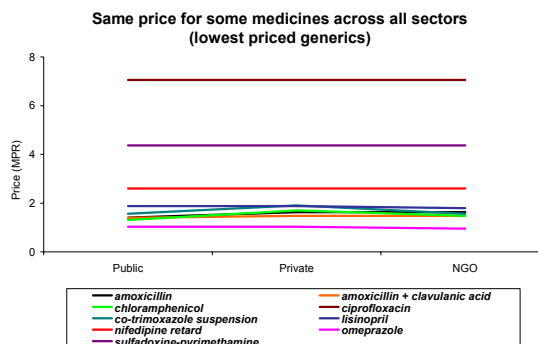
Though patient prices in the private sector were generally 66% more than those in the public sector, some medicines were up to six times more expensive; however 11 medicines were the same or lower in the private sector. The similarity of medicine prices between the sectors is presented later.

Number of times more expensive: patient prices in private retail pharmacies compared to public sector facilities (lowest priced generic)	
amitriptyline	6.0
carbamazepine	4.0
mebendazole	4.0

Though patient prices in the private sector were generally 49% more than those in the NGO sector, some medicines were up to six times more expensive; however 9 medicines were the same or lower in the private sector. The similarity of medicine prices between the sectors is presented later.

Number of times more expensive: patient prices in private pharmacies compared to NGO facilities (lowest priced generic)	
amitriptyline	2.4
carbamazepine	3.5
clotrimazole cream	3.9
mebendazole	4.0

The patient prices of some medicines in the public sector were exactly the same or almost the same in all sectors; the chart below illustrates this for 9 medicines. Interestingly a number of these medicines had a marked higher than average difference between patient prices and procurement prices in the public sector and a lower than average difference between patient prices and procurement prices in the NGO sector.



Patients need medicines to not only be affordable, but also available. Some medicines were not widely available in either public or private sectors others were more widely available in the private sector. In some cases, this increased availability was accompanied by no or a small differences in patient prices and in other cases the prices charged to patients in the private sector were much higher – up to 6 times the price for amitriptyline. The following table presents availability in the public and private sectors, and the percentage difference in patient prices at public facilities versus private retail pharmacies for lowest priced generics.

Lowest priced generic	% Availability		Number of times more expensive: patient prices at private retail pharmacies compared to public facilities
	Public sector facilities (n=28)	Private retail pharmacies (n=28)	
amitriptyline	14.3%	71.4%	6.0
amoxicillin +			
clavulanic acid	17.9%	82.1%	1.1
atenolol	28.6%	92.9%	1.1
carbamazepine	14.3%	46.4%	4.0
clotrimazole cream	14.3%	78.6%	2.0
glibenclamide	39.3%	92.9%	1.0
hydrochlorothiazide	17.9%	64.3%	1.4
mebendazole	21.4%	53.6%	4.0
metformin	32.1%	92.9%	1.9
phenytoin	14.3%	50.0%	1.8

Some medicines, in all sectors seem to be at higher prices than others when compared to the international reference price e.g. albendazole, ciprofloxacin, diclofenac 50mg, fluconazole 150mg, mebendazole, ranitidine and sulphadoxine-pyrimethamine.

PRICE COMPONENTS

Examining the components that make up the price of medicines is an important step in determining how to reduce their cost. The final price paid for a medicine whether by the government or a patient reflects the manufacturers selling price plus all the intervening price additions. These additions include the cost of importing, distributing and dispensing the medicine.

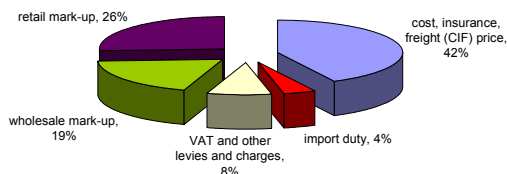
In the private sector, the cost, insurance, freight price represents around 42% of the final patient price, with import duties, taxes and levies being 12% and the wholesaler and retailer mark-ups account for 19% and 26% of the final patient price respectively.

In the public sector, there are guidelines on pricing, which should result in the following price composition: cost, insurance, freight price representing around 59% of the final patient price, with import duties,

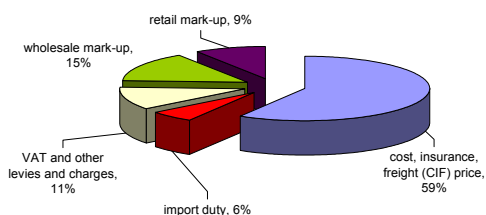
taxes and levies being 17% and the wholesaler and retailer mark-ups accounting for 15% and 9% of the final patient price respectively.

The following two charts present these two situations graphically.

Typical proportions of add-ons of final patient price for an generic product in the private retail pharmacy sector



Typical proportions of add-ons of final patient price for an generic product in the public sector



RECOMMENDATIONS FROM COUNTRY REPORT AND STAKEHOLDER MEETING

A summary of the recommendations is provided below, for a fuller explanation see the full survey report:

- Develop a national medicines prices policy and a process to monitor the implementation; consider aspects of prescribing maximum mark-ups
- Remove taxes and tariffs on all essential medicines; and for raw materials and equipment for local production of medicines
- Develop a medicines prices index to monitor prices on an ongoing basis
- Promote generic prescribing and dispensing to health professionals and the public
- Take action against anti-competitive practices in the pharmaceutical sector
- Encourage local manufacturing
- Promote bulk procurement of medicines for both the public and private sectors
- Improve procurement prices achieved by the public and NGO sectors for those medicines where apparently high prices are paid; investigate the extent of this situation for all essential medicines procured
- Encourage pharmacies and chemical sellers to open throughout the country to maximize geographical access

ANALYSIS

Below is a further analysis of the findings presented in this paper.

AFFORDABILITY AND ACCESS TO MEDICINES

“Out-of-pocket” purchase of most medicines is not affordable to the majority of the population; exemption schemes need to be functional to maximize equitable access.

Consideration of price in the choice of medicines could determine whether a patient can obtain a medicine for treatment, or not.

As newer malaria treatments are much less affordable, changes in malaria policy must be accompanied with measures to ensure constant affordable access to the entire population through the public and private sectors.

Some medicines, in all sectors seem to be at higher prices than others when compared to the international reference price.

There was marked price variation for some medicines within the public, private and NGO sectors - some patients are paying much more than they would be in other facilities or pharmacies.

Some key medicines which were not widely available at all in the public sector were up to more than six times more expensive in the

private sector than they would have been in the public sector if available.

It appears that prices in all sectors for some medicines are perhaps set to the market rate of what it is perceived the patient is willing or able to pay rather than a mark-up of costs from the acquisition price.

Chemical sellers were not included in the study, which together with the public and NGO facilities are important suppliers of medicines to patients in the rural areas; an evaluation of their actual and potential role in the supply of medicines, including pricing of medicines could be very informative.

PUBLIC SECTOR

Patient prices were more than double the public sector procurement price, although some medicines, including key essential medicines had much greater multiples of price, indicating either varying sources or application of a non-uniform mark-up.

In some communities, for some medicines, patients are charged considerably in excess to the prices that should be charged; good procurement prices are not being passed onto the community.

Innovator brands with very high brand premiums are being purchased and sold at a high premium in the public health facilities.

As the public sector mark-ups are widely much higher than is the policy and prices for some medicines are higher than the public sector procurement price, the public sector procurement “buy public first” before buying from the private sector policy is not being widely followed.

The patient prices of some medicines in the public sector were the same or almost the same in private and NGO sectors, for some medicines this was despite the procurement prices often being low.

Medicine prices varied greatly from facility to facility.

The public sector procurement system is paying more than might be necessary for a small, but significant proportion of medicines.

PRIVATE SECTOR

Some branded medicines were widely available and hence were likely to have noteworthy market share despite having a high brand premium.

NGO SECTOR

Prices in NGO facilities were markedly greater than in the public sector; prices being similar to that of the private retail pharmacies; availability in the NGO sector was generally greater than in the public sector.

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The Advisory Committee: Mdm S Abdul-Salaam, A/Chief Director, MoH; Prof D Ofori-Adjei, Director, Noguchi Memorial Institute of Medical Research; Dr F Nyongator, Director, Policy, Planning, Monitoring & Evaluation Unit, Ghana Health Service (GHS); Mr S Boateng, Director, Procurement & Supplies Unit, MoH; Mr F D Yellu, Chief Pharmacist, GHS; Mr K Larbi, Ministry of Trade & Presidential Special Initiative; The Chief Director, Ministry of Finance & Economic Planning; Ms S Baldwin, Health Advisor, Department for International Development; Ms M Gyansa-Lutterodt, Deputy Programme Manager, Ghana National Drugs Programme, MoH; Dr E. Addai, Policy, Planning, Monitoring & Evaluation Unit, MoH; Ms E Andrews, WHO; Mrs Y Nkrumah, Ghana Food & Drugs Board; Mr J Tamakloe, Registrar, General Department, Accra; Dr G Buckle, Director Catholic Health Service. Survey Management Team: Mr C Allotey, Mr A Yamyolia, Ms E Andrews, Mrs M Gyansa-Lutterodt. Data Entry and Processing: Mrs P Eshun; Ms L Afoko. External Technical Assistance from WHO and HAI: Dr G Forte; Mr A Desta; Mr M Auton; Ms M Ewen; Ms C Cepuch; Ms M Woldetensae.

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MEDICINE PRICES IN KENYA

MEASURING MEDICINE PRICES

One-third of the global population lacks reliable access to needed medicines. The high price of medicines is a key factor in their inaccessibility. High prices are particularly burdensome to patients in developing countries where most medicines are paid for out-of-pocket by individual patients.

In September 2004, the Kenya Ministry of Health was supported by the World Health Organisation (WHO), Health Action International-Africa (HAI-A) and the HAI-A partners in Kenya, to carry out a national survey of medicine prices. The survey was conducted in the public, private and NGO sectors. Using the WHO/HAI methodology: *Medicine Prices: a new approach to measurement*¹, the Ministry assessed the affordability of key medicines, analyzed the prices and availability of selected key medicines, and identified price components (taxes, mark-ups etc.) of locally produced and imported medicines. The evidence obtained was used to determine factors contributing to high and variable medicine prices and identify strategies and policies to improve their affordability. This is one of a series of papers summarizing the results of medicine price surveys carried out by countries across Africa and elsewhere in the world.

BACKGROUND - KENYA

Kenya is classified as a low income country by the World Bank with an estimated GNP per capita of US\$ 453 in 2001. Total health expenditure (public & private) was estimated at US\$ 30 per capita in 2000, with an estimated 76% being private expenditure; total medicines expenditure (public & private) being estimated at US\$7 per capita²; public sector medicines budget was about US\$0.51 per capita in 2002.

Health care is provided by the Ministry of Health, Missions/NGO and the private sector; the Mission sector providing around 40% health care. In the public sector and mission sectors, there is a policy of cost sharing with an exemption policy for some needy groups. However there is no policy with respect to what prices are charged and the exemption system is not very accessible for outpatient services. The government health insurance scheme covers only a small percentage of in-patient care. In the public sector there are 1700 health centres and dispensaries; 160 hospitals and two referral hospitals. Access to health centres in the rural areas is poor with many households living more than 10 km from a health facility.

The public sector drug supply system has been reformed through the establishment of the Kenya Medical Supplies Agency (KEMSA) as a body corporate with the mandate of developing and operating a viable commercial service for the procurement and sale of drugs and medical supplies to the public health institutions. Procurement for the Ministry of Health (MOH) is done by MOH Procurement and Supply Division, through KEMSA; external procurement agencies; and by health facilities at provincial and district level. Pharmaceutical supplies are distributed by KEMSA which has a drug storage and distribution system with a central warehouse in Nairobi and a well-developed network of regional depots and district drug stores.

In the private sector there are more than 600 registered retail pharmacies.

MEDICINES, AREAS AND SECTORS SURVEYED

The medicines surveyed included a standardized core group of 30 medicines that were surveyed in all countries and a supplementary group of 15 medicines specific to Kenya. The core group was selected based on global burden of disease, availability of standard formulations and importance. Medicines in the supplementary group were selected because of the importance and/or the frequency of their use in treating important common health problems in Kenya. Both medicines on and off patent and on and off the national essential medicines list were represented.

In all, 45 medicines were surveyed in the 53 public health facilities; 57 private sector outlets and 47 mission/NGO health facilities.

Areas measured in each sector	Public facilities	Private outlets	NGO facilities
Affordability to patients	✓	✓	✓
Procurement price	✓		✓
Price to patients	✓	✓	✓
Availability to patients	✓	✓	✓

PRESENTATION OF PRICE INFORMATION

The WHO/HAI survey methodology presents prices as median price ratios (MPR). The MPR is the ratio of the local price divided by an international reference price converted into the same currency. As such, the reference price serves as an external standard for evaluating local prices. An MPR of 1 means the local price is equivalent to the reference price whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the 2003 *Management Sciences for Health (MSH) International Drug Price Indicator Guide* (<http://erc.msh.org/>). The MSH guide pulls together information from recent price lists of large, non-profit generic medicine suppliers and thus reflects the prices governments could be expected to pay for medicines.

INTERPRETATION OF FINDINGS

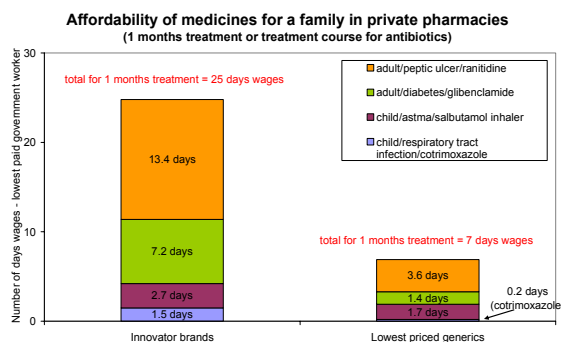
Where survey findings point to the high cost or poor availability of a few specific medicines, they are named in this paper. However, these are unlikely to be isolated incidents. As only around 50 medicines were included in this survey, a finding of high prices or low availability of even 3 or 4 medicines – or 6% to 8% of those studied – could indicate a greater problem and requires further investigation.

AFFORDABILITY

In this paper, affordability is calculated in terms of the number of days the lowest paid unskilled government worker would have to work to pay for one treatment course for an acute condition or one month's treatment for a chronic condition. At the time of the survey, the lowest paid unskilled government worker earned KSh 166 (US\$2.045) per day. According to the World Development Report 2005, 58.3% of the Kenyan population lives on less than US\$2 per day. More than half of the population lives on less than the salary of the lowest paid government worker and hence the affordability for many Kenyans will be lower than for this worker.

Overall, affordability of treatments for chronic conditions was much less than affordability of treatments for acute conditions.

The burden is especially great for a family needing treatment for several conditions at the same time, e.g. using the lowest priced generic medicines, it would take just under 7 days' wages for the lowest paid unskilled government worker to purchase a salbutamol inhaler for a child with asthma, a course of cotrimoxazole suspension for a child with a respiratory tract infection, glibenclamide tablets for an adult with diabetes and ranitidine tablets for an adult with a peptic ulcer; innovator brands would need 25 days work for a months supply for equivalent medicines.

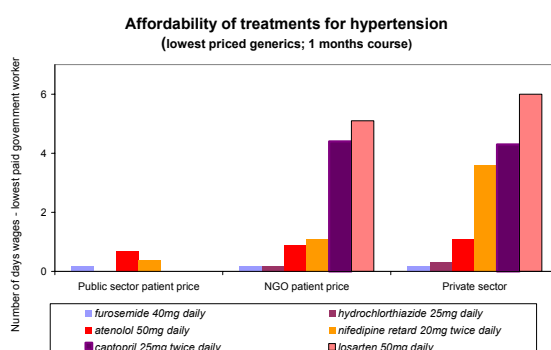
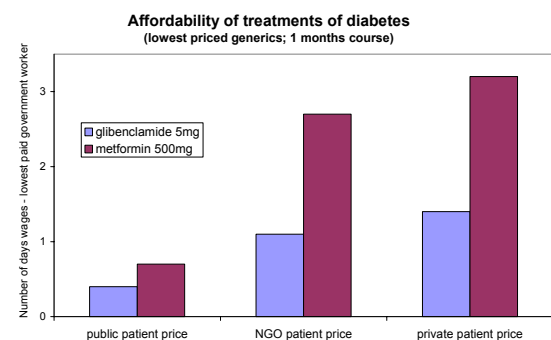


The survey also found marked differences in affordability between medicines within a therapeutic category. The two graphs below illustrate these differences for two lowest priced generics used to treat diabetes and hypertension. While there may be clinical advantages of one treatment option over the other, for patients paying out-of-pocket

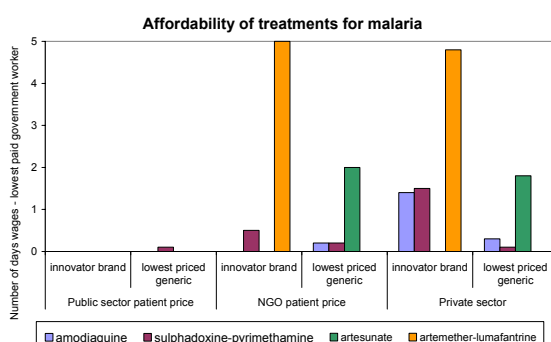
¹ <http://www.haiweb.org/medicineprices/>

² World Medicines Situation, WHO 2004

and in particular when a medicine is not available in the public sector, patients may be unable to afford the preferred treatment.



At the time of the study, sulphadoxine-pyrimethamine was the recommended treatment for uncomplicated malaria, which is currently being changed to artemether + lumefantrine. The chart below demonstrates the affordability of malaria medicines with the implementation of the new malaria drug policy of artemether + lumefantrine compared to the current sulphadoxine-pyrimethamine.



The new regimen is around 50 times more expensive in the private sector than the old regimen in the public or private sectors – or an additional 4 ½ days work for branded artemether + lumefantrine (there is no generic) compared with the lowest priced generic sulphadoxine-pyrimethamine.

Cost-effectiveness analyses indicate that antimalarial treatment is generally highly cost-effective, even in the most resource-poor countries. In practice, however, the costs of treating malaria patients with the most effective antimalarials may well not be affordable for communities or households. With such policy changes, it is essential that measures are taken to ensure continued access to malaria treatment.

The price of medicines is a key aspect of their affordability. In this survey, public procurement prices were assessed as were the prices charged to patients at public sector facilities, in the private sector, and non-governmental facilities.

PUBLIC SECTOR PROCUREMENT PRICES

Public sector procurement prices for the lowest priced generic medicines were found to be 0.61 times international reference prices. In other words, Kenya is procuring medicines at 39% less than the international market prices of non-profit generic medicine suppliers.

Nine of the 24 medicines were procured at lower than half the international reference price; However, two medicines were procured for more than twice the international reference price; as such, Kenya is paying 2.81 and 2.21 times published international market prices for captopril and tetracycline eye ointment.

Number of times more expensive: public sector procurement prices compared to international reference prices		
Price (MPR)	Innovator brand ³	Lowest priced generic ⁴
No. of medicines included	0	24
Median MPR		0.61
25 th percentile		0.38
75 th percentile		0.66

n= 45 medicines

PUBLIC SECTOR PATIENT PRICES

At public sector facilities, patient prices for the lowest priced generic medicines were found to be 1.99 times international reference prices. Patient prices ranged from 0.26 times (or 74% less than) the international reference price for amoxicillin + clavulanic acid to 13.18 times the international reference price for chlorpheniramine.

Number of times more expensive: public sector patient prices for medicines compared to international reference prices		
Price (MPR)	Innovator brand (MPR)	Lowest priced generic
No. of medicines included ⁵	1	28
Median MPR	3.61	1.99
25 th percentile		1.29
75 th percentile		3.33

n=29 facilities⁶; 45 medicines

38 of the 45 medicines studied were on the essential drug list of Kenya. The median availability of those medicines on the Kenya Essential Drugs List was found to be 65% (n=53 facilities). It should be noted that from within these 38, some of the medicines would only be expected to be at the referral hospital level and not at some of the lower level facilities that were surveyed.

The following medicines were found to have an availability of greater than 80%: amodiaquine, amoxicillin, carbamazepine, chlorpheniramine, cotrimoxazole suspension, diazepam, doxycycline, furosemide, gentamycin injection, metronidazole, sulphadoxine-pyrimethamine, tetracycline eye ointment and tinidazole.

Both innovator brand and generic version ceftriaxone injection was found the public sector, the patient price of the generic version being 38% lower than the innovator brand price.

The following table shows those medicines for which patients at public facilities are charged at least 3 times published international prices for the lowest priced generic and/or innovator brand. A difference of 3 times or more between the international reference price and the price charged to patients in the public sector makes these medicines seem particularly expensive than what could be available or achieved.

Number of times more expensive: public sector patient prices compared to international reference prices		
Medicine	Lowest priced generic (MPR)	Innovator brand (MPR)
albendazole	12.61	
ceftriaxone injection	2.24	3.61
chlorpheniramine	13.18	
diazepam	5.27	
doxycycline	4.18	
gentamycin	3.69	
glibenclamide	3.5	
metformin	3.33	
sulphadoxine-pyrimethamine	3.19	
tinidazole	3.33	

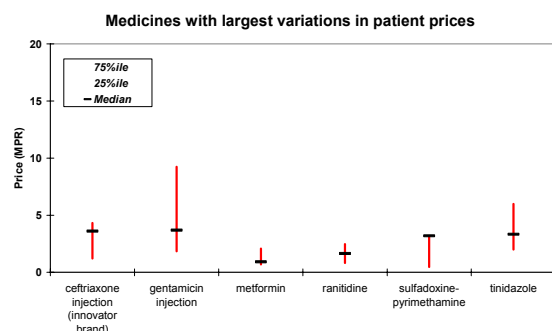
There are no national guidelines on how medicines prices should be determined in the public sector and it was found that the prices patients are charged for lowest priced generic medicines varied from facility. In some cases, the prices varied by many multiples. Those medicines with the greatest variation in price are shown below.

³ Innovator brands are not generally procured for use in the public sector

⁴ The lowest priced generic equivalent was determined facility-by-facility and was the lowest priced generic equivalent product available for sale at each facility included in the survey. In determining public procurement prices, the lowest priced generic at the national medical store or on the national tender document was used.

⁵ Patient prices were analyzed only in cases where at least 4 data points were available, i.e. price data were collected from at least four facilities.

⁶ Not all facilities were included in this analysis as some facilities provided medicines free of charge or provided medicines at a flat-rate fee.



PRIVATE SECTOR PRICES

58 private pharmacies, private clinics and private hospitals were surveyed. Out of the 45 medicines surveyed, innovator brand products were found for 34 of them in the private sector.

In the private sector, patient prices for the lowest priced generics were found to be 3.33 times the international reference price. The prices charged to patients for the lowest priced generic medicines ranged from 0.43 times the international reference price for losarten to 20.42 times the international reference price for fluconazole.

For innovator brands, patient prices were found to be 17.75 times the international reference price. The prices charged to patients for the innovator brand medicines ranged from 1.85 times the international reference price for losarten to 140.07 times the international reference price for ciprofloxacin.

Number of times more expensive: private sector patient prices for medicines compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	34	41
Median MPR	17.75	3.33
25 th percentile	10.01	1.78
75 th percentile	57.49	5.08

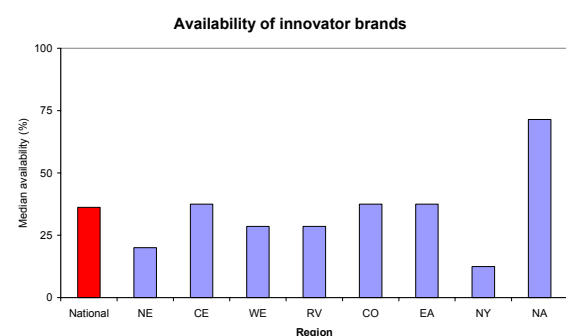
n= 58 facilities; 45 medicines

Availability in the private sector	Innovator brand	Lowest priced generic
Median availability	36.2%	72.4%
25 th percentile	6.9%	51.7%
75 th percentile	58.6%	84.5%

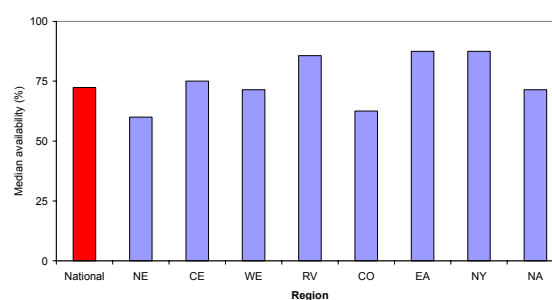
n= 58 facilities; 45 medicines

In the private sector, the median availability of those medicines on the Kenya Essential Drugs List was found to be 81.9% (n=58 facilities).

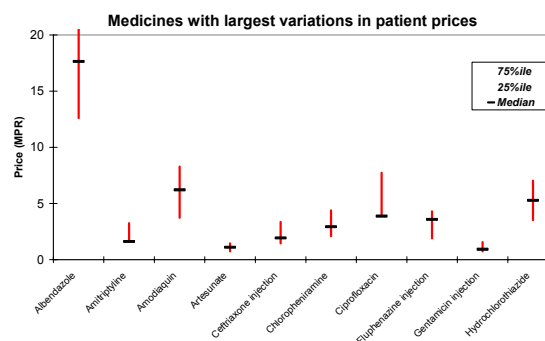
The availability of innovator brands and generics varied widely between the regions⁷



Availability of the lowest priced generic

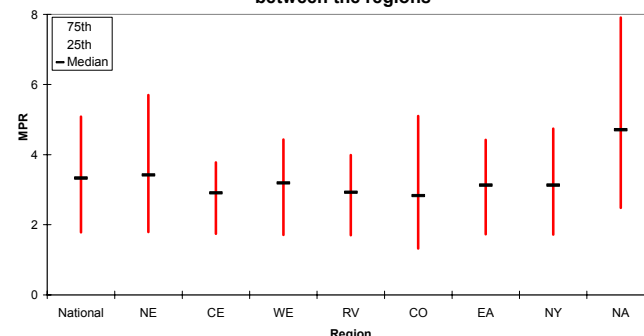


In the private sector, the prices patients are charged for medicines varied from facility to facility. In some cases, the prices varied by many multiples. The lowest priced generics medicines with the greatest variation in price are shown below.

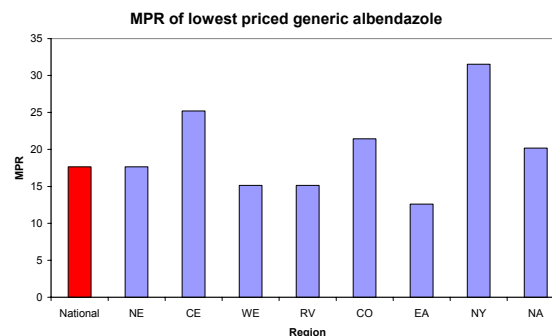


Price of innovator and generic medicines, in general, vary within a region and between regions, the level of variation also varied between regions; the following chart shows the medians and variation in price of the medians across the 8 regions of Kenya. The median MPR being 60% higher in Nairobi than in Central, Coast and Rift Valley Provinces.

Variation in MPR for lowest priced generic between the regions



The prices of individual medicines vary between regions. Below is the example of generic albendazole



The following table shows those generic medicines for which patients in the private sector are charged at least five times the published international prices for the lowest priced generic and innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

⁷ Coding on regional variation charts: Nairobi Province (NA); Coast Province (CO); Eastern Province (EA); North Eastern Province (NE); Central Province (CE); Rift Valley Province (RV); Nyanza Province (NY); Western Province (WE)

Number of times more expensive: private sector patient prices for medicines compared to international reference prices		
Medicine	Lowest priced generic (MPR)	Innovator brand (MPR)
aciclovir	5.08	27.36
albendazole	17.65	98.84
amodiaquine	6.21	31.07
atenolol	7.94	67.48
captopril	5.59	13.52
diclofenac	9.65	57.90
fluconazole	20.42	75.05
glibenclamide	12.00	60.02
nifedipine retard	5.70	28.48

When comparing the price differential between innovator brand medicines and lowest priced generic medicines (for matched pairs of medicines where only the same medicines found in both groups are compared), innovator brands were found to be 5.09 times more expensive than the lowest priced generic (n=33 medicines).

The table below shows the differential between the prices patients are charged in the private sector for the innovator brand and the lowest priced generic equivalent for the ten medicines with the greatest differences. It can be seen that some of the innovator brands were widely available and hence likely to have a noteworthy market-share, despite having a high brand premium to the price; e.g. 43% of the private sector outlets stocked innovator brand furosemide despite it being 50 times (5000%) more expensive than the lowest priced generic

Patient prices and availability in the private sector for innovator brands compared to lowest priced generic equivalents			
Number of times more expensive innovator brand: lowest priced generic		Availability	
		Innovator brand	Generic
amitriptyline	8	22.4%	72.4%
atenolol	8.5	36.2%	60.3%
ciprofloxacin	36.2	48.3%	87.9%
clotrimazole cream	14	39.7%	98.3%
diazepam	16	31.0%	82.8%
doxycycline	20	12.1%	96.6%
furosemide	50	43.1%	93.1%
omeprazole	7.5	55.2%	79.3%
phenytoin	10	39.7%	67.2%
tinidazole	30	51.7%	86.2%

n= 58 facilities

NON-GOVERNMENTAL SECTOR PROCUREMENT PRICES

NGO sector procurement prices for the lowest priced generic medicines were found to be 0.74 times international reference prices. In other words, NGO procurement prices are 26% less than the published international market prices of non-profit generic medicine suppliers.

Number of times more expensive: NGO procurement prices compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included in analysis	3	33
Median MPR	2.92	0.74
25 th percentile	1.94	0.48
75 th percentile	3.16	1.11

n= 45 medicines

Of the 45 medicines surveyed, nine medicines were procured at less than half the international reference price and five products were procured for more than 50% above the international reference price; three innovator brand products were procured: ceftriaxone, nevirapine and zidovudine. The prices of the nine products are summarized below.

Number of times more expensive: NGO procurement prices compared to international reference prices (lowest priced generics unless otherwise specified)	
aciclovir	1.99
ceftriaxone (innovator brand)	3.41
ceftriaxone	2.88
glibenclamide	2.04
nevirapine (innovator brand)	2.92
ranitidine	3.12
tetracycline eye ointment	2.29
zidovudine (innovator brand)	0.97

NON-GOVERNMENTAL SECTOR PATIENT PRICES

In the non-governmental sector, the price charged to patients for lowest priced generics was found to be 2.73 times the international reference price. Patient prices ranged from 0.37 times the international reference price for losartan to 14.84 times the international reference price for fluoxetine.

In this sector, the price charged to patients for innovator brands was found to be 8.52 times the international reference price. Patient prices ranged from 0.93 times the international reference price for indinavir to 100.86 times the international reference price for albendazole.

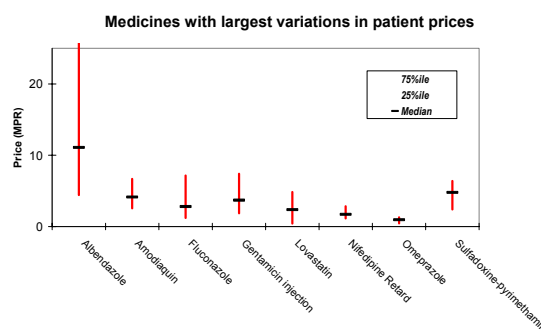
Number of times more expensive: patient prices for medicines at non-governmental facilities compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	17	42
Median MPR	8.52	2.73
25 th percentile	4.03	1.71
75 th percentile	17.30	3.83

n= 43 facilities⁸; 45 medicines

Availability at non-governmental facilities	Innovator brand	Lowest priced generic
Median availability	6.8	45.5
25 th percentile	4.5	20.5
75 th percentile	11.4	86.4

n= 44 facilities; 45 medicines

In NGO facilities, the median availability of those medicines on the Kenya Essential Drugs List was found to be 61.4% (n=44 facilities), whereas the prices patients are charged for medicines varied from facility to facility for some medicines. Those lowest priced generics with the greatest variation in price are shown below.



The following table shows those medicines for which patients at NGO facilities are charged at least 5 times the published international prices for the lowest priced generic and/or innovator brand. A difference of 5 times or more between the international reference price and the price charged to patients in the public sector makes these medicines seem particularly expensive than what could be available or achieved.

Number of times more expensive: NGO sector patient prices compared to international reference prices	
Medicine	Lowest priced generic (MPR)
albendazole	11.09
atenolol	6.62
captopril	5.64
chlorpheniramine	8.79
diclofenac	7.94
fluoxetine	14.84
glibenclamide	9.00

⁸ Not all facilities are included in this analysis as some facilities provided medicines free of charge or provided medicines for a flat-rate fee

INTER-SECTORAL COMPARISONS

The table below compares the prices of lowest priced generics between sectors where the same medicines were found in both sectors.

For lowest priced generics:	Were this many times more expensive:	Than:
Public sector patient prices (n=22 medicines)	2.88	Public sector procurement prices
NGO sector patient prices (n= 33 medicines)	3.58	NGO sector procurement prices
NGO sector procurement prices (n= 22 medicines)	1.21	Public sector procurement prices
Private sector patient prices (n=28 medicines)	1.48	Public sector patient prices
Private sector patient prices (n=25 medicines)	1.19	NGO sector patient prices
NGO sector patient prices (n=28 medicines)	1.24	Public sector patient prices

For innovator brands, the private sector patient prices was almost the same (1.03 times) as the NGO sector (n=14 medicines).

While NGO sector procurement prices were 21% more than for public sector procurement prices for lowest priced generics, the NGO sector procurement price of some medicines was up to 10 times the public sector procurement price, whereas for some of the medicines, the prices achieved were lower.

Number of times more expensive: NGO sector procurement prices compared to public sector procurement prices (lowest priced generic)	
carbamazepine	2.8
ceftriaxone injection	9.9
fluphenazine injection	2.0
furosemide	2.5
nifedipine retard	0.15 (NGO price was less)
omeprazole	0.3 (NGO price was less)
quinine injection	0.6 (NGO price was less)
ranitidine	4.9
sulphadoxine-pyrimethamine	2.4

While public sector patient prices for lowest priced generics were almost three times the public sector procurement prices, the public sector patient price of some medicines was as much as 42 times the public procurement price; this may relate to items being sourced from the private sector instead of public sector procurement sources.

Number of times more expensive: patient prices at public sector facilities compared to public sector procurement prices (lowest priced generic)	
amitriptyline	6.0
ceftriaxone injection	7.7
chlorpheniramine	41.7
diazepam	18.5
doxycycline	6.5
furosemide	10.4
gentamicin injection	6.1
ibuprofen	4.7
metronidazole	5.9

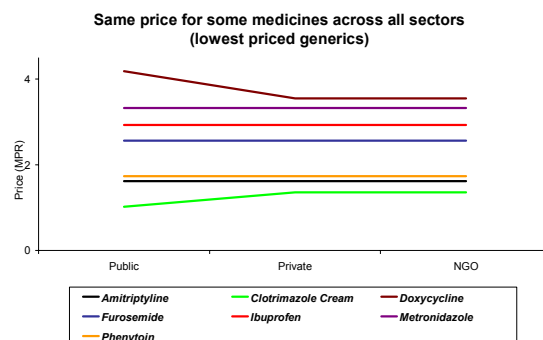
Though patient prices in the private sector were generally 48% higher than those in the public sector, some medicines were up to eight times more expensive. However 10 medicines were the same or lower in the private sector. The similarity of medicine prices between the sectors is presented later.

Number of times more expensive: private sector patient prices compared to public sector facilities (lowest priced generic)	
amoxicillin+ clavulanic acid	7.9
carbamazepine	3.0
glibenclamide	3.4
ranitidine	3.0

Though patient prices in the private sector were generally 19% higher than those in the NGO sector, some medicines were up to six times more expensive; however 19 medicines were the same or lower in the private sector. The similarity of medicine prices between the sectors is presented later.

Number of times more expensive: patient prices in the private sector compared to NGO facilities (lowest priced generic)	
Fluconazole	7.3
Lovastatin	2.1
Nifedipine Retard	3.3

The patient prices of some medicines in the public sector were exactly the same or almost the same in all sectors; the chart below illustrates this for 7 medicines.



Medicines need to be affordable, but also available - however low the price list may be, it is not helpful unless the medicine is on the shelf. Some medicines were not widely available in either public or private sectors while others were more widely available in the private sector. In some cases, this increased availability was accompanied by a small or no difference in patient prices whereas in other cases the prices charged to patients in the private sector were much higher – up to 2.5 times the price for omeprazole. The following table presents availability in the public and private sectors, and the percentage difference in patient prices at public facilities versus the private sector for lowest priced generics.

Lowest priced generic	% Availability		Number of times more expensive: patient prices in the private sector compared to public facilities
	Public sector facilities (n=53)	Private sector (n=58)	
albendazole	20.8%	84.5%	1.4
atenolol	7.5%	60.3%	
ciprofloxacin	9.4%	87.9%	1.3
diclofenac	3.8%	36.2%	
omeprazole	9.4%	79.3%	2.4

Medicines from the Kenya Essential Drugs List were widely found in all sectors.

Availability of medicines on the Kenya Essential Drugs List	
Sector	Median % availability
Public sector (n= 29 facilities)	65%
Private sector (n= 58 facilities)	81.9%
NGO sector (n= 44 facilities)	61.4%

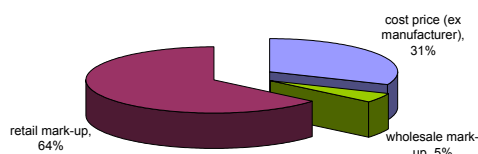
Some medicines, across all sectors are apparently at elevated prices, and than they could be when compared to the international reference price e.g. albendazole, atenolol, captopril, chlorpheniramine, diclofenac, and glibenclamide.

Three antiretroviral medicines were included in the survey; only nevirapine was widely found at 58.5% of public facilities and 50% of NGO facilities; it was only found at 1 of the 58 private outlets surveyed.

PRICE COMPONENTS

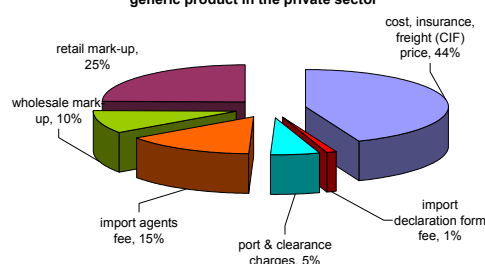
Examining the components that make up the price of medicines is an important step in determining how to reduce their cost. The final price paid for a medicine whether by the government or a patient reflects the manufacturers selling price plus all the intervening price additions. These additions include the cost of importing, distributing and dispensing the medicine. In the private sector, for a locally produced product in Kenya, the manufacturer's selling price represents around 31% of the final patient price and the wholesaler and retailer mark-ups account for 5% and 64% of the patient price respectively.

Typical proportions of add-ons of final patient price for an locally produced generic product in the private sector



For an imported generic medicine, the cost price in the private sector represents 44% of the final price with wholesale and retail mark-ups accounting for 10% and 25% respectively; the importer mark-up is 15% and port & clearance costs and import declaration fees are 5% and 1% respectively.

Typical proportions of add-ons of final patient price for an generic product in the private sector



RECOMMENDATIONS FROM COUNTRY REPORT AND STAKEHOLDER MEETING

A summary of the recommendations from the full survey report and stakeholder meeting report is provided below; a fuller explanation can be found in these two reports.

- Develop and implement a medicines pricing policy to achieve a greater level of transparency, uniformity and predictability in the pricing of medicines including the consideration of reference pricing for medicines in the private sector
- Periodically monitor the prices of medicines, as well as aspects of access to monitor the effects of interventions
- Empower consumers by disseminating price information in a meaningful way
- Develop and implement pro-poor interventions aimed at increasing access to essential medicines.
- Promote prescribing and use of medicines by generic name in all sectors by mandating generic prescribing and substitution
- Promote the use of generics to health providers and the public including measures to reassure on the quality of generics
- Enhance the efficiency of the public procurement agency and establish supportive linkages with the mission sector procurement system
- To increase availability improve the estimation of needs and management medicines in public health facilities including moving away from the “push” system - so as to reduce wastage, expiry and theft
- Develop a pricing policy for public sector patient prices of medicines
- Investigate the causes of regional variation

ANALYSIS

Below is a further analysis of the findings presented in this paper.

AFFORDABILITY AND ACCESS TO MEDICINES

“Out-of-pocket” purchase of most medicines is not affordable to the majority of the population.

Consideration of price in the choice of medicines could determine whether a patient can obtain a medicine for treatment, or not.

Some medicines, in all sectors seem to be at higher prices than they could be when compared to the international reference price.

There was marked price variation for some medicines within the public, private and NGO sectors - some patients are paying much more than they would be in other facilities or pharmacies.

Some key medicines were not widely available in the public sector.

Some medicines were sold at the same prices in all sectors, despite often been procured at much lower prices in the public and NGO sectors.

The impact of implementing the new malaria policy needs measures to be taken to ensure continued affordable access to effective medicines especially in the private and NGO sectors

PUBLIC SECTOR

Where patients pay for medicines, the prices were 20% lower in the public sector than in the NGO sector and 30% lower than in the private sectors respectively.

Patient prices were almost 3 times the public sector procurement price, although some medicines, including key essential medicines had much greater differentials

The patient prices of some medicines in the public sector were almost the same as in the private and NGO sectors; this was despite the public sector procurement price being low for some medicines.

The public sector procurement system is paying more than might be necessary for a small proportion of medicines.

PRIVATE SECTOR

Private sector patient prices were 48% higher than public sector patient prices and 19% higher than NGO sector patient prices.

Innovator brands were on average 5 times the price of the lowest priced generics; some branded medicines were widely available and hence were likely to have noteworthy market share despite having very high brand premiums.

The availability of innovator and generic brands varied between regions, with more innovator brands and fewer generics found in Nairobi; Nyanza Province had the reverse – the highest availability of generics and lowest availability of brands.

NGO SECTOR

Prices in NGO facilities were greater than in the public sector; prices being closer to those of the private sector; availability in the NGO sector was generally greater than in the public sector.

A significant proportion of innovator brands were stocked by some NGO facilities with very high brand premiums when compared to the lowest priced generic medicines stocked in other NGO facilities, and even stocked by the same NGO facility.

Some medicines procured by the NGO sector were much higher than the corresponding procurement price obtained by the public sector.

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Advisory Group: Prof I Kibwage, Dean Faculty of Pharmacy, University of Nairobi & Chairman, Pharmaceutical Society of Kenya; Prof W Lore, Chairman, Kenya Association of Physicians & National Coordinator, INRUD-Kenya; Mr A Mwenda, Chief Executive Officer, Institute of Economic Affairs; Dr. J Masiga; Head of Operations, Mission for Essential Drugs and Supplies (MEDS); Mr S Ochieng; Chief Executive Officer, Consumer Information Network; Ms C Cepuch; Health Action International – Africa; Dr F Siyoi, Chief Pharmacist, MoH & Registrar, Pharmacy and Poisons Board; Dr R Mbindyo, WHO-Kenya.

Survey Manager: Mr J Ombogo; Secretary, INRUD Kenya & General Manager, Sustainable Healthcare Foundation & Member, Pharmacy and Poisons Board

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LES PRIX DES MEDICAMENTS AU MALI

MESURER LES PRIX DES MEDICAMENTS

Un tiers de la population mondiale ne dispose pas d'un accès régulier aux médicaments dont elle a besoin et les patients des pays en développement paient le plus souvent eux-mêmes leurs médicaments, faute de systèmes d'assurance maladie. Les prix élevés des médicaments représentent une barrière importante à leur utilisation et à l'amélioration de l'état de santé des populations.

En Mars et Avril 2004, l'Union Technique de la Mutualité Malienne (UTM) en partenariat avec la Direction de la Pharmacie et du Médicament (DPM) du Ministère de la Santé du Mali et avec l'appui de l'Organisation Mondiale de la Santé (OMS), a réalisé une étude nationale sur les prix des médicaments dans les secteurs public, communautaire et privé. A l'aide de la méthodologie développée par l'OMS et Health Action International (HAI): "Les prix des médicaments : une nouvelle approche pour les mesurer", l'équipe de l'étude a évalué l'accessibilité financière de plusieurs traitements médicamenteux, analysé les prix et la disponibilité d'une sélection de médicaments et identifié les composantes des prix (taxes, marges bénéficiaires, etc.) des médicaments. Les résultats ont été utilisés pour déterminer les facteurs contribuant aux prix élevés des médicaments et des variations observées dans le pays, et identifier des stratégies et politiques pour permettre d'améliorer leur accessibilité. Ce document sur le Mali fait partie d'une série de résumés qui présentent les résultats des enquêtes sur les prix des médicaments effectuées par différents pays à travers l'Afrique et ailleurs dans le monde.

CONTEXTE – MALI

Le Mali est un vaste pays continental de l'Afrique de l'Ouest situé en zone soudano-sahélienne et saharienne de 1.241.238 km². Il comprend 8 régions administratives et un district. Les régions se divisent en cercles et communes rurales, tandis que le district de Bamako se divise en communes urbaines et en quartiers. Au sein de ces entités se trouvent des centres de santé de référence et des centres de santé communautaires. Certaines de ces régions sont d'accès difficile du fait du contexte géographique, du climat et des infrastructures routières.

Le secteur pharmaceutique du Mali a essentiellement trois types d'acteurs : le privé, le public et le communautaire (privé non lucratif) ; le rôle du secteur confessionnel reste limité.

Le secteur public et le secteur communautaire assurent la mission de service public de santé et les prix des produits pharmaceutiques y sont déterminés par décret présidentiel, tandis que le secteur privé bénéficie de la liberté des prix.

L'accès aux soins y compris aux médicaments reste très limité. En effet, au Mali l'indice d'utilisation des services de santé est de 0,21 contact par personne et par an. Une des raisons principales pour la sous-utilisation des services est l'absence d'un véritable régime d'assurance maladie.

MEDICAMENTS, ZONES ET SECTEURS ETUDIES

La méthodologie OMS/HAI propose un panier de 30 médicaments / substances avec une forme pharmaceutique, un dosage et un conditionnement par médicament. Ce panier a été revu selon le contexte du Mali et seuls 8 médicaments ont été retenus ; les autres produits peu ou pas utilisés au Mali, ont été retirés de la liste.

Une liste de 29 médicaments complémentaires a ramené le nombre total à 37 médicaments étudiés.

Conformément à la méthodologie d'étude, la capitale et trois régions tirées au sort ont été sélectionnées pour l'enquête – Bamako, Kayes, Sikasso et Gao. Les secteurs principaux – public, privé et communautaire – ont été représentés dans l'enquête avec respectivement 21, 20 et 23 sites.

Variables mesurées dans chaque secteur	Secteur public	Secteur privé	Secteur communautaire
Accessibilité financière/patients	✓	✓	✓
Prix d'achat	✓		
Prix payés par les patients	✓	✓	✓

Disponibilité/patients	✓	✓	✓
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PRESENTATION DES INFORMATIONS SUR LES PRIX

La méthodologie d'enquête de l'OMS/HAI présente les prix en tant que ratios des prix médians (RPM). Le RPM est le ratio entre le prix local et un prix international de référence converti dans la même devise. Les prix de référence servent de norme externe pour évaluer des prix locaux. Un RPM de 1 signifie que le prix local est équivalent au prix de référence tandis qu'un RPM de 2 indique que le prix local est deux fois supérieur au prix de référence. Les prix de référence internationaux utilisés pour cette étude proviennent de l'édition 2003 de l'Indicateur des Prix Internationaux des Médicaments publié par *Management Sciences for Health* (MSH) (<http://erc.msh.org/>). L'indicateur des prix de MSH rassemble les prix des médicaments génériques proposés par un ou plusieurs grossistes à but non lucratif internationaux aux centrales d'achats publiques ou privées à but non lucratif et reflète ainsi les prix que les Etats pourraient envisager de payer pour les médicaments. Il est logique que les prix payés par les patients soient plus élevés que ceux payés par les Etats, mais les rajouts faits sur les prix de base devraient être raisonnables et uniformes pour tous les médicaments et dans tous le pays.

INTERPRETATION DES RESULTATS

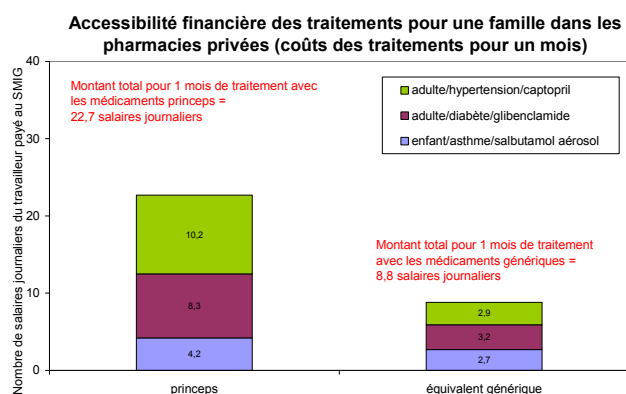
Lorsque l'enquête révèle des prix élevés ou une faible disponibilité de quelques médicaments, ils sont cités dans cette présentation. Cependant, il est peu probable qu'il agisse de cas isolés. Sachant que le nombre total de médicaments inclus dans cette enquête est 37, le fait de trouver des prix élevés ou une faible disponibilité même pour 3 ou 4 médicaments - ou 8% à 11% de ceux étudiés - pourrait indiquer un problème plus global et requiert une recherche plus approfondie.

ACCESSIBILITE FINANCIERE

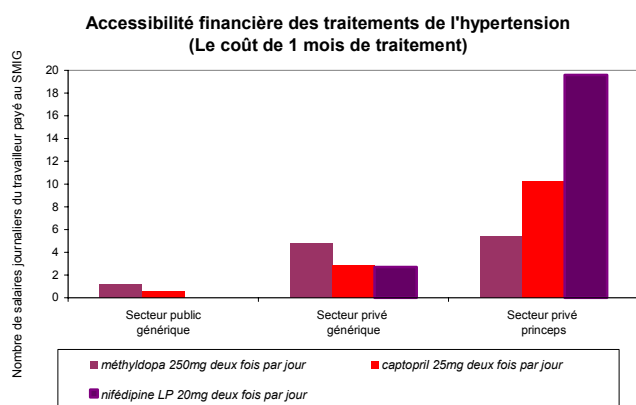
Suivant la méthodologie d'enquête utilisée, l'accessibilité financière est calculée par rapport au salaire journalier nécessaire à un employé non qualifié du secteur public pour payer le traitement d'une affection aiguë ou un mois de traitement pour une maladie chronique. Au moment de l'étude le salaire minimum d'un employé non qualifié du secteur public au Mali était de 825 FCFA par jour.

D'une façon générale, l'achat des traitements pour les affections chroniques requiert beaucoup plus de jours de salaire journalier que l'achat des traitements pour les affections aiguës.

La charge financière est particulièrement lourde pour une famille qui se retrouve dans le besoin d'acheter le traitement de plusieurs affections en même temps. Par exemple, en s'adressant au secteur privé, suite à l'indisponibilité des médicaments dans le secteur public, l'employé non qualifié du secteur public payé au salaire minimum (SMIG) devrait dépenser l'équivalent de 22,7 jours de travail pour acheter un aérosol de salbutamol pour un enfant asthmatique, des comprimés de glibenclamide pour un mois de traitement d'un adulte diabétique et des comprimés de captopril pour un mois de traitement d'un adulte souffrant d'hypertension, si les médicaments princeps lui avaient été proposés ou 8,8 salaires journaliers en achetant les équivalents génériques. Dans le secteur public aucune formation sanitaire (FS) parmi les 21 visitées n'avait les trois médicaments à la fois ; aucune des FS n'avait de salbutamol aérosol, 4,8% (c.-à-d. une FS) disposait de glibenclamide et 9,5% (c.-à-d. deux FS) de captopril.



L'enquête a également trouvé des différences significatives dans l'accessibilité financière de médicaments appartenant à la même catégorie thérapeutique. Le graphique ci-dessous illustre ces différences pour les médicaments utilisés dans le traitement de l'hypertension. Bien qu'une option thérapeutique puisse avoir des avantages cliniques sur une autre, certains patients ne pourront pas en bénéficier puisque le traitement indiqué pourrait leurs être inabordable, d'autant plus lorsque le médicament n'est pas disponible dans le secteur public.



L'accès aux médicaments dépend en grande partie de leur prix. Cette étude a permis de mesurer les prix d'achat dans le secteur public, ainsi que les prix payés par les patients dans les trois secteurs – public, privé et communautaire.

LES PRIX D'ACHAT DU SECTEUR PUBLIC

Dans le secteur public les prix d'achat des médicaments génériques sont inférieurs aux prix de référence international (RPM=0,88). Autrement dit, les prix d'achat, obtenu par la Pharmacie Populaire du Mali (PPM) par appel d'offres en 2003, est meilleur que le prix de référence international (MSH).

Nombre de fois que le prix d'achat public est supérieur au prix de référence international		
Prix (RPM)	Médicament princeps	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	0	33
RPM médian		0,88
Quartile 25%		0,76
Quartile 75%		0,97

n=22 médicaments

Ce rapport reste relativement stable pour tous les médicaments étudiés, le prix le plus bas par rapport au prix de référence international a un RPM de 0,37 (ceftriaxone injection) est le plus élevé de 1,45 (soluté glucosé).

Parmi les 37 médicaments étudiés, 4 (dont 3 destinés au traitement de maladies chroniques) n'étaient pas disponibles dans la centrale d'achat PPM.

LES PRIX DU SECTEUR PUBLIC

Les prix payés par les patients dans les formations sanitaires publiques sont 1,83 fois supérieurs aux prix de référence international. Certains médicaments sont vendus aux patients à un

prix particulièrement élevé : ciprofloxacine comprimé. - 13,33 fois supérieur au prix de référence international (d'ailleurs il n'était pas disponible à la centrale d'achat au moment de l'enquête), amoxicilline suspension - 3,23, diclofénac comprimé. - 2,77.

Nombre de fois que les prix payés par les patients dans les formations sanitaires publiques sont supérieurs aux prix de références internationaux	
Prix (RPM)	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	30
RPM médian	1,83
Quartile 25%	1,58
Quartile 75%	2,08

n=21 formations sanitaires publiques; 37 médicaments

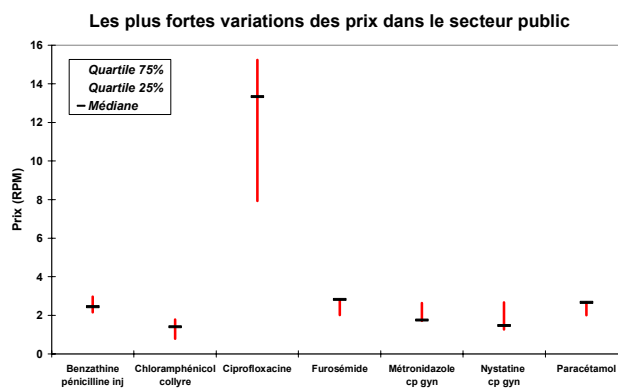
Disponibilité des médicaments dans le secteur public	Médicament princeps	Générique le moins cher
Disponibilité médiane	0%	81,0%
Quartile 25%	0%	33,3%
Quartile 75%	0%	90,5%

n=21 formations sanitaires publiques; 37 médicaments

Le secteur public ne fournit que des médicaments génériques, aucun médicament princeps n'a été trouvé dans ce secteur.

La disponibilité globale des médicaments n'est pas satisfaisante. L'insuffisance de médicaments pour les maladies chroniques est frappante. Les malades atteints de pathologies chroniques doivent en général renouveler leur ordonnance pour la durée de leur à vie, trouvent difficilement les médicaments dont ils ont besoin et lorsqu'ils sont disponibles ces médicaments sont très chers. Parmi les 37 médicaments étudiés, 7 (dont 6 destinés au traitement de maladies chroniques) étaient disponibles dans moins de trois formations sanitaires.

Le prix payé par les patients d'une formation sanitaire publique à l'autre est variable. Ceci est en contradiction avec le décret fixant les marges sur les médicaments dans les secteurs public et communautaire. Dans certains cas, le prix d'achat du même médicament peut être plusieurs fois supérieur d'un fournisseur à l'autre. Les prix des médicaments subissant les plus fortes variations sont présentés ci-dessous :



LES PRIX DU SECTEUR PRIVE

Les prix des médicaments princeps sont 18,14 fois supérieurs au prix de référence international, avec des extrêmes de 3,49 fois pour salbutamol aérosol et 106,35 pour mébendazole comprimés.

Les prix des génériques dépassent plus de 5 fois le prix de référence international, avec des maxima atteignant 35 fois la référence, mais également largement au-dessus des prix des médicaments génériques du secteur public (291% des prix des mêmes produits).

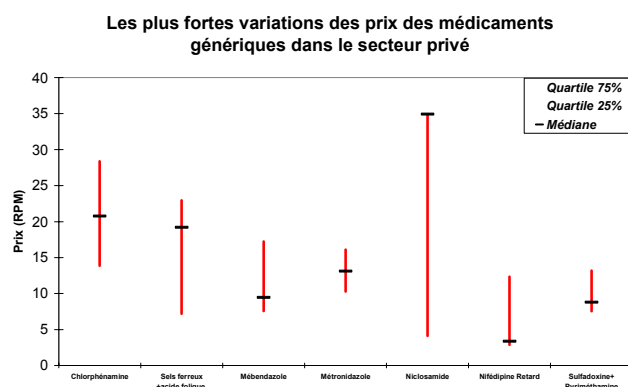
Nombre de fois que les prix payés par les patients dans le secteur privé sont supérieurs aux prix de références internationaux		
Prix (RPM)	Médicament princeps	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	26	35
RPM médian	18,14	5,38
Quartile 25%	6,65	3,61
Quartile 75%	29,99	9,96

n=20 points de vente privés ; 37 médicaments

Disponibilité des médicaments dans le secteur privé	Médicament princeps	Générique le moins cher
Disponibilité médiane	55,0%	70,0%
Quartile 25%	5,0%	40,0%
Quartile 75%	65,0%	90,0%

n=20 points de vente privés ; 37 médicaments

Peu disponibles et vendus à des prix élevés, les médicaments génériques du secteur privé présentent aussi l'inconvénient pour les patients d'être proposés à des prix différents d'un point de vente à l'autre. Le graphique ci-dessous montre les plus fortes variations des prix des médicaments génériques dans le secteur privé.



Le tableau suivant montre les prix les plus élevés des médicaments génériques trouvés dans le secteur privé. Les prix des princeps correspondants sont indiqués pour comparaison. Plus d'un quart des prix des équivalents génériques vendus dans le secteur privé au Mali sont supérieurs de plus de dix fois aux prix de référence internationale. Lorsque les princeps respectifs sont disponibles ils sont parmi les produits ayant les plus grands écarts avec le prix de référence internationale. Cette différence est de plus de 10 fois pour les génériques et de plus de 50 fois pour les princeps, comparés au prix de référence internationale. Ces produits sont considérés comme très chers pour les patients au Mali.

Nombre de fois que les prix payés par les patients dans le secteur privé sont supérieurs aux prix de références internationaux		
Médicament	Générique le moins cher (RPM)	Médicament princeps (RPM)
Paracétamol	10,02	64,11
Diclofénaç 50	12,06	64,99
Métroindazole	13,09	62,85
Aminophylline	14,98	-
Ciprofloxacine	15,54	-
Sels ferreux e	19,20	-
Chlorphénamine	20,76	-
Glibenclamide	21,03	53,77
Niclosamide	34,92	-

LES PRIX DU SECTEUR COMMUNAUTAIRE

On constate des prix médians légèrement élevés, mais surtout un intervalle interquartile assez étendu, dans un secteur où le prix est réglementé. Une analyse plus approfondie met en évidence que certains centres de santé communautaires n'appliquent pas le coefficient multiplicateur, donc ne respectent pas la convention signée avec l'Etat

Les prix payés par les patients varient entre 0,80 fois le prix de référence internationale pour chloramphénicol collyre et 11,58 pour les comprimés de ciprofloxacine.

Aucun médicament princeps n'a été trouvé dans ce secteur.

Nombre de fois que les prix payés par les patients dans le secteur communautaire sont supérieurs aux prix de références internationaux		
Prix (RPM)	Médicament princeps	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	0	29
RPM médian		2,25
Quartile 25%		1,92
Quartile 75%		2,62

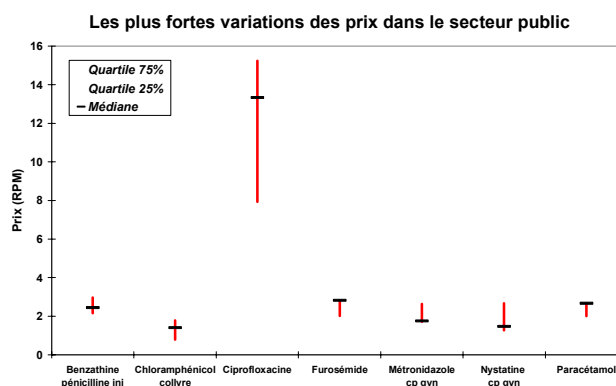
n=23 formations sanitaires communautaires; 37 médicaments

Disponibilité dans les formations sanitaires communautaires	Médicament princeps	Générique le moins cher
Disponibilité médiane	0%	69,6%
Quartile 25%	0%	26,1%
Quartile 75%	0%	87,0%

n=23 formations sanitaires communautaires; 37 médicaments

La disponibilité des médicaments essentiels n'est pas satisfaisante dans ce secteur. Les régions les plus éloignées souffrent d'un problème d'approvisionnement par la centrale d'achat.

Comme il a été déjà constaté, les prix payés par les patients pour certains médicaments variaient d'une formation sanitaire communautaire à une autre. Les plus fortes variations des prix dans le secteur communautaire sont présentées ci-dessous.



COMPARAISONS ENTRE SECTEURS

Les prix payés par les patients dans le secteur public étaient 2 fois supérieurs aux prix d'achat dans le même secteur.

Les prix payés par les patients dans le secteur privé étaient 3 fois supérieurs aux prix payés par les patients dans le secteur public.

Les prix payés par les patients dans le secteur communautaire étaient inférieurs aux prix du secteur privé (0,42) et légèrement supérieurs aux prix du secteur public (1,23).

Le tableau ci-dessous compare les prix des génériques les moins chers lorsque les mêmes médicaments étaient trouvés dans les deux secteurs comparés.

Les génériques les moins chers :	Nombre de fois plus élevés:	Que:
Prix payés par les patients dans le secteur public (n=29 médicaments)	2,10	Prix d'achat du secteur public
Prix payés par les patients dans le secteur privé (n=30 médicaments)	2,91	Prix payés par les patients dans le secteur public
Prix payés par les patients dans le secteur communautaire (n=29 médicaments)	0,42	Prix payés par les patients dans le secteur privé
Prix payés par les patients dans le secteur communautaire (n=29 médicaments)	1,23	Prix payés par les patients dans le secteur public

Bien que les prix payés par les patients dans le secteur public pour le médicament générique le moins cher étaient environ 2 fois supérieurs aux prix d'achat dans ce secteur, ce ratio n'était pas constant pour tous les médicaments, atteignant parfois pour certains médicaments plus de 4 fois le prix d'achat.

Nombre de fois que les prix payés par les patients dans le secteur public sont supérieurs aux prix d'achat du secteur public (générique le moins cher)	
Paracétamol	2,66
Ibuprofen	2,86
Benzathine pénicilline inj	3,25
Furosémide	3,32
Amoxicilline suspension	3,33
Ceftriaxone injection	3,45
Diclofénac 50	4,64

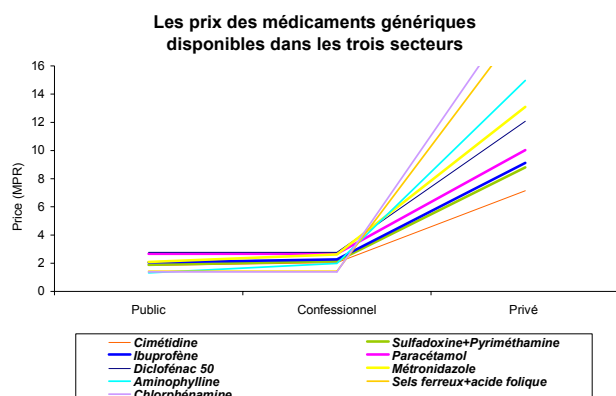
La moitié des médicaments génériques trouvés dans le secteur privé coûtent plus de trois fois plus que dans le secteur public et parfois jusqu'à 15 fois plus.

Nombre de fois que les prix payés par les patients dans le secteur privé sont supérieurs aux prix payés par les patients dans le secteur public (générique le moins cher)	
Mé bendazole	5,00
Métronidazole cp gyn	5,06
Métronidazole cp	6,25
Aminophylline	11,33
Sels ferreux+acide folique	13,38
Chlorphénamine	15,00

Certains produits sont moins chers dans le secteur communautaire que dans le secteur public, mais d'autres peuvent être également plus chers dans ce secteur.

Nombre de fois que les prix payés par les patients dans le secteur communautaire sont supérieurs aux prix payés par les patients dans le secteur public (générique le moins cher)	
Chloramphénicol collyre	0,57
Furosémide	0,86
Ciprofloxacine	0,87
Sels ferreux+acide folique	1,00
Buthylhyoscine Bromure	1,00
Paracétamol	1,00
Aminophylline	1,50
Métronidazole cp gyn	1,57
Cotrimoxazole suspension	1,76

La comparaison des prix des médicaments génériques dans les trois secteurs confirme que même s'ils sont présent dans le secteur privé les génériques y sont vendus à un prix qui dépasse de plusieurs fois celui des génériques des deux autres secteurs.



Les patients ont besoin de médicaments non seulement accessibles financièrement mais aussi disponibles. La disponibilité des médicaments génériques n'était pas très satisfaisante dans les trois secteurs. Ceci oblige de nombreux patients de se procurer les médicaments princeps dans le secteur privé à un prix très élevé. Le tableau suivant présente les produits peu disponibles dans le secteur public, le pourcentage de sites où ils étaient disponibles, ainsi que la

disponibilité des mêmes médicaments dans le secteur privé et la différence des prix auxquels ils sont vendus dans les deux secteurs.

Générique le moins cher	% Disponibilité		Nombre de fois génériques du secteur privé plus chers qu'au secteur public
	Formations sanitaires publiques (n=21)	Points de vente de médicaments privés (n=20)	
Ceftriaxone injection	19,0%	30,0%	3,60
Chloramphénicol collyre	23,8%	40,0%	1,26
Praziquantel	33,3%	65,0%	3,20
Aminophylline	52,4%	40,0%	11,33
Chlorphénamine	52,4%	30,0%	15,00
Métronidazole cp gyn	57,1%	40,0%	5,06
Ciprofloxacine	61,9%	85,0%	1,17
Sulfadoxine+Pyriméthamine	61,9%	85,0%	4,67

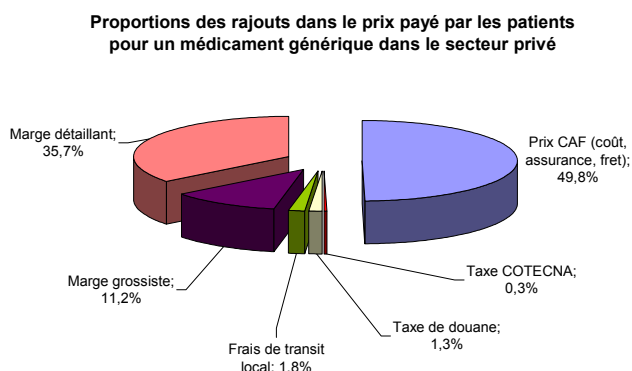
Une autre catégorie de produits dont la disponibilité était très faible dans le secteur public et la disponibilité des équivalents génériques assez médiocre dans le secteur privé, suscite encore plus d'inquiétudes.

Nom du médicament	Disponib. générique secteur public	Disponib. générique secteur privé	Prix générique secteur public (RPM)	Prix princeps secteur privé (RPM)
Nifédipine Retard	0,0%	45,0%		3,36
Salbutamol inhaler	0,0%	40,0%		2,22
Glibenclamide	4,8%	45,0%		21,03
Captopril	9,5%	60,0%		5,91
Niclosamide	9,5%	65,0%		34,92
Propranolol	9,5%	0,0%		
Phénobarbital	14,3%	0,0%	1,83	
Nifédipine Retard	0,0%	45,0%		3,36

LA STRUCTURE DES PRIX

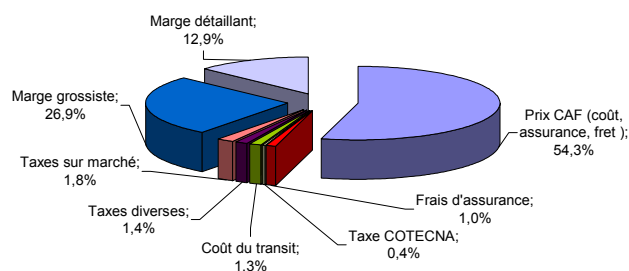
Lorsqu'on détermine comment diminuer les coûts des médicaments, l'analyse des composantes des prix est une étape incontournable. Le prix final payé par les pouvoirs publics ou les patients reflète le prix du fabricant ainsi que tous les rajouts successifs au prix. Ces rajouts comprennent le coût de l'importation, de la distribution et la dispensation des médicaments.

Dans le secteur privé au Mali, normalement le prix CAF (coût, assurance, fret) représente 49,8% du prix payé par les patients et les marges des grossistes et des détaillants respectivement 11,2% et 35,7%; la taxe COTECNA (taxe de vérification des importations), les taxes de douane et les frais de transit représentent ensemble 3,4% du prix final payé par les patients.



La marge cumulée sur le prix d'achat des médicaments dans le secteur public est inférieure à celle du secteur privé. Toutefois, la marge partagée entre grossiste et détaillant représente 40% du prix final.

Proportions des rajouts dans le prix payé par les patients pour un médicament générique dans le secteur public



La structure des prix théorique n'est pas toujours respectée et des écarts considérables entre les marges communiquées par les grossistes et les détaillants ont été constatés sur le terrain.

ANALYSE

Les résultats principaux sont repris et analysés ci-dessous.

ACCES AUX MEDICAMENTS

La disponibilité du médicament dans l'ensemble des secteurs reste une préoccupation constante. Après plus de deux décennies de mise en œuvre d'une politique de médicaments essentiels génériques, on peut s'interroger sur les raisons de la non disponibilité de ces produits.

Concernant l'accessibilité financière : le coût d'un traitement reste élevé par rapport au pouvoir d'achat. Pour les malades souffrant de pathologie chronique, il s'agit d'un drame, non seulement ce type de médicament est peu disponible, mais quand il l'est, le prix est inabordable. Il est urgent d'accélérer la mise en place de système alternatif de financement dont les mutuelles pour soulager la souffrance des populations.

SECTEUR PUBLIC

Le secteur public bénéficie de prix d'achat concurrentiels, mais les prix payés par les patients sont variables.

La comparaison de la variation des prix produit par produit entre formations sanitaires montre que l'application du coefficient multiplicateur n'est pas complètement respectée.

SECTEUR PRIVE

Dans ce secteur, les médicaments sont considérés comme très chers, y compris les génériques. Les mécanismes du marché et la libre concurrence n'apportent pas les résultats attendus, et par conséquent la politique de liberté des prix et son application devraient être revue.

Le médicament générique, même s'il est de plus disponible dans le secteur privé est vendu au prix fort. Les prix des médicaments princeps sont très élevés et incompatibles avec le pouvoir d'achat de la majorité de la population.

SECTEUR COMMUNAUTAIRE

On constate des prix médians légèrement élevés, mais surtout une grande variation des prix dans un secteur où le prix est réglementé et devrait être stable.

La disponibilité des médicaments n'est pas satisfaisante, surtout dans les régions éloignées de la capitale.

CONCLUSION DU RAPPORT PRINCIPAL

L'étude a permis de tirer les enseignements suivants :

- La centrale d'achat a obtenu des prix d'achat intéressants lors de l'appel d'offres 2003. Cependant certaines questions restent en suspens notamment : choix du type de conditionnement en fonction du secteur de vente (blister ou vrac), approvisionnement du secteur privé, procédures d'achat multiples, l'objectif final étant d'améliorer l'accessibilité financière du médicament.

- La disponibilité des Médicaments Essentiels Génériques dans les différents points de vente reste très mitigée,

- Dans les secteurs public et communautaire le décret réglementant la fixation des tarifs est peu ou pas appliqué,

- Dans le secteur privé sur le plan tarifaire l'introduction du générique est un échec, nous proposons, que pour les 10 voir 15 médicaments les plus essentiels, l'Etat fixe des prix de vente uniques au patient quel que soit le secteur.

- Dans le cadre des ensembles sous régionaux et régionaux nous suggérons : aux importateurs le développement de synergies par l'organisation d'appel d'offres conjoints.

L'EQUIPE DE L'ETUDE ET FINANCEMENT

Cette étude a été réalisée par l'Union Technique de la Mutualité Malienne (UTM), (Responsables de l'étude Dr Oumar Ouattara et Dr Rissa Ag Tachrist), avec l'appui de la Direction de la Pharmacie et du Médicament du Ministère de la Santé (Dr Minkaila Maïga, Dr Christian Chorliet, Dr Adama Diawara) et le Dr Simona Chorliet, consultant de l'Organisation Mondiale de la Santé. L'étude a été financée par l'Association Internationale des Mutuelles (AIM), l'Union Européenne et l'Organisation Mondiale de la Santé. Le comité de pilotage était composé par des représentants de l'Union Technique de la Mutualité Malienne (UTM), les Directions suivantes du Ministère de la Santé - DPM, DNS, DNPSSES et la FENASCOM.

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Le rapport complet de l'étude est publié sur le site de HAI : <http://www.haiweb.org/medicineprices/>

MEDICINE PRICES IN TANZANIA

MEASURING MEDICINE PRICES

One-third of the global population lacks reliable access to needed medicines. The high price of medicines is a key factor in their inaccessibility. High prices are particularly burdensome to patients in developing countries where most medicines are paid for out-of-pocket by individual patients.

In September 2004, the Tanzanian Ministry of Health, supported by the World Health Organisation (WHO), carried out a national survey of medicine prices in the public, private and NGO sectors. Using the WHO and Health Action International (HA) methodology: *Medicine Prices: a new approach to measurement*¹, the Ministry assessed the affordability of selected key medicines, analyzed the prices and availability of a selection of important medicines, and identified price components (taxes, mark-ups etc.) of locally produced and imported medicines. The evidence obtained was used to determine factors contributing to high and variable medicine prices and identify strategies and policies to improve their affordability. This is one of a series of papers summarizing the results of medicine price surveys carried out by countries across Africa and elsewhere in the world.

BACKGROUND - TANZANIA

Tanzania is classified as a low income country by the World Bank with an estimated GNP per capita of US\$290 in 2004. Per capita public health spending was US\$6 in 2001. It was the intention of the Government to increase this spending to US\$9 by 2004 and thereafter to US\$12. The public sector medicines budget was about US\$0.5 per capita in 2002.

Public sector procurement and distribution is managed by the Medical Stores Department (MSD). There are 169 registered wholesalers serving the retail pharmacy sector. The quality of medicines on the market in Tanzania and licensing of retail, wholesale and manufacturing premises is the responsibility of the Tanzania Food and Drug Authority (TFDA).

In the public sector, there is a policy of cost sharing for patients depending upon the patient's income. Exemptions and waivers exist for specific groups such as children, the elderly and those with certain medical conditions.

MEDICINES, AREAS AND SECTORS SURVEYED

The medicines surveyed included a standardized core group of 30 medicines that were surveyed in all countries and a supplementary group of 14 medicines specific to Tanzania. The core group was selected based on global burden of disease, availability of standard formulations and importance. Medicines in the supplementary group were selected because of the importance and/or the frequency of their use in treating important common health problems in Tanzania. Both medicines on and off patent and on and off the national essential medicines list were represented.

In all, 44 medicines were surveyed in 4 regions in Tanzania: Dar es Salaam, Mwanza, Mbeya and Mtwara.

Areas measured in each sector	Public facilities	Private outlets	NGO facilities
Affordability to patients	✓	✓	✓
Procurement price	✓		
Price to patients	✓	✓	✓
Availability to patients	✓	✓	✓

PRESENTATION OF PRICE INFORMATION

The WHO/HA) survey methodology presents prices as median price ratios (MPR). The MPR is the ratio of the local price divided by an international reference price converted into the same currency. As such, the reference price serves as an external standard for evaluating local prices. An MPR of 1 means the local price is equivalent to the reference price whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the *2003 Management Sciences for Health (MSH)*

International Drug Price Indicator Guide (<http://erc.msh.org/>). The MSH guide pulls together information from recent price lists of large, non-profit generic medicine suppliers and thus reflects the prices governments could be expected to pay for medicines.

INTERPRETATION OF FINDINGS

Where survey findings point to the high cost or poor availability of a few specific medicines, they are named in this paper. However, these are unlikely to be isolated incidents. As only 44 medicines were included in this survey, a finding of high prices or low availability of even 3 or 4 medicines – or 7% to 9% of those studied – could indicate a greater problem and requires further investigation.

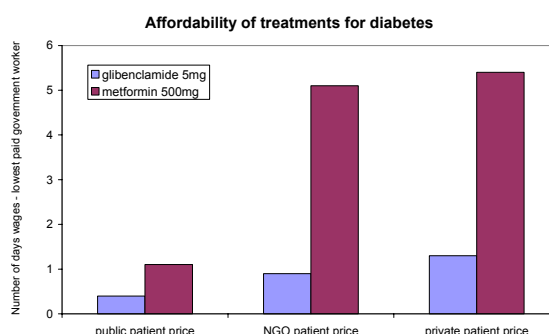
AFFORDABILITY

In this paper, affordability is calculated in terms of the number of days the lowest paid unskilled government worker would have to work to pay for one treatment course for an acute condition or one month's treatment for a chronic condition. At the time of the survey, the lowest paid unskilled government worker earned TSh 1667 (US\$1.558) per day. According to the World Development Report 2005, 72.5% of the Tanzanian population lives on less than US\$2 per day and 48.5% on less than US\$1 per day. More than half of the population lives on less than the salary of the lowest paid government worker and hence the affordability for many Tanzanians will be lower than for this worker.

Overall, purchasing treatments for chronic conditions was found to require many more days' work than purchasing treatments for acute conditions.

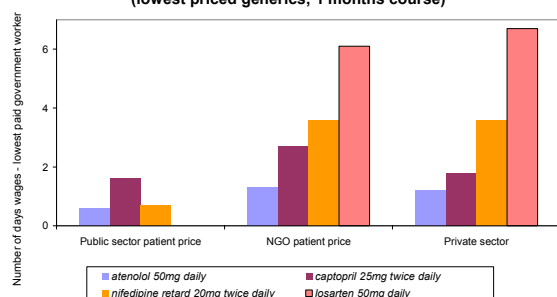
The burden is especially great for a family needing treatment for several conditions at the same time, e.g. using the lowest priced generic medicines, it would take just under 5 days' wages for the lowest paid unskilled government worker to purchase a salbutamol inhaler for a child with asthma, a course of cotrimoxazole suspension for a child with a respiratory tract infection, glibenclamide tablets for an adult with diabetes and ranitidine tablets for an adult with a peptic ulcer.

The survey also found significant differences in affordability between medicines within a therapeutic category. The two graphs below illustrate these differences for two lowest priced generics used to treat diabetes and hypertension. While there may be clinical advantages of one treatment option over the other, for patients paying out-of-pocket and in particular when a medicine is not available in the public sector, patients may be unable to afford the preferred treatment.



¹ <http://www.haiweb.org/medicineprices/>

**Affordability of treatments for hypertension
(lowest priced generics; 1 months course)**



The price of medicines is a key aspect of their affordability. In this survey, public procurement prices were assessed as were the prices charged to patients at public sector facilities, private retail pharmacies, and non-governmental facilities.

PUBLIC SECTOR PROCUREMENT PRICES

Public sector procurement prices for the lowest priced generic medicines were found to be 0.69 times international reference prices. In other words, Tanzania is procuring medicines at 31% less than the published international market prices of non-profit generic medicine suppliers.

Number of times more expensive: public procurement prices compared to international reference prices		
Price (MPR)	Innovator brand ²	Lowest priced generic ³
No. of medicines included	0	32
Median MPR		0.69
25 th percentile		0.57
75 th percentile		0.85

n= 44 medicines

However, three medicines were procured for more than twice the international reference price. As such, Tanzania is paying 2.91, 11.38 and 2.33 times published international market prices for furosemide, gentamycin and hydrochlorothiazide respectively.

Of the 31 medicines surveyed that are on the essential medicines list (EML⁴) of Tanzania, four were out of stock at the central warehouse at the time of the survey: acyclovir, beclometasone, chloramphenicol eye drops, and fluconazole.

Five of the medicines surveyed that are not on the current EML were procured for use in the public sector: artesunate, ceftriaxone, metformin, nevirapine and zidovudine.

PUBLIC SECTOR PRICES

At public sector facilities, patient prices for the lowest priced generic medicines were found to be 1.33 times international reference prices. Patient prices ranged from 0.29 times (or 71% less than) the international reference price for omeprazole to 8.17 times the international reference price for albendazole.

Number of times more expensive: patient prices for medicines at public health facilities compared to international reference prices	
Price (MPR)	Lowest priced generic
No. of medicines included ⁵	28
Median MPR	1.33
25 th percentile	0.93
75 th percentile	2.83

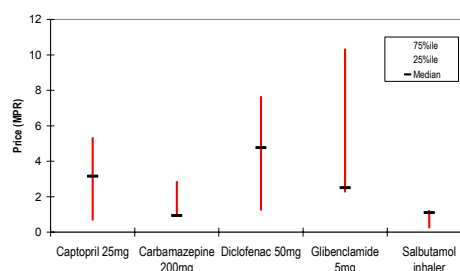
n=21 facilities⁶; 44 medicines

Innovator brands are not generally procured for use in the public sector and none of the innovator brands surveyed was found in public sector facilities.

There are no national guidelines on how medicines prices are fixed in the public sector and it was found that the prices patients are charged for lowest priced generic medicines varied from facility to facility in the

public sector. In some cases, the prices varied by many multiples. Those medicines with the greatest variation in price are shown below.

Medicines with largest variations in patient prices



PRIVATE SECTOR PRICES

Out of the 44 medicines surveyed, only 3 innovator brand products were found in private retail pharmacies. These were for sulfadoxine-pyrimethamine, albendazole and carbamazepine which were 12.12, 94.98 and 18.79 times international reference prices respectively. Both sulfadoxine-pyrimethamine and albendazole were widely available and hence likely to have a noteworthy market-share, despite having a high brand premium to the price.

At private retail pharmacies, patient prices for the lowest priced generics were found to be 2.67 times the international reference price. The prices charged to patients for the lowest priced generic medicines ranged from 0.37 times the international reference price for losartan to 19.0 times the international reference price for albendazole.

Number of times more expensive: patient prices for medicines at private retail pharmacies compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	3	35
Median MPR	18.79	2.67
25 th percentile	15.45	1.84
75 th percentile	56.88	4.59

n= 48 facilities; 44 medicines

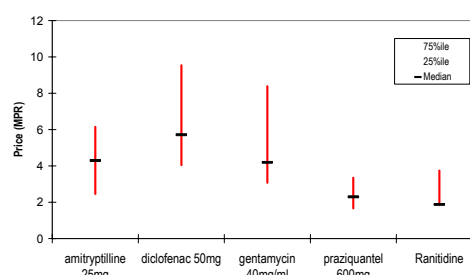
Availability at private retail pharmacies	Innovator brand	Lowest priced generic
Median availability	0%	47.9%
25 th percentile	0%	21.9%
75 th percentile	2.1%	73.4%

n= 48 facilities; 44 medicines

Three medicines from the essential medicines list were not available in private retail pharmacies at the time of the survey: beclometasone inhaler, fluconazole and hydrochlorothiazide.

In the private sector, the prices patients are charged for medicines varied from pharmacy to pharmacy. In some cases, the prices varied by many multiples. The lowest priced generics medicines with the greatest variation in price are shown below.

Medicines with largest variations in patient prices



The following table shows those generic medicines for which patients at private retail pharmacies are charged at least five times published international prices for the lowest priced generic and/or innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

² Innovator brands are not generally procured for use in the public sector

³ The lowest priced generic equivalent was determined facility-by-facility and was the lowest priced generic equivalent product available for sale at each facility included in the survey. In determining public procurement prices, the lowest priced generic at the national medical store or on the national tender document was used.

⁴ 1997 edition

⁵ Patient prices were analyzed only in cases where at least 4 data points were available, i.e. price data were collected from at least four facilities.

⁶ Not all facilities were included in this analysis as some facilities provided medicines free of charge or provided medicines at a flat-rate fee.

Number of times more expensive: patient prices for medicines at private retail pharmacies compared to international reference prices		
Medicine	Lowest priced generic (MPR)	Innovator brand (MPR)
Albendazole	19.0	94.98
Atenolol	6.46	
Carbamazepine	4.70	18.79
Chloramphenicol eye drops	11.61	
Fluphenazine injection	5.57	
Furosemide injection	6.81	
Glibenclamide	8.55	
Metformin	5.25	
Sulphadoxine-pyrimethamine	3.64	12.12

The table below shows the differential between the price patients at private retail pharmacies are charged for the innovator brand and the lowest priced generic equivalent for three medicines.

Number of times more expensive: patient prices at private retail pharmacies for innovator brands compared to lowest priced generic equivalents	
Albendazole	5
Carbamazepine	4
Sulphadoxine-pyrimethamine	3.33

NON-GOVERNMENTAL SECTOR PRICES

In the non-governmental sector, the price charged to patients for lowest priced generics was found to be 2.90 times the international reference price. Patient prices ranged from 0.34 times the international reference price for losartan to 15.2 times the international reference price for albendazole.

Out of the 44 medicines surveyed, only one innovator brand, sulfadoxine-pyrimethamine, was found in non-governmental facilities. It was sold to patients at 13.82 times the international reference price.

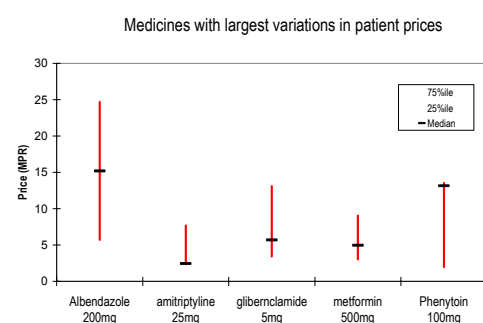
Number of times more expensive: patient prices for medicines at non-governmental facilities compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	1	34
Median MPR	13.82	2.90
25 th percentile		1.79
75 th percentile		5.45

n= 28 facilities⁷; 44 medicines

Availability at non-governmental facilities		
Availability	Innovator brand	Lowest priced generic
Median availability	0%	41.9%
25 th percentile	0%	22.6%
75 th percentile	0%	67.7%

n= 31 facilities; 44 medicines

In non-governmental facilities, the prices patients are charged for medicines varied from facility to facility for some medicines. Those lowest priced generics with the greatest variation in price are shown below.



INTER-SECTORAL COMPARISONS

Public sector patient prices were twice public sector procurement prices.

Private sector patient prices were 2.3 times public sector patient prices.

The prices patients were charged for medicines in the NGO sector were 2.4 times what they were charged in the public sector. Medicines prices in the NGO sector were thus almost the same as in the private retail sector. Availability in the NGO sector was generally greater than in the public sector.

The table below compares the prices of lowest priced generics between sectors where the same medicines were found in both sectors.

For lowest priced generics:	Were this many times more expensive:	Than:
Public sector patient prices (n=22 medicines)	2.02	Public procurement prices
Private retail patient prices (n=28 medicines)	2.32	Public sector patient prices
NGO patient prices (n= 34 medicines)	1.10	Private retail patient prices
NGO patient prices (n= 28 medicines)	2.37	Public sector patient prices

While public sector patient prices for lowest priced generics were double public procurement prices, the public sector patient price of some medicines was as much as 14.5 times the public procurement price. This is shown in the table below.

Number of times more expensive: patient prices at public sector facilities compared to public sector procurement prices (lowest priced generic)	
Albendazole	14.50
Ciprofloxacin	6.19
Clotrimazole	4.25
Diazepam	7.73
Diclofenac 50mg ⁸	6.68
Doxycycline	4.16
Glibenclamide	4.11
Sulfadoxine-pyrimethamine	5.40

Though patient prices in the private sector were generally double those in the public sector, some medicines were similarly priced in the two sectors.

Number of times more expensive: patient prices in private retail pharmacies compared to public sector facilities (lowest priced generic)	
Aciclovir	1.23
Captopril	1.12
Ciprofloxacin	1.20
Diclofenac 50mg	1.20
Metronidazole	1.00
Salbutamol inhaler	1.09
Sulfadoxine-pyrimethamine	1.00

Overall, patients were charged much the same prices for medicines purchased at NGO facilities as at private sector pharmacies. However, some medicines were more expensive when purchased at NGO facilities.

Number of times more expensive: patient prices in NGO facilities compared to private retail pharmacies (lowest priced generic)	
Artesunate	2.00
Captopril	1.50
Ceftriaxone	1.47
Cephalexin	1.75
Ciprofloxacin	1.25
Furosemide	1.67
Gentamycin	2.33
Metronidazole	1.58
Phenytoin	3.33

The patient prices of some medicines in the public sector were almost the same as in private and NGO sectors namely salbutamol inhaler and sulphadoxine-pyrimethamine; this being despite the public sector procurement price for sulphadoxine-pyrimethamine being low.

Patients need medicines not only to be affordable, but also available. Some medicines were not widely available in either public or private sectors others were more widely available in the private sector. In

⁷ Not all facilities are included in this analysis as some facilities provided medicines free of charge or provided medicines for a flat-rate fee

⁸ two different strengths of diclofenac were studied

some cases, this increased availability was accompanied by small differences in patient prices and in other cases the prices charged to patients in the private sector were much higher. The following table presents availability in the public and private sectors, and the percentage difference in patient prices at public facilities versus private retail pharmacies for lowest priced generics.

Lowest priced generic	% Availability		Number of times more expensive: patient prices at private retail pharmacies compared to public facilities
	Public sector facilities (n=21)	Private retail pharmacies (n=48)	
Acyclovir	19%	50%	1.23
Amitriptyline	29%	42%	6.32
Atenolol	24%	42%	2.00
Captopril	24%	50%	1.12
Carbamazepine	33%	38%	5.00
Ceftriaxone	19%	44%	1.41
Co-trimoxazole	38%	83%	2.29
Furosemide	29%	44%	2.61
Glibenclamide	19%	38%	3.41
Metformin	19%	46%	4.69
Nifedipine Retard	38%	48%	4.98
Nystatin	48%	73%	2.98
Salbutamol	24%	56%	1.08

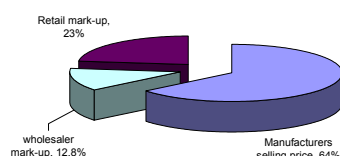
Some medicines, in all sectors seem to be at higher prices than others and than they could be when compared to the international reference price e.g. albendazole, atenolol, chloramphenicol eye drops and sulfadoxine-pyrimethamine.

PRICE COMPONENTS

Examining the components that make up the price of medicines is an important step in determining how to reduce their cost. The final price paid for a medicine whether by the government or a patient reflects the manufacturers selling price plus all the intervening price additions. These additions include the cost of importing, distributing and dispensing the medicine.

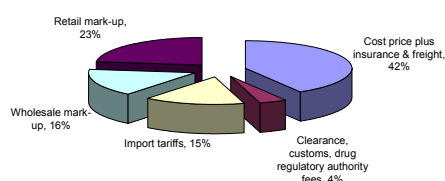
In the private sector, for a locally produced product in Tanzania, the manufacturer's selling price represents around 64% of the final patient price and the wholesaler and retailer mark-ups account for 13% and 23% of the patient price respectively.

Typical proportions of add-ons of final patient price for an locally produced generic product



For an imported generic medicine, the cost price in the private sector represents 42% of the final price with wholesale and retail mark-ups accounting for 16% and 23% respectively. Clearance costs account for 4% and import tariffs represent 15% of the final price charged to patients.

Typical proportions of add-ons of final patient price for an imported generic product



RECOMMENDATIONS FROM COUNTRY REPORT AND STAKEHOLDER MEETING

A summary of the recommendations is provided below, for a fuller explanation see the full survey report:

- A pricing policy should be considered including revisiting approaches in place before trade liberalization
- Measures should be taken to improve the availability of essential medicines at all levels in the public sector to 100%, including better quantification of needs and strengthening of the "pull" system
- A policy for the public sector pricing of medicines to patients should be developed and implemented
- Funding for public health facilities should be made on time
- Other health financing mechanisms eg pre-payment schemes such as the Community Health Funds and the National Health Insurance Fund should be considered for further expansion

ANALYSIS

Below is a further analysis of the findings presented in this paper.

AFFORDABILITY AND ACCESS TO MEDICINES

"Out-of-pocket" purchase of most medicines is not affordable to the majority of the population.

Consideration of price in the choice of medicines could determine whether a patient can obtain a medicine for treatment, or not.

Some medicines across all sectors seem to be more expensive than necessary.

There was marked price variation for some medicines within the public, private and NGO sectors - some patients are paying much more than they would be in other facilities or pharmacies.

Some key medicines which were not widely available at all in the public sector were up to more than six times more expensive in the private sector than they would have been in the public sector if available.

PUBLIC SECTOR

Where patients pay for medicines, the prices were less than half the price than the private or NGO sectors.

Patient prices were twice the public sector procurement price, although some medicines, including key essential medicines had much greater multiples of price.

The patient prices of some medicines in the public sector were almost the same in private and NGO sectors, for some medicines this was despite the public sector procurement price being low.

The public sector procurement system is paying more than might be necessary for a small, but significant proportion of medicines.

Medicine prices varied greatly from facility to facility.

PRIVATE SECTOR

Some branded medicines were widely available and hence were likely to have noteworthy market share despite having a high brand premium.

Some medicines on the national essential medicines list were not available from private retail pharmacies.

NGO SECTOR

Prices in NGO facilities were markedly greater than in the public sector; prices being similar to that of the private retail pharmacies; availability in the NGO sector was generally greater than in the public sector.

ACKNOWLEDGEMENTS

The survey was carried out by the Ministry of Health of the United Republic of Tanzania in collaboration with and funded by the World Health Organisation in Tanzania. The Ministry acknowledges Prof. Dr. M. Justin-Temu (Survey Manager), Mr. M. Auton, Dr Z. Berege, Mr J. Muhume, Ms R. Shija, Dr. G. Rimoy, Dr. F. Damian, Dr M. Jande, Ms E. Lupaya, Dr. V. Mugoyela, Mr C Mwaifwan, Mr F. Nicolaus, and Mr. C. Makwaya, as well as health workers in the surveyed facilities; the trainers of the data collectors; the Regional Medical Officers and Regional Pharmacists of Dar es Salaam, Mwanza, Mbeya, and Mtwara Regions; the Tanzania Food and Drug Authority and all the others who contributed their time and expertise to this survey.

FURTHER INFORMATION

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LES PRIX DES MEDICAMENTS AU TCHAD

MESURER LES PRIX DES MEDICAMENTS

Un tiers de la population mondiale ne dispose pas d'un accès régulier aux médicaments dont elle a besoin et la plus part des patients des pays en développement paient eux-mêmes leurs médicaments faute de systèmes d'assurance maladie efficaces. Les prix élevés des médicaments représentent une barrière importante à leur utilisation ainsi qu'à l'amélioration de l'état de santé des populations.

En Mai 2004, le Ministère de la Santé Publique du Tchad, avec l'appui de l'Organisation Mondiale de la Santé (OMS), a réalisé une étude nationale sur les prix des médicaments dans les secteurs public, privé et confessionnel. A l'aide de la méthodologie développée par l'OMS et Health Action International (HAI) : *Les prix des médicaments : une nouvelle approche pour les mesurer*, le Ministère a évalué l'accessibilité financière de plusieurs traitements médicamenteux, analysé les prix et la disponibilité d'une sélection de médicaments et identifié les composantes des prix (taxes, marges bénéficiaires, etc.) des médicaments. Les résultats ont été utilisés pour déterminer les facteurs contribuant aux prix élevés des médicaments et à leur variation dans le pays. Ils permettent de plus à identifier des stratégies et des politiques qui permettront d'améliorer leur accessibilité. Ce document fait partie d'une série de résumés qui présentent les résultats d'enquêtes sur les prix des médicaments effectuées par des pays en 'Afrique et ailleurs dans le monde.

LE CONTEXTE DU TCHAD

Le Tchad est un pays enclavé et le port maritime le plus proche (Douala au Cameroun) est à environ 1000 km. Cette situation d'éloignement peut jouer considérablement sur l'approvisionnement en médicaments.

En 2002, la population du Tchad est estimée à 7,84 millions d'habitants dont 48% ont moins de 15 ans. Le pays est classé comme pays à faible revenu par la Banque Mondiale avec un PNB par habitant en 2003 de 315,9 dollars américains. La couverture sanitaire par les services de santé est faible et les soins ne sont pas gratuits. Le système de recouvrement des coûts est instauré, les patients paient leurs produits avec une ordonnance nominative. Il n'existe pas de système d'assurance de santé publique.

Le nombre des pharmacies d'officine privées est de 23, principalement situées dans la capitale N'Djamena. 120 dépôts pharmaceutiques sont répartis dans les grandes villes du pays. Il existe des organisations non gouvernementales dans le secteur de la santé, des cabinets de soins et des cliniques privées. Une liste de médicaments essentiels est appliquée dans le secteur public et dans le secteur privé à but non lucratif et les médicaments sont achetés par appels d'offres internationaux. La politique pharmaceutique est en vigueur depuis 1996 et il n'existe pas de loi sur les brevets.

La seule société industrielle pharmaceutique qui produisait cinq molécules dans le passé est fermée depuis 1998.

La Centrale Pharmaceutique d'Achats (CPA) approvisionne en médicaments essentiels génériques les formations sanitaires publiques et privées à but non lucratif.

MEDICAMENTS, ZONES ET SECTEURS ETUDIES

Les médicaments étudiés comprennent 13 produits provenant d'un panier de médicaments commun pour tous les pays utilisant cette méthodologie d'enquête et une liste complémentaire de 9 médicaments spécifiques au Tchad. Les médicaments du panier ont été choisis en fonction des pathologies prédominantes sur le plan mondial et la disponibilité des formulations courantes. Les médicaments de la liste complémentaire ont été sélectionnés en raison de l'importance et/ou de la fréquence de leur utilisation pour la prise en charge des problèmes de santé courants au Tchad.

Les prix et la disponibilité de 22 médicaments en tout ont été étudiés dans 4 régions au Tchad : N'Djamena, Ouaddaï, Logone Oriental et Lac.

Variables mesurées dans chaque secteur	Secteur public	Secteur privé	Secteur confessionnel
Accessibilité financière aux patients	✓	✓	✓
Prix d'achat	✓		
Prix payés par les patients	✓	✓	✓
Disponibilité aux patients	✓	✓	✓

PRESENTATION DES INFORMATIONS SUR LES PRIX

La méthodologie d'enquête de l'OMS/HAI présente les prix en tant que ratios des prix médians (RPM). Le RPM est le ratio entre le prix local et un prix international de référence converti dans la même devise. Les prix de référence servent de norme externe pour évaluer des prix locaux. Un RPM de 1 signifie que le prix local est équivalent au prix de référence tandis qu'un RPM de 2 indique que le prix local est deux fois supérieur au prix de référence. Les prix de référence internationaux utilisés pour cette étude proviennent de l'édition 2003 de l'Indicateur des Prix Internationaux des Médicaments publié par *Management Sciences for Health* (MSH) (<http://erc.msh.org/>). L'indicateur des prix de MSH rassemble les prix des médicaments génériques proposés par un ou plusieurs grossistes à but non lucratif internationaux aux centrales d'achats publiques ou privées à but non lucratif et reflète ainsi les prix que les Etats pourraient envisager à payer pour les médicaments. Il est logique que les prix payés par les patients soient plus élevés que ceux payés par les Etats, mais les majorations pratiquées sur le prix de base devraient être raisonnables et uniformes pour tous les médicaments et dans tout le pays.

INTERPRETATION DES RESULTATS

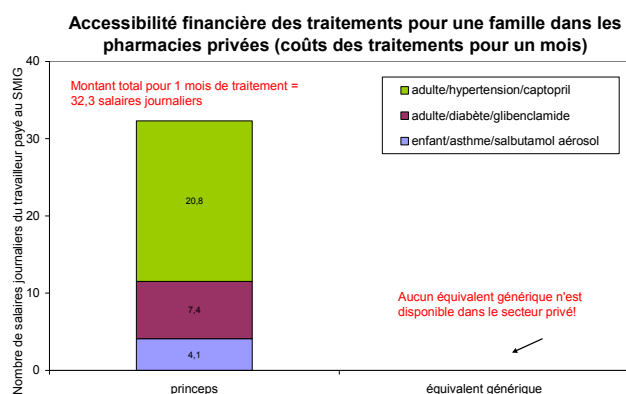
Lorsque l'enquête révèle des prix élevés ou une faible disponibilité de quelques médicaments spécifiques, ils sont cités dans cette présentation. Cependant, il est peu probable qu'il s'agisse de cas isolés. Sachant que le nombre total de médicaments inclus dans cette enquête est 22, le fait de trouver des prix élevés ou une faible disponibilité même pour 3 ou 4 médicaments - ou 14% à 18% de ceux étudiés - pourrait indiquer un problème plus global et nécessiterai une recherche plus approfondie des causes.

ACCESSIBILITE FINANCIERE

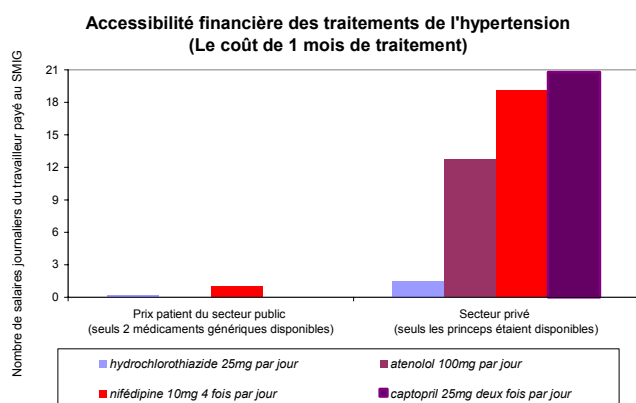
Suivant la méthodologie d'enquête utilisée, l'accessibilité financière est calculée en nombre de jours de travail nécessaires à un employé non qualifié du secteur public pour payer le traitement d'une affection aiguë ou un mois de traitement pour une maladie chronique. Au moment de l'étude le salaire journalier minimum d'un employé non qualifié du secteur public au Tchad était de 849,4 FCFA.

D'une façon générale, l'achat des traitements pour les affections chroniques requiert beaucoup plus de jours de travail que l'achat des traitements pour les affections aiguës.

La charge financière est particulièrement lourde pour une famille qui se retrouve dans le besoin d'acheter le traitement de plusieurs affections en même temps. Par exemple, en s'adressant au secteur privé, suite à l'indisponibilité des médicaments dans le secteur public, l'employé non qualifié du secteur public payé au salaire minimum (SMIG) devrait dépenser un salaire de 32,3 jours de travail pour acheter un aérosol de salbutamol pour un enfant asthmatique, des comprimés de glibenclamide pour un mois de traitement d'un adulte diabétique et des comprimés de captopril pour un mois de traitement d'un adulte souffrant d'hypertension. Lors de l'enquête, des équivalents génériques pour ces médicaments n'ont pas été trouvés dans le secteur privé. Dans le secteur public aucune formation sanitaire (FS) des 24 visitées n'avait les trois médicaments à la fois ; 12,5% des FS disposaient de salbutamol aérosol, 16,7% de glibenclamide et 0% de captopril.



L'enquête a également trouvé des différences significatives dans l'accessibilité financière de médicaments appartenant à la même catégorie thérapeutique. Le graphique ci-dessous illustre ces différences pour les médicaments utilisés dans le traitement de l'hypertension. Bien qu'une option thérapeutique puisse avoir des avantages cliniques sur une autre, certains patients ne pourront pas en bénéficier puisque le traitement indiqué pourrait être inabordable pour eux, d'autant plus que la disponibilité des médicaments est très faible dans le secteur public.



L'accès aux médicaments dépend en grande partie de leur prix. Cette étude a permis de mesurer le prix d'achat dans le secteur public, ainsi que le prix payés par les patients dans les trois secteurs – public, privé et confessionnel.

LES PRIX D'ACHAT DU SECTEUR PUBLIC

Dans le secteur public le prix d'achat des médicaments génériques sont 1,19 fois supérieurs au prix de référence international. Autrement dit, le Tchad achète des médicaments à un prix supérieur de 19% au prix international publié des fournisseurs de médicaments génériques à but non lucratif.

Nombre de fois que le prix d'achat public est supérieur au prix de référence international		
Prix (RPM)	Médicament princeps	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	0	17
RPM médian		1,19
Quartile 25%		0,92
Quartile 75%		1,30

n=22 médicaments

Cependant, trois médicaments ont été achetés à un prix plus de deux fois supérieur au prix de référence international ; le secteur public tchadien a payé respectivement 2,17 ; 3,46 et 3,57 fois le prix international publié pour l'achat de mébendazole comprimés, tétracycline pommade ophtalmique et chlorphéniramine comprimés.

Parmi les 22 médicaments étudiés, 5 (tous destinés au traitement de maladies chroniques) n'étaient pas disponibles dans la centrale d'achat.

LES PRIX DU SECTEUR PUBLIC

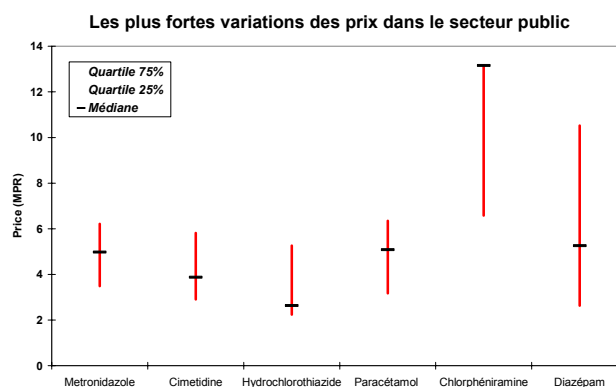
Le prix payé par les patients dans les formations sanitaires publiques sont 3,88 fois supérieurs au prix de référence international. Certains médicaments sont vendus aux patients à un prix particulièrement élevé : chlorphéniramine comprimé (cp). - 13,16 fois supérieur au prix de référence international, diazépam cp. - 5,26, paracétamol cp. - 5,08.

Nombre de fois que les prix payés par les patients dans les formations sanitaires publiques sont supérieurs aux prix de références internationaux	
Prix (RPM)	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	13
RPM médian	3,88
Quartile 25%	2,63
Quartile 75%	4,98

n=24 formations sanitaires publiques; 22 médicaments

Le secteur public ne fournit que des médicaments génériques, aucun médicament princeps n'a été trouvé dans ce secteur.

Le prix payé par les patients dans les différentes formations sanitaires publiques est très variable. Dans certains cas, le prix du même médicament peut être plusieurs fois supérieur d'un point de vente à l'autre. Les prix des médicaments subissant les plus fortes variations sont présentés ci-dessous :



LES PRIX DU SECTEUR PRIVE

La disponibilité médiane des médicaments princeps était inférieure à 50%, c.-à-d. qu'une grande partie des médicaments étaient disponibles dans moins de la moitié des sites visités. Leurs prix sont 21,93 fois supérieurs au prix de référence internationaux, avec des extrêmes de 3,32 fois pour salbutamol aérosol et 113,06 pour mébendazole comprimés.

Parmi les 22 médicaments étudiés, seuls 6 avaient des équivalents génériques dans les points de vente privés. Le prix des médicaments génériques étaient très supérieurs au prix de référence international (15,12 fois), mais aussi largement au-dessus des prix des médicaments génériques du secteur public (430% des prix pour les mêmes produits).

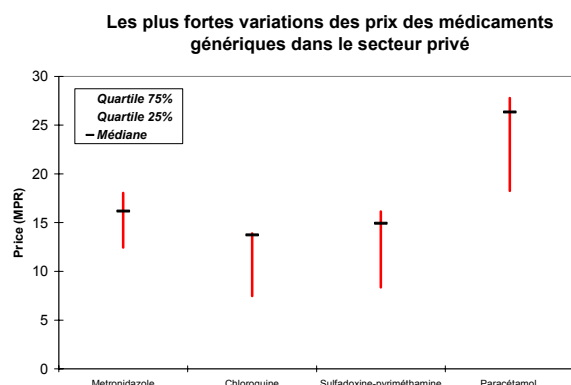
Nombre de fois que les prix payés par les patients dans le secteur privé sont supérieurs aux prix de références internationaux		
Prix (RPM)	Médicament princeps	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	15	6
RPM médian	21,93	15,12
Quartile 25%	11,88	14,03
Quartile 75%	41,50	15,96

n= 11 points de vente privés ; 22 médicaments

Disponibilité des médicaments dans le secteur privé	Médicament princeps	Générique le moins cher
Disponibilité médiane	45,5%	13,6%
Quartile 25%	11,4%	0,0%
Quartile 75%	79,5%	34,1%

n= 11 points de vente privés ; 22 médicaments

Peu disponibles et vendus à des prix élevés, les médicaments génériques du secteur privé présentent aussi l'inconvénient pour les patients d'être proposés à des prix différents dans chaque point de vente de médicaments. Le graphique ci-dessous montre les plus fortes variations des prix des médicaments génériques dans le secteur privé.



Le tableau suivant indique les prix des médicaments génériques trouvés dans le secteur privé produit par produit. Les prix des principes correspondants sont présentés pour comparaison. Tous les prix des équivalents génériques vendus dans le secteur privé au Tchad sont supérieurs de plus de dix fois au prix de référence international, à l'exception de celui de la pommade ophtalmique tétracycline. Cette différence de plus de 10 fois entre le prix de référence international et le prix payé par les patients au Tchad font que ces produits sont considérés comme particulièrement chers pour les patients.

Nombre de fois que les prix payés par les patients dans le secteur privé sont supérieurs aux prix de références internationaux		
Médicament	Générique le moins cher (RPM)	Médicament princeps (RPM)
Amitriptyline	15,31	-
Chloroquine	13,73	13,90
Métronidazole	16,18	62,22
Paracétamol	26,33	61,53
Sulfadoxine-pyriméthamine	14,93	35,83
Tétracycline pommade opht.	4,08	4,29

LES PRIX DU SECTEUR CONFESSIONNEL

Les prix dans le secteur confessionnel sont un peu inférieurs aux prix du secteur public, mais toujours élevés par rapport aux prix d'achat. La variation des prix dans le pays est aussi assez importante (intervalle interquartile large).

Les prix payés par les patients varient entre 1,29 fois le prix de référence internationale pour la pommade ophtalmique de tétracycline et 9,96 pour les comprimés de métronidazole.

Aucun médicament princeps n'a été trouvé dans ce secteur.

Nombre de fois que les prix payés par les patients dans le secteur confessionnel sont supérieurs aux prix de références internationaux		
Prix (RPM)	Médicament princeps	Générique le moins cher
Nb. de médicaments inclus dans l'analyse	0	7
RPM médian		3,95
Quartile 25%		3,08
Quartile 75%		5,06

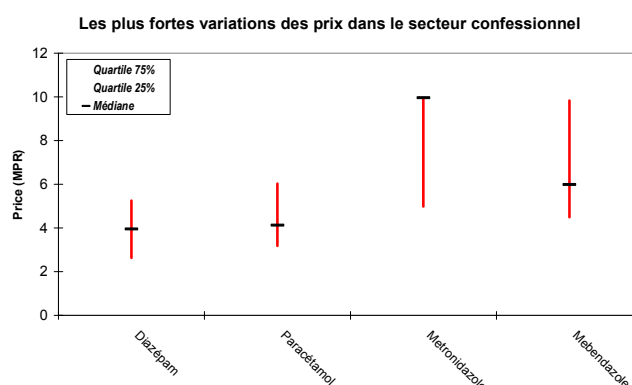
n=8 formations sanitaires confessionnelles; 22 médicaments

Disponibilité dans les formations sanitaires confessionnelles	Médicament princeps	Générique le moins cher
Disponibilité médiane	0%	6,3%
Quartile 25%	0%	0,0%
Quartile 75%	0%	59,4%

n= 8 formations sanitaires confessionnelles; 22 médicaments

La disponibilité des médicaments essentiels est aussi très faible dans ce secteur.

Les prix de certains médicaments payés par les patients varient d'une formation sanitaire confessionnelle à une autre. Les plus fortes variations des prix dans le secteur confessionnel sont présentées ci-dessous.



COMPARAISONS ENTRE SECTEURS

Les prix payés par les patients dans le secteur public étaient 3 fois supérieurs aux prix d'achat du même secteur.

Les prix payés par les patients dans le secteur privé étaient 4,3 fois supérieurs aux prix payés par les patients dans le secteur public.

Les prix payés par les patients dans le secteur confessionnel étaient inférieurs aux prix du secteur public (0,87) et aux prix du secteur privé (0,25). Toutefois la disponibilité des médicaments dans ce secteur était très faible.

Le tableau ci-dessous compare les prix des génériques les moins chers lorsque les mêmes médicaments étaient trouvés dans les deux secteurs comparés.

Les génériques les moins chers :	Nombre de fois plus élevés:	Que:
Prix payés par les patients dans le secteur public (n=13 médicaments)	3,09	Prix d'achat du secteur public
Prix payés par les patients dans le secteur privé (n=5 médicaments)	4,29	Prix payés par les patients dans le secteur public
Prix payés par les patients dans le secteur confessionnel (n=4 médicaments)	0,25	Prix payés par les patients dans le secteur privé
Prix payés par les patients dans le secteur confessionnel (n=7 médicaments)	0,87	Prix payés par les patients dans le secteur public

Bien que les prix payés par les patients dans le secteur public pour le médicament générique le moins cher étaient environ 3 fois supérieurs aux prix d'achat dans ce secteur, ce ratio n'était pas constant pour tous les médicaments atteignant pour certains plus de 6 fois.

Nombre de fois que les prix payés par les patients dans le secteur public sont supérieurs aux prix d'achat du secteur public (générique le moins cher)	
Amoxicilline	1,80
Mébendazole	2,07
Hydrochlorothiazide	2,16
Cotrimoxazole suspension	2,22
Sulfadoxine-pyriméthamine	2,57
Chloroquine	2,97
Métronidazole	3,22
Glibenclamide	3,47
Chlorphéniramine	3,69
Paracétamol	3,90
Cimétidine	4,26
Diazépam	6,29

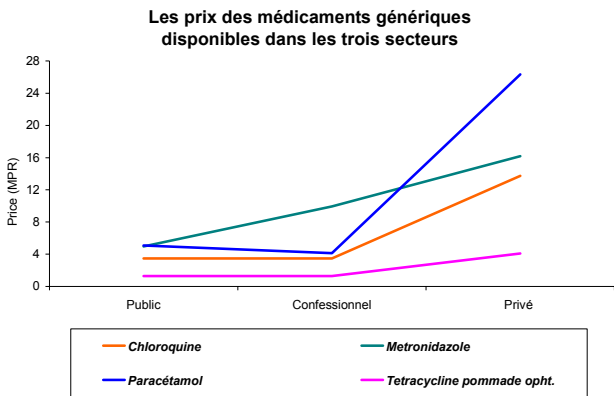
Tous les médicaments génériques trouvés dans le secteur privé sont supérieurs aux prix payés par les patients dans le secteur public (générique le moins cher) et parfois plus de cinq fois plus.

Nombre de fois que les prix payés par les patients dans le secteur privé sont supérieurs aux prix payés par les patients dans le secteur public (générique le moins cher)	
Tétracycline pommade opht.	3,17
Métronidazole	3,25
Chloroquine	3,95
Sulfadoxine-pyriméthamine	4,63
Paracétamol	5,18

Certains produits sont moins chers dans le secteur confessionnel que dans le secteur public, mais d'autres sont plus chers dans ce secteur.

Nombre de fois que les prix payés par les patients dans le secteur confessionnel sont supérieurs aux prix payés par les patients dans le secteur public (générique le moins cher)	
Diazépam	0,75
Paracétamol	0,81
Chloroquine	1,00
Tétracycline pommade opht.	1,00
Amoxicilline	1,25
Mébéndazole	1,33
Métronidazole	2,00

La comparaison des prix des quatre médicaments pour lesquels existaient des équivalents génériques dans les trois secteurs confirme que même quand les génériques sont présents ils ne sont pas toujours vendus à un prix abordable.



Les patients ont besoin de médicaments non seulement accessibles financièrement mais aussi disponibles. La disponibilité des médicaments génériques n'était pas satisfaisante dans les trois secteurs. Ceci oblige un grand nombre de patients à se procurer les médicaments dans le secteur privé où ils trouvent surtout les princeps à un prix très élevé. Le tableau suivant présente les seuls produits pour lesquels existaient des équivalents génériques dans le secteur privé, le pourcentage de formations sanitaires où ils étaient disponibles, ainsi que la disponibilité des mêmes médicaments dans le secteur public et la différence des prix auxquels ils sont vendus dans les deux secteurs.

Générique le moins cher	% Disponibilité		Nombre de fois génériques du secteur privé plus chers qu'au secteur public
	Formations sanitaires publiques (n=24)	Points de vente de médicaments privés (n=11)	
Chloroquine	91,7%	63,6%	3,95
Métronidazole	91,7%	36,4%	3,25
Paracétamol	87,5%	72,7%	5,18
Sulfadoxine-pyriméthamine	58,3%	63,6%	4,63
Tétracycline pommade opht.	87,5%	36,4%	3,17

Une autre catégorie de médicaments -présentée ci-dessous- suscite également des inquiétudes du fait qu'il n'y avait pratiquement pas d'équivalents génériques dans le secteur privé et que la disponibilité était faible dans le secteur public.

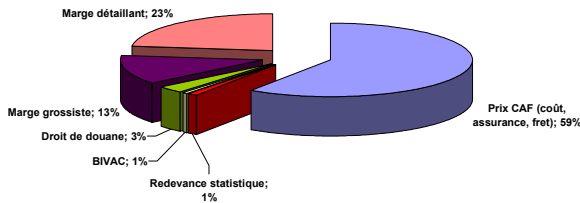
Nom du médicament	Disponib. générique secteur public	Disponib. générique secteur privé	Prix générique secteur public (RPM)	Prix princeps secteur privé (RPM)
Aténolol	0,0%	9,1%		21,93
Captopril	0,0%	18,2%		20,58
Carbamazépine	0,0%	0,0%		11,48
Cotrimoxazole suspension	45,8%	9,1%	2,05	12,28
Glibenclamide	16,7%	0,0%	4,49	47,17
Hydrochlorothiazide	41,7%	0,0%	2,63	22,37
Metformine	0,0%	0,0%		3,97
Nifédipine	4,2%	0,0%		22,60
Salbutamol inhaler	12,5%	0,0%		3,32

LA STRUCTURE DES PRIX

Une étape importante, lorsqu'on détermine comment diminuer les coûts des médicaments, est l'analyse des composantes des prix. Le prix final payé par les pouvoirs publics ou les patients reflète le prix du fabricant, et de plus tous les rajouts successifs au prix. Ces rajouts comprennent le coût de l'importation, de la distribution et la dispensation des médicaments.

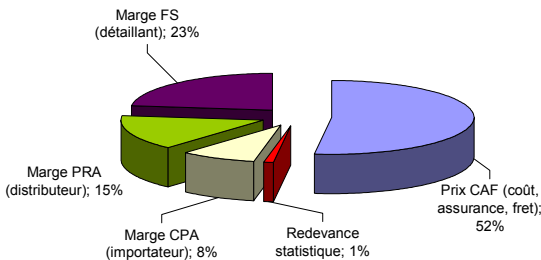
Dans le secteur privé au Tchad, officiellement le prix CAF (coût, assurance, fret) représente 59% du prix au patient et les marges des grossistes et des détaillants respectivement 13% et 23%; les droits de douane, le BIVAC (taxe de vérification des importations) et la redevance statistique représentent ensemble 5% du prix final au patient.

Proportions des rajouts dans le prix au patient pour un médicament générique dans le secteur privé



La marge cumulée sur le prix d'achat des médicaments dans le secteur public est plus importante que dans le secteur privé même si ce secteur est exonéré de deux taxes – le BIVAC et les droits de douane. La marge partagée par l'importateur, les distributeurs et les détaillants représente 47% du prix final.

Proportions des rajouts dans le prix au patient pour un médicament générique dans le secteur public



Les résultats de l'enquête montrent que cette structure des prix n'est respectée dans aucun secteur. Ainsi, le rapport entre les prix d'achat et les prix payés par le patient dans le secteur public est de 309% pour le générique le moins cher, alors que suivant les taux de marge fixés, ce rapport aurait dû être de 192,27%. Dans le secteur confessionnel, ce rapport est de 303%. Dans le secteur privé les prix constatés par l'enquête sont de 15% à 20% supérieurs aux calculs théoriques.

ANALYSE

Les résultats principaux sont repris et analyses ci-dessous.

ACCES AUX MEDICAMENTS

Le niveau élevé des prix dans un contexte de faible pouvoir d'achat limite l'accessibilité financière de la majorité de la population aux médicaments.

La comparaison des coûts des traitements standards avec le salaire journalier minimum du secteur public montre le poids que ces coûts représentent pour les personnes à faible revenu. Ceci incite certains patients à utiliser le marché illicite pour s'approvisionner en médicaments.

Plusieurs médicaments ont des prix variables dans les différents sites visités des trois secteurs – certains patients paient beaucoup plus cher leurs traitements que ce qu'ils auraient payé dans d'autres points de vente de médicaments.

Nombreux médicaments essentiels étaient peu disponibles dans le secteur public et les médicaments princeps correspondants du secteur privé coûtaient plus de 6 fois plus cher.

SECTEUR PUBLIC

Le secteur public bénéficie de prix d'achat concurrentiels, mais les prix payés par les patients restent élevés.

La comparaison de la variation des prix par produit entre formations sanitaires montre que l'arrêté sur l'harmonisation des prix n'est pas complètement respecté.

Les supervisions insuffisantes et le manque de moyens pour l'inspection pharmaceutique sont en partie responsables de cette situation.

SECTEUR PRIVE

Le nombre limité de médicaments génériques disponibles dans le secteur privé est vendu dans les points de vente à un prix très élevé.

Les prix des médicaments princeps sont très élevés et incompatibles avec le pouvoir d'achat de la majorité de la population.

Les prix libres au Tchad ne favorisent pas la concurrence et par conséquent la baisse des prix.

SECTEUR CONFESIONNEL

Des prix légèrement inférieurs ont été constatés dans le secteur confessionnel. Les formations sanitaires confessionnelles s'approvisionnent à la CPA ou importent directement leurs produits. Les marges pratiquées dans ces formations sanitaires servent à la prise en charge du personnel.

RECOMMANDATIONS DU RAPPORT PRINCIPAL

- Analyser l'efficacité, l'intégrité, la compétitivité du système public de distribution des médicaments et intervenir pour corriger.
- Ouvrir la CPA au secteur privé.
- Instaurer des incitations à la substitution par les génériques à tous les niveaux. Promouvoir l'acceptation des génériques par les professionnels et les patients.
- Instaurer un contrôle des prix des médicaments pour réduire les variations entre les différents points de vente.
- Encourager le financement prépayé et en commun des médicaments: par exemple à travers un système d'assurance fondé sur l'emploi ou la sécurité sociale.
- Promouvoir les initiatives d'assurance de santé communautaires basées sur l'amélioration de l'accès aux médicaments essentiels.
- Surveiller les prix et l'accès aux médicaments.
- Plaidoyer pour une fixation différenciée des prix.
- Favoriser à travers la politique pharmaceutique nationale l'utilisation des génériques dans le secteur privé.
- Introduire une politique visant à diminuer les taxes, les droits et les marges commerciales qui sont élevés et contribuent à une réduire l'accessibilité des médicaments pour la majorité de la population.
- Mesurer l'impact des changements politiques par des enquêtes régulières sur les prix des médicaments.

REMERCIEMENTS

Cette étude a été réalisée par le Responsable de l'enquête Dr Zarana Bandiang et l'équipe de la Direction de la Pharmacie, du Médicament et des Laboratoires, Ministère de la Santé Publique, avec l'appui du Dr Simona Chorliet, consultant de l'Organisation Mondiale de la Santé. L'étude a été financée par l'Organisation Mondiale de la Santé. Le Ministère de la Santé Publique remercie dans la version complète du rapport le comité consultatif composé par : Dr Kanika Djam Nargaye, Directeur Général des Activités Sanitaires ; Dr Ahmat Ali Hissein, Directeur de la Pharmacie, du Médicament et des Laboratoires ; Dr Brahim Hamit, Directeur des Services Régionaux ; Dr Boysinda Daniel, Conseiller Médicaments Essentiels OMS Tchad ; Dr Salim Hassan, Directeur de la Centrale Pharmaceutique d'Achats ; Dr Marie Paule Fargier, Assistante Technique Projet Santé 8ème FED ; Dr Bambi Lamtoun, Directeur Adjoint de la DSPLM, MSP ; M. Gartelbaye Morbé, Economiste de la Santé, OMS Tchad ; Dr Batakao Grégoire, Médecin de Santé Publique, OMS Tchad.

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MEDICINE PRICES IN UGANDA

MEASURING MEDICINE PRICES

One-third of the global population lacks reliable access to needed medicines. The high price of medicines is a key factor in their inaccessibility. High prices are particularly burdensome to patients in developing countries where most medicines are paid for out-of-pocket by individual patients; in Sub Saharan Africa out-of-pocket expenditure constitute 34% of health expenditure (WHO 2002).

In September 2004, the Ugandan Ministry of Health was supported by the World Health Organisation (WHO), Health Action International-Africa (HAI-A) and the HAI-A partner in Uganda, Health Promotion for Social Development (HEPS), to carry out a national survey of medicine prices. The survey was conducted in the public, private and NGO sectors. Using the WHO/HAI methodology: *Medicine Prices: a new approach to measurement*¹, the Ministry assessed the affordability of key medicines, analyzed the prices and availability of a selected key medicines, and identified price components (taxes, mark-ups etc.) of locally produced and imported medicines. The evidence obtained was used to determine factors contributing to high and variable medicine prices and identify strategies and policies to improve their affordability and availability in all the three sectors. This is one of a series of papers summarizing the results of medicine price surveys carried out by countries across Africa and elsewhere in the world.

BACKGROUND - UGANDA

Uganda is classified as a low income country by the World Bank with a per capita GDP of US\$271 (2000). Per capita public health spending was US\$12 (MoH statistical annex 2002); per capita public sector medicines expenditure is estimated at US\$1.6 (2004/5) with an estimated medicines expenditure need of US\$3.5 excluding the pentavalent vaccines and antiretroviral medicines which are mainly funded by donors.

Since 1972, the number of public, non-governmental and private health facilities has increased by 400 percent and the population has more than doubled. In spite of this, a 1993 inventory of health units found that geographical access to health care is limited to 49 percent of the population, i.e. population living within 5 kilometres (about one hour's walking distance) of a health facility providing both curative and preventive health services (World Bank quoting Ministry of Health). Rural communities are particularly affected because health facilities are mostly located in urban centres. There are 12 regional referral hospitals (which also act as District Hospitals in the areas where they are located) and 2 national referral hospitals (Mulago and Butabika). Mulago and Mbarara Hospitals also act as University Teaching Hospitals. The public and mission sector provides health care to around 60% and 40% of the population respectively.

Currently there are 5 large-scale pharmaceutical manufacturers and 5 small-scale pharmaceutical manufacturers. There are 2939 public health facilities from which drugs may be dispensed, 215 private pharmacies and 2600 drug shops. Of the private pharmacies, nearly 80% are in the three major towns of Kampala, Jinja and Mbarara.

Medicine budgets have been decentralized, with guidelines to protect them at all service delivery levels. However, demand for essential medicines far exceeds supply, not least because of the rapid increase in service utilization following the abolition of cost sharing in 2001. Additional funding and a policy recommendation to dedicate 50% of the non-wage budget to essential medicine at the lower levels of care have not been enough to stem high stock-out rates which compromise the quality of care.

The majority of the medicines and equipment for government health units are obtained from National Medical Stores (NMS). The main source of funding for drugs is the poverty alleviation funds sent to the district under primary health care. Only when drugs and equipment are out of stock, can these units source elsewhere. The missionary hospitals source their drugs and health supplies from Joint Medical Stores (JMS) which is also partly supported by the government.

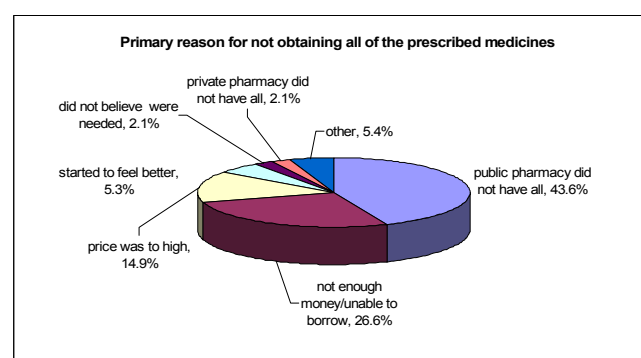
Government health facilities can only go to other sources when the drugs are out of stock from both NMS and JMS.

Medicines are provided free of charge in public health facilities and are charged for in the mission sector.

The importation, registration and quality control of medicines is regulated by the National Drug Authority (NDA).

A household survey carried out in 2002² found that that for a majority of Ugandans, the first consultation when they are sick is done at the clinic or hospital in the public health care facilities or private sector.

The chart below illustrates that in 87% occasions when medicines were not obtained that price and/or availability of medicines was a factor.



MEDICINES, AREAS AND SECTORS SURVEYED

The medicines surveyed included a standardized core group of 30 medicines that were surveyed in all countries and a supplementary group of up to 20 medicines specific to Uganda. The core group was selected based on global burden of disease, availability of standard formulations and importance. Medicines in the supplementary group were selected because of the importance and/or the frequency of their use in treating important common health problems in Uganda. Both medicines on and off patent and on and off the national essential medicines list were represented.

In all, 45 medicines were surveyed in 4 regions in Uganda: Kampala District; and Eastern; Northern; and Western regions.

Areas measured in each sector	Public facilities	Private outlets	NGO facilities
Affordability to patients	✓	✓	✓
Procurement price	✓		✓
Price to patients		✓	✓
Availability to patients	✓	✓	✓

PRESENTATION OF PRICE INFORMATION

The WHO/HAI survey methodology presents prices as median price ratios (MPR). The MPR is the ratio of the local price divided by an international reference price converted into the same currency. As such, the reference price serves as an external standard for evaluating local prices. An MPR of 1 means the local price is equivalent to the reference price whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the 2003 *Management Sciences for Health (MSH) International Drug Price Indicator Guide* (<http://erc.msh.org/>). The MSH guide pulls together information from recent price lists of large, non-profit generic medicine suppliers and thus reflects the prices governments could be expected to pay for medicines. Patient prices can be expected to be higher than the prices paid by governments, but these surcharges should be minimal and relatively consistent across medicines and facilities.

¹ <http://www.haiweb.org/medicineprices/>

² Uganda Pharmaceutical Sector Baseline Survey, MoH, 2002

INTERPRETATION OF FINDINGS

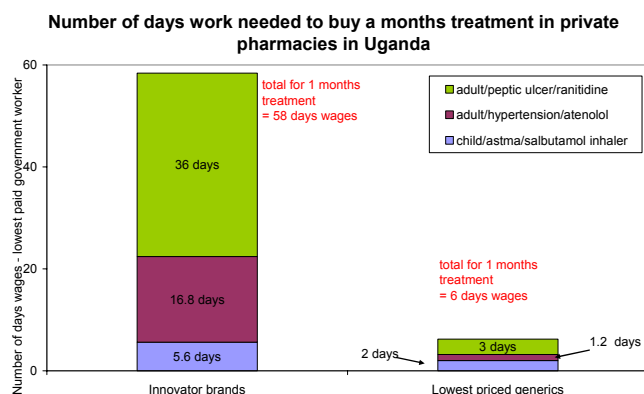
Where survey findings point to the high cost or poor availability of a few specific medicines, they are named in this paper. However, these are unlikely to be isolated incidents. As only around 50 medicines were included in this survey, a finding of high prices or low availability of even 3 or 4 medicines – or 6% to 8% of those studied – could indicate a greater problem and requires further investigation.

AFFORDABILITY TO PATIENTS

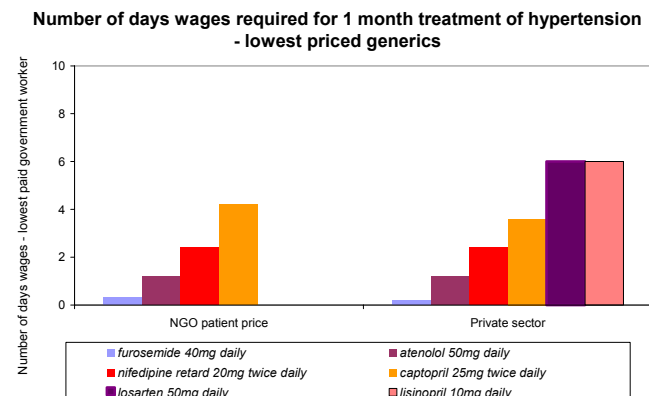
In this paper, affordability is calculated in terms of the number of days the lowest paid unskilled government worker would have to work to pay for one treatment course for an acute condition or one month's treatment for a chronic condition. At the time of the survey, the lowest paid unskilled government worker earned Ugandan Shillings 2,500 (US\$1.31) per day. 38% of Ugandans live under the poverty line. Hence a large proportion of Ugandans are worse off than the lowest paid government worker and consequently the affordability for many Ugandans will be lower than what is presented for this worker.

Overall, medicines were found to be unaffordable to a large proportion of the population; purchasing treatments for chronic conditions was found to require many more days' work than purchasing treatments for acute conditions.

The burden is especially great for a family needing treatment for several conditions at the same time, e.g. using the lowest priced generic medicines, it would take at least 6 days' wages for the lowest paid unskilled government worker to purchase a medicines for a child with asthma, an adult with hypertension and an adult with a peptic ulcer³; treatment with innovator brand medicines would require 58 days salary for a months treatment – clearly unaffordable in both cases. The chart below presents the breakdown for each of the medicines in innovator and generic forms



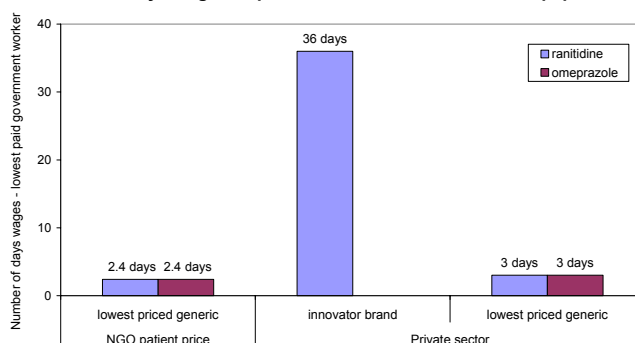
It was found that there are significant differences in affordability between medicines within a therapeutic category. The chart below illustrates these differences for six lowest priced generics used for treatment of hypertension – monotherapy – if more than one drug is used, the numbers shown are additive. Where medicines are available in more than one sector, the patient prices are relatively similar; there being much greater differences between therapeutic choices and/or antihypertensive class.



³ Number of days wages for lowest paid government worker to buy 1 months of medicines. This family has the following medicines requirements each month: 1 salbutamol inhaler for a child with asthma; infection; 30 atenolol tablets 50mg for an adult with hypertension; 60 ranitidine tablets 150mg for 1 adult with peptic ulcer

Treatment of peptic ulcers requires at least two and a half days salary for omeprazole or generic ranitidine necessary for a month's treatment. An additional 5 hours salary would be required to purchase from the private sector rather than the NGO sector. Whilst medicines are provided free of charge in the public sector neither medicine was widely found despite ranitidine being found at National Medical Stores. If innovator brand ranitidine was prescribed, recommended, dispensed or sold, 36 days salary would be necessary to purchase a months course – an additional 33 days work.

Number of days wages required for 1 month treatment of a peptic ulcer



The price of medicines is a key aspect of their affordability. In this survey, public procurement prices were assessed as were the prices charged to patients at public sector facilities, private retail pharmacies, and non-governmental facilities.

PUBLIC SECTOR PROCUREMENT PRICES

Public sector procurement prices for the lowest priced generic medicines were found to be 0.71 times the international reference prices. In other words, Uganda is procuring medicines at 29% less than the published international market prices of non-profit generic medicine suppliers.

Number of times more expensive: public procurement prices compared to international reference prices		
Price (MPR)	Innovator brand ⁴	Lowest priced generic ⁵
No. of medicines included in analysis	2	25
Median MPR	0.49	0.78
25 th percentile	0.28	0.67
75 th percentile	0.71	0.95

n= 45 medicines

Two medicines were procured at less than half the international reference price, and one was procured for more than 50% above the international reference price. Two innovator products were found, fluconazole as part of the Diflucan Donation Programme and salbutamol inhaler. The prices of these four products are listed in the table below.

Number of times more expensive: public procurement prices compared to international reference prices – lowest priced generics	
atenolol (generic)	2.51
chloroquine (generic)	0.46
fluconazole (innovator) ⁶	0.06
ketoconazole (generic)	0.35
salbutamol inhaler (innovator)	0.92

Two medicines on the essential drugs list were not found at the national medical stores: diclofenac 25mg and nifedipine retard 20mg.

⁴ Innovator brands are not generally procured for use in the public sector

⁵ The lowest priced generic equivalent was determined facility-by-facility and was the lowest priced generic equivalent product available for sale at each facility included in the survey. In determining public procurement prices, the lowest priced generic at the national medical store or on the national tender document was used.

⁶ The innovator fluconazole product was valued so as to be able to calculate and charge a handling fee at the National Medical Stores

PUBLIC SECTOR FACILITIES

Medicines are provided free of charge in Uganda.

28 of the 45 medicines studied were on the essential drug list of Uganda; the median availability of those medicines on the essential drugs list was found to be 55% (n=20 facilities). It should be noted that from within these 28, some of the medicines would only be expected to be at the referral and district hospital level and not at some of the lower level facilities that were surveyed.

Every facility was found to stock both chloroquine and sulphadoxine pyrimethamine, and no facility was found to stock salbutamol inhaler, which was in available at the National Medical Store.

PRIVATE SECTOR PATIENT PRICES

Out of the 45 medicines surveyed, innovator brand products were found for 17 of them in private retail pharmacies.

At private retail pharmacies, patient prices for the lowest priced generics were found to be 2.6 times the international reference price. The prices charged to patients for the lowest priced generic medicines ranged from 0.28 times the international reference price for losartan to 16.09 times the international reference price for albendazole.

For innovator brands, patient prices were found to be 13.6 times the international reference price. The prices charged to patients for the innovator brand medicines ranged from 1.68 times the international reference price for artemether to 118 times the international reference price for albendazole.

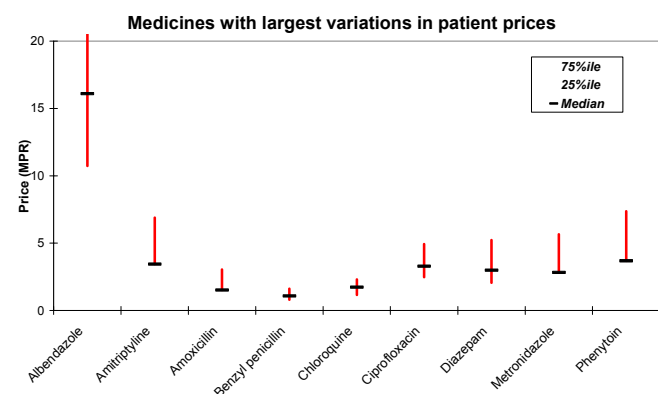
Number of times more expensive: patient prices for medicines at private retail pharmacies compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	11	38
Median MPR	13.6	2.6
25 th percentile	7.5	1.7
75 th percentile	25.6	3.6

n= 20 facilities; 45 medicines

Availability at private retail pharmacies	Innovator brand	Lowest priced generic
Median availability	0	80
25 th percentile	0	50
75 th percentile	15	90

n= 20 facilities; 45 medicines

In the private sector, the prices charged for medicines varied from pharmacy to pharmacy. In some cases, the prices varied by many multiples. The lowest priced generics medicines with the greatest variation in price are shown below.



The following table shows those generic medicines for which patients at private retail pharmacies are charged at least fifteen times published international prices for the lowest priced generic and/or innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

Number of times more expensive: patient prices for medicines at private retail pharmacies compared to international reference prices			
Medicine	Lowest priced generic (LPG)	Innovator brand (IB)	Number of times more expensive IB: LPG
albendazole	16.1	118.0	7.3
amoxicillin	1.5	15.2	10.1
atenolol	5.6	78.2	14.0
carbamazepine	2.6	19.7	7.6
fluconazole 200mg	13.0		
fluconazole 150mg	13.1		
glibenclamide	6.38		
ranitidine	2.6	31.5	12.1
sulfadoxine-pyrimethamine	3.4	13.6	4.0

n= 20 facilities

When comparing the price difference between innovator brand medicines and lowest priced generic medicines matched pairs of medicines where the same medicines were found in both groups, innovator brands were found to be 5.2 times more expensive than the lowest priced generic (n=11 medicines). The table below shows the differential between the price patients at private retail pharmacies are charged for the innovator brand and the lowest priced generic equivalent for the six medicines with the greatest differences. It can be seen that some of the innovator brands were widely available (i.e. in 1 or 5 pharmacies or more, up to 80%) and hence likely to have a noteworthy market-share, despite having a high brand premium to the price.

For sulphadoxine-pyrimethamine, the innovator brand was found in 80% of pharmacies and was four times more expensive than the lowest priced generic; at the time of the survey there were 24 generic products being registered in Uganda.

Patient prices and availability at private retail pharmacies for innovator brands compared to lowest priced generic equivalents			
Number of times more expensive innovator brand: lowest priced generic		Availability	
		Innovator brand	Generic
albendazole	7.3	60%	100%
amoxicillin	10.1	25%	100%
atenolol	14.0	25%	60%
carbamazepine	7.6	20%	80%
ranitidine	12.1	20%	80%
sulfadoxine-pyrimethamine	4.0	80%	100%

n= 20 facilities

The study included all first line HAART⁷ medicines. Three of the six medicines were found in a single retail pharmacy in Kampala.

NON-GOVERNMENTAL SECTOR PROCUREMENT PRICES

NGO sector procurement prices for the lowest priced generic medicines were found to be 0.87 times international reference prices. In other words, procurement is 13% less than the published international market prices of non-profit generic medicine suppliers.

Number of times more expensive: NGO procurement prices compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included in analysis	1	29
Median MPR	1.04	0.87
25 th percentile		0.73
75 th percentile		1.01

n= 45 medicines

One medicine was procured at less than half the international reference price and two were procured for more than 50% above the international reference price. one innovator product was found, salbutamol inhaler. These prices of these four products are listed in the table below.

Number of times more expensive: NGO procurement prices compared to international reference prices – lowest priced generics	
albendazole (generic)	4.31
atenolol (generic)	1.97
omeprazole (generic)	0.25
salbutamol (innovator brand)	0.74

NON-GOVERNMENTAL SECTOR PATIENT PRICES

In the non-governmental sector, the price charged to patients for lowest priced generics was found to be 2.69 times the international reference price. Patient prices ranged from 0.53 times the international reference price for omeprazole to 12.34 times the international reference price for albendazole. No innovator brands were found.

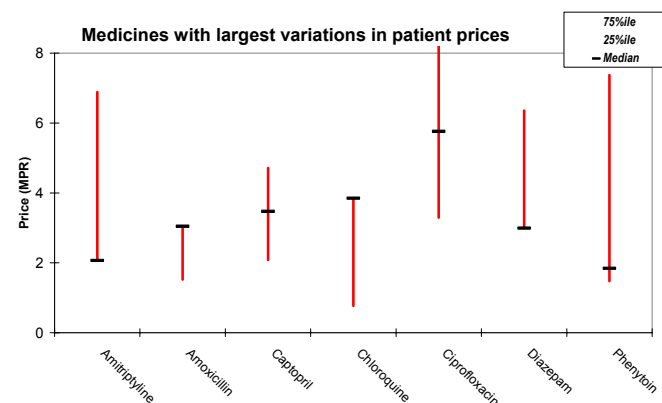
Number of times more expensive: patient prices for medicines at non-governmental facilities compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	0	29
Median MPR		2.69
25 th percentile		2.07
75 th percentile		3.47

n= 20 facilities; 45 medicines

Availability at non-governmental facilities	Innovator brand	Lowest priced generic
Median availability	0	45
25 th percentile	0	15
75 th percentile	0	75

n= 20 facilities; 45 medicines

In non-governmental facilities, the prices patients were charged for medicines varied from facility to facility for some medicines. Those lowest priced generics with the greatest variation in price are shown below.



The following table shows those generic medicines for which patients at NGO facilities are charged at least five times published international

prices for the lowest priced generic and/or innovator brand. A difference of five times or more between the international reference price and the price charged to patients makes these medicines seem particularly expensive than what could be available or achieved.

Number of times more expensive: patient prices for medicines at NGO facilities compared to international reference prices	
Medicine	Lowest priced generic (MPR)
albendazole	12.34
atenolol	5.63
ciprofloxacin	5.76
glibenclamide	6.38
sulphadoxine=pyrimethamine	6.11

INTER-SECTORAL COMPARISONS

The table below compares the prices of lowest priced generics between sectors where the same medicines were found in both sectors.

For lowest priced generics:	Were this many times more expensive:	Than:
NGO patient prices (n= 27 medicines)	3.2	NGO procurement prices
NGO procurement prices (n= 25 medicines)	1.2	Public sector procurement prices
Private retail patient prices (n=29 medicines)	1.0	NGO patient prices

While NGO sector procurement prices were 20% more than for public sector procurement prices for lowest priced the NGO sector procurement price of some medicines was as much as 4.4 times the public procurement price; in a number of instances due to JMS stocking blister packaged medicines whereas NMS stocked bulk containers.

Number of times more expensive: NGO sector procurement prices compared to public sector procurement prices (lowest priced generic)	
carbamazepine	1.8
ceftriaxone	1.5
chloroquine	2.2
cotrimoxazole	1.5
ketoconazole	1.8
Metformin	0.71 (JMS had lower price)
rifampicin + isoniazid	4.4

Patient prices in the private sector were generally the same as those in the NGO sector; the table below shows that some were the same price and some were more expensive in the private sector and some were more expensive in the NGO sector.

Number of medicines where NGO prices were	
same as private sector prices	9
less expensive than the private sector prices	9
more expensive than the private sector prices	11

n= 20 facilities; 29 medicines

69% of medicines were the same or more expensive in NGO facilities than in the private sector; 40% were more expensive in the NGO sector. The table below lists those medicines which were more expensive in the NGO sector than the private sector.

Number of times more expensive in NGO than in private sector	
amoxicillin	2.0
benzyl penicillin	2.5
captopril	1.2
cephalexin	1.1
chloroquine	2.2
ciprofloxacin	1.8
co-trimoxazole	2.0
co-trimoxazole suspension	1.2
furosemide	1.3
metronidazole	1.5
sulfadoxine-pyrimethamine	1.8

The table below examines where patient prices are perhaps more expensive than is necessary.

Number of times mark-up above median mark-up NGO patient price: NGO procurement price ⁸		
For those items where NGO prices were	Number of times mark-up greater than median	Out of (number of medicines)
same as private sector prices	2	9
less expensive than the private sector prices	6	9
more expensive than the private sector prices	3	11

The mark-up was greater than the median for the majority of the medicines where the NGO prices were already at or below the private sector price – perhaps cross-subsidizing other medicine prices or services; prices could be potentially be lower for these items.

For five out the eleven medicines where the NGO patient was more expensive than the private sector price, the mark-ups were below the median value, perhaps indicating the cross-subsidy mentioned above and/or that the JMS price was higher than it could be and perhaps higher than the private sector prices; for each of the five medicines JMS was procuring at between 17% and 127% more than NMS. The five medicines are amoxicillin; benzyl penicillin; chloroquine; and cotrimoxazole tablets and suspension.

Patients need medicines to not only be affordable, but also available. The table below presents the availability across all sectors for those medicines on the national essential drugs list with less than 50% availability⁹.

% Availability	Public sector facilities (n=20)	Private retail pharmacies (n=20)	NGO sector (n=20)
Amitriptyline	15%	75%	60%
Atenolol	10%	60%	40%
Betamethasone Cream	10%	85%	15%
Captopril	20%	75%	50%
Carbamazepine	40%	80%	45%
Cephalexin	0%	50%	20%
Co-trimoxazole suspension	15%	80%	40%
Fluconazole 200mg	15% ¹⁰	45%	0%
Glibenclamide	25%	85%	60%
Metformin	25%	85%	50%
Omeprazole	0%	95%	45%
Ranitidine	5%	80%	30%
Salbutamol inhaler	0%	95%	10%

Atenolol, fluconazole 200mg and glibenclamide are medicines which were not widely found in the public sector and previously identified in this paper as being apparently more expensive than what could be achieved in the private and/or NGO sector; atenolol is also procured at higher than expected prices by both the public and mission sector procurement systems.

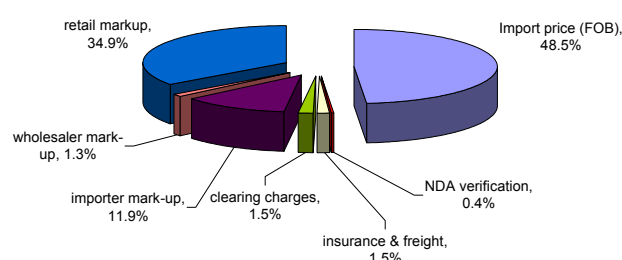
PRICE COMPONENTS

Examining the components that make up the price of medicines is an important step in determining how to reduce their cost. The final price paid for a medicine whether by the government or a patient reflects the manufacturers selling price plus all the intervening price additions. These additions include the cost of importing, distributing and dispensing the medicine.

In the private sector for a branded medicine, the import price represents around 48% of the final patient price, with the other major contributors to the final price being the retail mark-up contributing of around 35% of the final price and the importer mark-up contributing 12%.

The following two charts present these two situations graphically.

Typical proportions of add-ons of final patient price for an innovator brand product in the private retail pharmacy



RECOMMENDATIONS FROM COUNTRY REPORT AND STAKEHOLDER MEETING

A summary of the recommendations is provided below, for a fuller explanation see the full survey report:

Develop a medicines pricing policy and monitor its implementation; potential aspects of the policy could include price/margin control and reference pricing.

Develop mechanisms and approaches to disseminate price information to the public on a regular basis.

Develop a policy on generic prescribing and substitution, for all sectors

Promote the use of generics to health professional and the public, including assurances on quality issues. Civil Society Organizations to sensitize communities through sensitization and education

Promote adherence to the national standard treatment guidelines

Advocate on price issues as a barrier to access to medicines at the national and sub-regional (East African Community) levels

Strengthen the demand driven ordering system in the public sector to improve availability and efficiency

Strengthen National Medical Store's management information

Reinforce training in drug quantification at all levels.

Investigate why some essential medicines such as salbutamol inhaler are found at the National Medical Stores but not available at the lower level facilities

Explore the possibilities of a pooled procurement system for the two procurement agencies (JMS and NMS) especially for medicines which are being purchased at greater than the international reference price

Conduct a specific study on the availability and prices of ARVs in the three sectors.

Expedite accreditation mechanism thereby ensuring that more private pharmacies that supply ARVs

Facilitate the fast-track registration by the National Drug Authority of essential generic medicines where few are registered to encourage generic competition

⁸ NGO patient prices are 3.2 times more expensive than NGO procurement prices

⁹ the low availability in the public sector could be because some of the medicines are only intended to be at referral centres and not at some of the lower levels of care which were included in the survey

¹⁰ innovator brand availability as part of a donation programme

ANALYSIS

Below is a further analysis of the findings presented in this paper.

AFFORDABILITY AND ACCESS TO MEDICINES

"Out-of-pocket" purchase of most medicines from the private and NGO sectors is not affordable to the majority of the population.

Consideration of price in the choice of medicines could determine whether a patient can obtain a medicine for treatment, or not.

Some medicines seem to be at higher prices than others and than they could be when compared to the international reference price.

There was marked price variation for some medicines within the private and NGO sectors - some patients are paying much more than they would be in other facilities or pharmacies.

Some key medicines which were not widely available at all in the public sector were apparently more expensive than need be in the private and NGO sectors.

It appears that prices in the NGO sectors for some medicines are perhaps set at a potentially higher otherwise as the final price is the same or more as the private sector and at the same time are apparently marked-up more than average from the available JMS procurement price.

Medicines prices in the NGO sector are very similar to medicines prices in the private retail pharmacy sector; NGO facilities being largely in the rural areas and retail pharmacies being largely in the urban areas. NGO facilities in the rural areas are therefore offering a service, in terms of price, almost equivalent to the private pharmacies in the urban areas despite being subsidized by government.

Drugs shops were not included in the study, which together with the public and NGO facilities are important suppliers of medicines to patients in the rural areas; an evaluation of their actual and potential role in the supply of medicines, including pricing of medicines could be very informative.

Some key essential medicines including atenolol, fluconazole 200mg and glibenclamide were not widely found in the public sector and were apparently more expensive than what could be achieved in the private and/or NGO sector.

PUBLIC SECTOR

The public sector procurement system is paying more than might be necessary for a small proportion of medicines.

Some key essential medicines were not widely found in the public sector; there is room for improvement in the availability of medicines for the patient in the public sector.

PRIVATE SECTOR

Some branded medicines were widely available and hence were likely to have noteworthy market share despite having a high brand premium compared to the generic equivalent

NGO SECTOR

Availability in the NGO sector was generally greater than in the public sector.

Prices in NGO facilities were similar to that of the private retail pharmacies.

Most medicines were the same or more expensive in NGO facilities than in private sector pharmacies;

The NGO sector procurement system is paying more than might be necessary for a small proportion of medicines.

A small number of medicines were markedly cheaper at the national medical stores compared to Joint Medical Stores

ACKNOWLEDGEMENTS

The survey was carried out by the Ministry of Health in collaboration with and funded by the World Health Organisation, Health Action International-Africa and Health Action International's partner in Uganda, Health Promotion for Social Development (HEPS). Technical support in the ministry was provided by the Director General of Health Services, Prof G Omaswa and the Principal Pharmacist, Mr M Oteba. The Ministry of health also acknowledges the technical support from the World Health Organization (HQ) provided by the Coordinator Drug Action Programme, WHO Department of Technical Cooperation for Essential Drugs and Traditional Medicines in Geneva M, Dr G Forte, Technical Officer at the WHO Regional Office for Africa, Mr. A. Desta and the consultant for Health Action International Africa, Mr Martin Auton. Thanks are extended to the WHO Country office team most especially the medicines advisor, Mr Joseph Serutoke.

The Ministry of Health also acknowledges with thanks the input of the 16 data collectors coordinated by Mr Patrick Mubangizi, the survey manager.

FURTHER INFORMATION

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MEDICINE PRICES IN THE EAST AFRICAN COMMUNITY

EAST AFRICAN COMMUNITY (EAC)

Established in 1999, the East African Community is the regional intergovernmental organization of the Republics of Kenya, Uganda and Tanzania. EAC countries have a combined population of 82 million and an area of 1.8 million square kilometres. The EAC five-year Development Strategy focuses on economic co-operation and development, in which the private sector and civil society, in partnership with the public sector, have a central role. This strategy, together with commonalities in the three countries' development and infrastructure, provides the EAC Partner States with a unique framework for regional co-operation and integration.

MEASURING MEDICINE PRICES

One-third of the global population lacks reliable access to needed medicines. The high price of medicines and weak medicines supplies systems are a key factor in their inaccessibility. High prices are particularly burdensome to patients in developing countries where most medicines are paid for out-of-pocket by individual patients.

Between April and November 2004 the ministries of health of the 3 East African Community countries as well as 5 other African countries were supported by the World Health Organisation (WHO) and Health Action International (HAI) to carry out national surveys of medicine prices. These surveys were conducted in public sector facilities, private retail pharmacies and, as appropriate to the country situation, mission/NGO facilities, the dispensing doctor sector, and/or private hospitals. Using the WHO/HAI methodology: *Medicine Prices: a new approach to measurement*¹, the countries assessed the affordability of key medicines, analysed the prices and availability of a selection of important medicines, and identified price components (taxes, mark-ups etc.) of locally produced and imported medicines. The evidence obtained was used to determine factors contributing to high and variable medicine prices and identify strategies and policies to improve their affordability. This is one of a series of papers summarizing the results of these surveys.

SECTORS AND MEDICINES SURVEYED

The medicines surveyed included a standardised core group of up to 30 medicines that were surveyed in all countries and a supplementary group of up to 20 medicines selected individually by each country. The core group was selected based on global burden of disease, availability of standard formulations and their importance. Medicines in the supplementary group were selected because of the importance and/or frequency of their use in treating important common health problems in the applicable country. Both medicines on and off patent and on and off the national essential medicines lists were represented.

To reduce the variables when comparing results across countries, the comparisons in this paper are confined to core group medicines except for a few instances where individual medicines from the supplementary group were surveyed in all three countries.

The table below describes the sectors and number of core medicines surveyed in the 3 East African Community countries.

Facilities surveyed					
Country	Public facilities	Private outlets	Mission/ NGO facilities	Number of core medicines surveyed ²	Month of survey
Kenya	✓	✓	✓	30	October 2004
Tanzania	✓	✓	✓	30	September 2004
Uganda	✓	✓	✓	25	April 2004

PRESENTATION OF PRICE INFORMATION

The WHO/HAI survey methodology presents prices as median price ratios (MPR). The MPR is the ratio of the local price divided by an international reference price converted into the same currency. As such, the reference price serves as an external standard for evaluating local prices. An MPR of 1 means the local price is equivalent to the reference price whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the *2003 Management Sciences for Health (MSH) International Drug Price Indicator Guide* (<http://erc.msh.org/>). The MSH Guide pulls together information from recent price lists of large, non-profit generic medicine suppliers and thus reflects the prices governments could be expected to pay for medicines. Patient prices can be expected to be higher than the prices paid by governments, but these surcharges should be minimal and relatively consistent across medicines and facilities.

INTERPRETATION OF FINDINGS

Where survey findings point to the high cost or poor availability of a few specific medicines, they are named in this paper. However, these are unlikely to be isolated incidents. As no more than 50 medicines were included in the surveys, a finding of high prices or low availability of even 3 or 4 medicines – or 6% to 8% of those studied – could indicate a greater problem and requires further investigation.

AFFORDABILITY

In this paper, affordability is calculated in terms of the number of days the lowest paid unskilled government worker would have to work to pay for one treatment course for an acute condition or one month's treatment for a chronic condition. At the time of the surveys the wages were as follows:

	Kenya	Tanzania	Uganda
Daily wage for lowest paid unskilled government worker	166 KSh.	1667 TSh.	2500 USh.
Equivalent to US dollar	2.04	1.56	1.31
% population under US\$1 per day ³	22.8%	48.5%	58.3%
% population under US\$2 per day	84.9%	72.5%	96.6%

¹ <http://www.haiweb.org/medicineprices/>

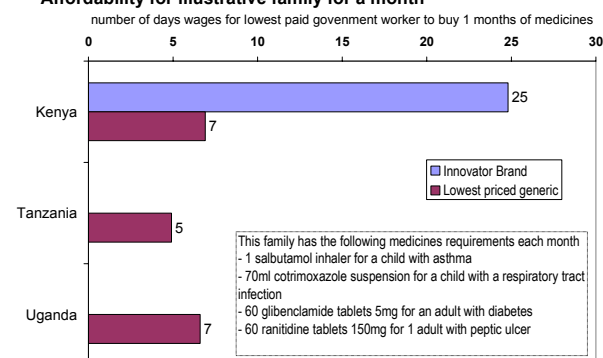
² Core medicines are not studied if the medicine is unavailable and/or not registered in the country; supplementary medicines not presented in this paper as part of the analysis of the basket of medicines
³ World Development Report 2005

From the table above it can be seen that the majority of the population in all countries are worse-off than the lowest paid Government worker.

Overall, purchasing treatments for chronic conditions was found to require many more days' work than purchasing treatments for acute conditions.

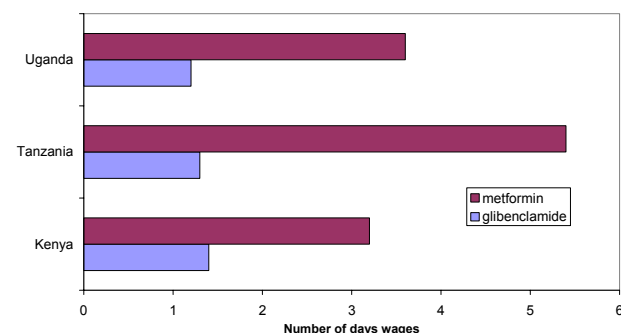
The burden is especially great for a family needing treatment for several conditions at the same time. For example the chart below illustrates the number of days wages or the lowest paid unskilled government worker to purchase a salbutamol inhaler for a child with asthma, a course of cotrimoxazole suspension for a child with a respiratory tract infection, glibenclamide tablets for an adult with diabetes and ranitidine tablets for an adult with a peptic ulcer. This varied from just under 5 days in Tanzania to around 7 days in Kenya and Uganda; the range of innovator brand medicines was only found in Kenya and those would take almost 25 days wages to purchase.

Affordability for illustrative family for a month



The surveys also found marked differences in affordability between medicines within a therapeutic category. The graph below demonstrates the affordability of two medicines for diabetes across the three countries. In each country, more than twice as many days are needed to be worked to purchase metformin compared to glibenclamide; the lowest paid unskilled Government worker would have to work four times longer in Tanzania – an additional four days each month.

Affordability of therapeutic choices for diabetes



While there may be clinical advantages of one treatment option over the other, for patients paying out-of-pocket and in particular when a medicine is not available in the public sector, patients may be unable to afford the preferred treatment.

The price of medicines is a key aspect of their affordability. In this survey, national public sector procurement prices were assessed as were the prices charged to patients at public sector facilities, private retail pharmacies, and non-governmental facilities.

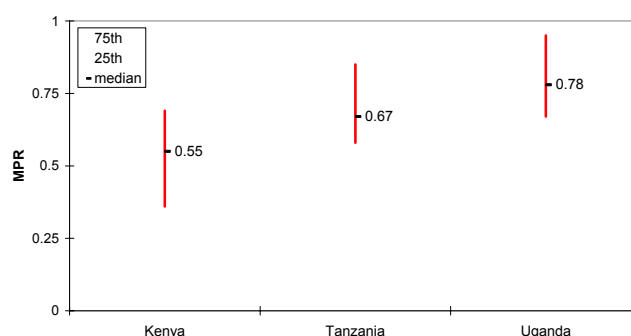
PUBLIC SECTOR PROCUREMENT PRICES

The public sector procurement prices for the lowest priced generic medicines for all countries were all less than the international reference price and are presented along with the 25th and 75th percentiles to demonstrate the median and the spread of the prices for the individual medicines. 0.55 meaning medicines, on average, are procured at 45% less than the published international market prices of non-profit generic medicine suppliers.

Innovator brand medicines were only found for 2 medicines in Uganda, one of them being part of a pharmaceutical company

donation programme and the other one procured at under the international reference price.

Public sector procurement price (MPR)



The majority of medicines in the 3 countries were generally all procured at below the international reference price, the lowest prices overall being achieved by Kenya. A few medicines were procured at higher prices and also there were some marked differences for the same medicines between the countries, even when they were procured below the international reference price. The table below presents the procurement medicines where there were the largest differences we found:

Price (MPR) [highest is in bold text]	Kenya	Tanzania	Uganda	Number of times more highest: lowest
Amitriptyline	0.27	0.62	0.66	2.4
Atenolol		1.29	2.51	1.9
Captopril	2.81	0.83		3.4
Ciprofloxacin		0.47	0.77	1.6
Diazepam	0.28	0.23	0.79	3.4
Metformin	1.3	0.9	0.7	1.9
Nifedipine retard	1.24	0.58	n/a	2.1
Sulphadoxine pyrimethamine	0.36	0.67	0.55	1.9

PUBLIC SECTOR PATIENT PRICES

Medicines were provided free of charge in the health facilities surveyed in Uganda; Kenya and Tanzania some of the facilities studied charged a fee that was not dependent on the individual medicine and others provided medicines free of charge or for a flat fee for inclusive of all treatment, tests and medicines. For Kenya and Tanzania, only where there was a price dependent on the medicine actually dispensed was the price used to assess public sector patient prices. The comparison below compares the availability across all three countries and the prices in Kenya and Tanzania.

The availability in public health facilities of the medicines on the applicable countries essential drugs list was found to be 65% for Kenya, 47% for Tanzania and 55% for Uganda.

At public sector facilities, patient prices for the lowest priced generic medicines were found to be 1.65 and 1.11 times the international reference prices for Kenya and Tanzania respectively.

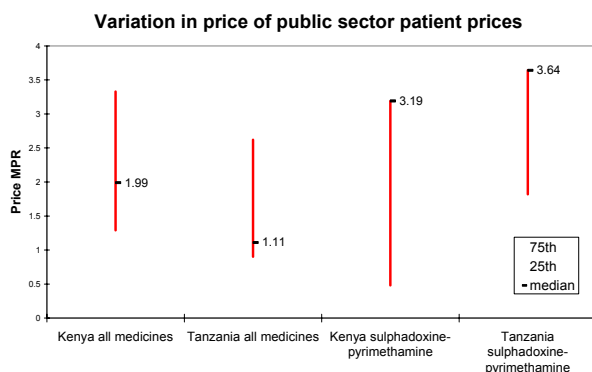
Only one innovator brand was found in Kenya, none were found in Tanzania or Uganda.

Number of times more expensive: patient prices for medicines at public health facilities compared to international reference prices		
Price (MPR) Lowest priced generic	Kenya n= 29 facilities	Tanzania n=21 facilities
No. of medicines included ^a	15	16
Median MPR	1.65	1.11
25th percentile	1.06	0.9

^a Patient prices were analyzed only in cases where at least 4 data points were available, i.e. price data were collected from at least four facilities.

75th percentile	2.72	2.62
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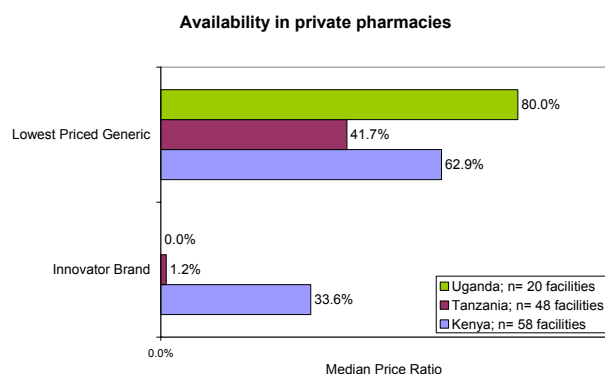
The prices patients are charged for medicines varied from facility to facility in the public sector in both countries, however around half of the medicines in Kenya showed no variation, whereas they all showed variation in Tanzania. In some cases, the prices varied by many multiples. The chart below demonstrates the price variation for an important anti-malarial, sulphadoxine-pyrimethamine compared with the variation for all medicines.



PRIVATE SECTOR PATIENT PRICES

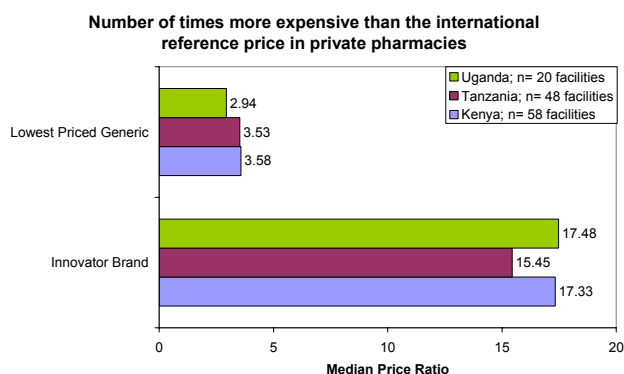
The private retail pharmacies in Kenya were the only ones that were found to stock a wide range of innovator brand medicines, while all countries stocked most of the medicines studied in generic form; these findings are shown in the table below and chart below which show the number of medicines found and their availabilities across the countries.

Number of medicines found in the private sector ⁵ in each country			
	Kenya	Tanzania	Uganda
No. of innovator brand medicines	23	2	6
No. of lowest priced generic medicines	27	21	21
Out of a maximum of the total number of. core medicines studied	30	30	25 ⁶



In private retail pharmacies, patient prices for innovator brands and lowest priced generics are presented in the chart below. Lowest priced generics were markedly less than innovator brands in all countries and

there was some variation of the prices of both between the countries.



Looking at Kenya, which was the only country where there was sufficient innovator brands found to make a valid comparison; innovator brands were on average 4.9 times more expensive than their generic equivalents (comparing only medicines which were found in both types).

For generics, patient prices in Kenya and Tanzania were on average more than 20% more expensive than in Uganda⁷.

INNOVATOR BRANDS (IB)

In Kenya, where the widest range of innovator brands was found, injections, antiretrovirals, hydrochlorothiazide and artesunate were the ones not found; antiretrovirals were also not found in Tanzania and Uganda. The limited range of medicines found in Tanzania and Uganda are listed in the tables below, which illustrate some examples of the price differences between innovator and lowest priced generic medicines, those medicines with the highest price compared to the international price and variation of the prices of innovator brands across the 3 countries. A number of the medicines in innovator brand form have very high multiples of the generic equivalent and multiples of the international prices; there are also some marked differences between the countries – e.g. the price of innovator brand amoxicillin is twice as expensive in Uganda than in Kenya.

Number of times more expensive, innovator brand: lowest priced generic in private pharmacies			
	Kenya	Tanzania	Uganda
Albendazole ⁸	5.6	5.0	7.33
Amoxicillin	4.0		10.0
Atenolol	8.5		14.0
Carbamazepine	7.3	4.0	7.5
Ranitidine	3.7		12.0
Salbutamol inhaler	1.6		2.8
Sulphadoxine-pyrimethamine	3.8	3.3	4.0

Innovator brand medicines with high prices compared to the international reference price			
Price (MPR)	Kenya	Tanzania	Uganda
Albendazole	118.0	98.8	95.0
Amoxicillin	7.15		15.22
Atenolol	67.5		78.8
Carbamazepine	17.9	18.8	19.7
Ciprofloxacin	140.0		
Ranitidine	18.3		31.5
Sulphadoxine-pyrimethamine	12.0	12.1	13.6

Malaria medicines policies have recently changed to Artemisinin-based Combination Therapies (ACT) in all three countries; however

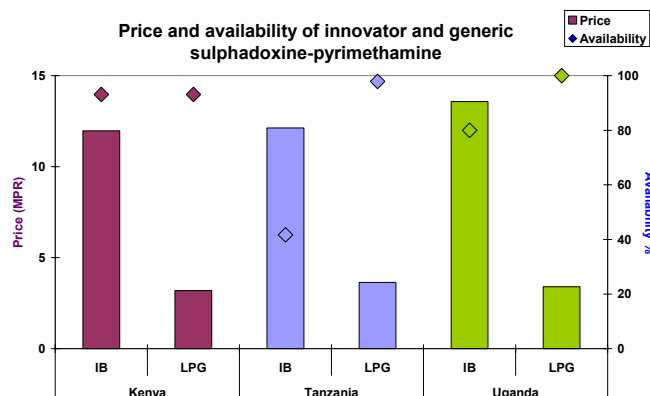
⁵ In a minimum of 4 outlets out of the core medicines studied – see page 1

⁶ 5 medicines were deleted from the core list as either not registered or widely found in Uganda

⁷ $p=0.04$ Uganda: Tanzania; $p=0.01$ Uganda: Kenya

⁸ not a "core list" medicine, but a supplementary medicine studied by the 3 countries

the progress of implementation to all levels of public and private health facilities is mixed and sulphadoxine-pyrimethamine still remains to be widely used. Innovator brand sulfadoxine-pyrimethamine was found to be almost as available as the lower priced generic versions - in 93%, 42% and 80% of retail pharmacies in the Kenya Tanzania and Uganda respectively. These levels of availability should indicate a noteworthy market-share, despite having high prices in terms of what is on the international market and a high brand premium of 3 to 4.0 times. The chart below presents information on the price and availability of branded and lowest priced generic sulphadoxine pyrimethamine in the 3 counties.



Another example is albendazole where the multiple between the innovator price and lowest priced generic was 5 to 7.3 times with availabilities of 78%, 46% and 60% respectively for Kenya, Tanzania and Uganda.

LOWEST PRICED GENERICS (LPG)

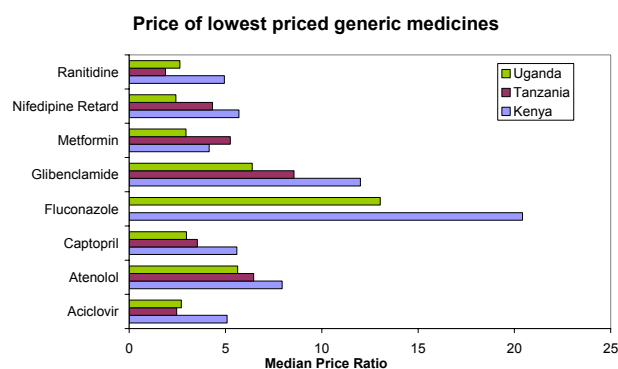
A larger number of generics were found in all countries compared to the innovator brands.

Of the medicines studied, those that weren't found in Kenya were the largely antiretroviral medicines; in Tanzania, beclometasone inhaler, hydrochlorothiazide and lovastatin; and in Uganda, it was the antiretroviral medicines; and other medicines where a different strength is more commonly used than listed on the core list.

At private sector outlets, patient prices for the lowest priced generic medicines were found to be 3.58, 3.53 and 2.94 times the international reference prices for Kenya, Uganda and Tanzania respectively.

Number of times more expensive: patient prices for medicines at private pharmacies compared to international reference prices			
Price (MPR) Lowest priced generic	Kenya n= 58 outlets	Tanzania n= 48 outlets	Uganda n= 20 outlets
No. of medicines included ⁹	27	21	21
Median MPR	3.58	3.53	2.94
25th percentile	1.78	1.31	2.05
75th percentile	5.43	4.33	3.44

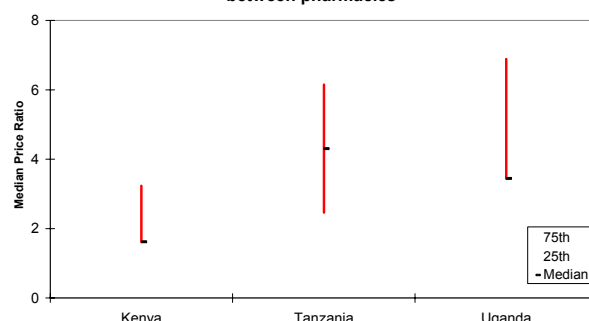
The tables in the previous section illustrate some examples of the price differences between innovator and lowest priced generic medicines; and the chart below illustrate where the lowest priced generics seem high compared to the international price and variation of the prices of the lowest priced generics across the 3 countries. A number of the medicines in generic form have high multiples of the generic equivalent and multiples of the international prices. There are also some marked differences between the countries, for example, the price of innovator brand amoxicillin is twice as expensive in Uganda than Kenya.



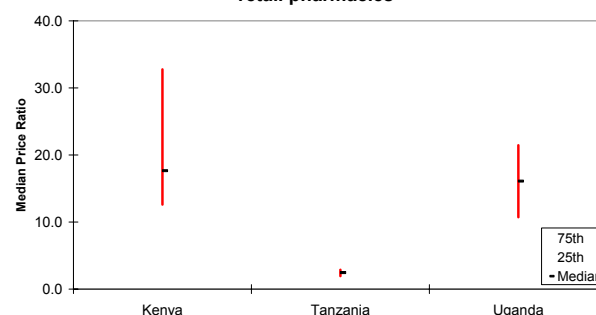
In all countries there is also marked variation in the private sector, in the prices patients are charged for medicines varied from pharmacy to pharmacy. In some cases, the prices varied by many multiples.

The charts below illustrate two examples, one where there is variation for all of the countries and the other where there is for two, but for the third, Tanzania, prices are quite consistent for that medicine between pharmacies.

Variation in the price of generic amitriptyline between pharmacies



Variation in the price of generic albendazole between retail pharmacies



NON-GOVERNMENTAL SECTOR

NGO SECTOR PROCUREMENT PRICES

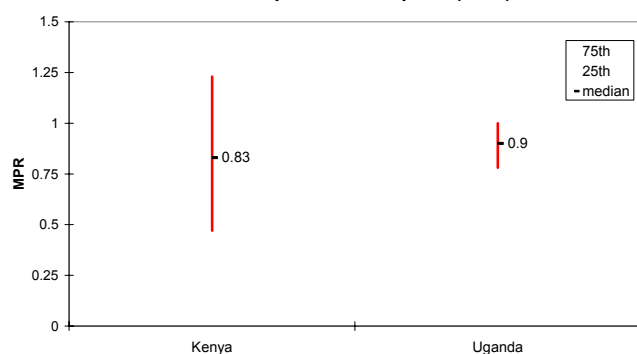
NGO sector procurement prices were collected for Kenya and Uganda, at MEDS and JMS respectively.

The NGO sector procurement prices for the lowest priced generic medicines for all countries were all less than the international reference price and are presented along with the 25th and 75th percentiles to demonstrate the median and the spread of the prices for the individual medicines. 0.83 meaning medicines, on average, are procured at 17% less than the published international market prices of non-profit generic medicine suppliers.

Innovator brand medicines were only found for 3 medicines in Kenya and 1 medicine in Uganda – these all being similar in price to the lowest priced generic or the international reference price.

⁹ Patient prices were analyzed only in cases where at least 4 data points were available, i.e. price data were collected from at least four facilities.

NGO sector procurement price (MPR)



The majority of medicines in the 3 countries were generally all procured at around the international reference price. A few medicines were procured at higher prices and also there were some marked differences for the same medicines between the countries, even when they were procured below the international reference price.

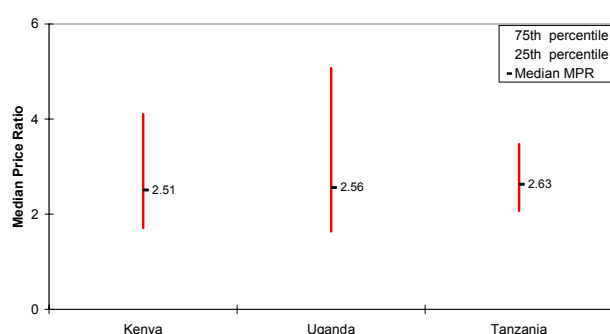
Price (MPR) [highest is in bold text]	Kenya	Uganda	Number of times more lowest highest:
Aciclovir	1.99	0.87	2.3
Amitriptyline	0.45	0.98	2.2
Ceftriaxone	2.88	1.47	2.0
Cotrimoxazole suspension	0.62	0.95	1.5
Glibenclamide	2.04	0.80	2.5
Ranitidine	3.12	0.73	4.3

NGO SECTOR PATIENT PRICES

In Kenya and Tanzania, a minority of the facilities studied charged a fee that was dependent on the individual medicine – others provided medicines free of charge or for a flat fee for all treatment costs. In Kenya and Tanzania, only where there was a price dependent on the medicine dispensed were prices used to assess NGO sector patient prices. All medicines were charged for in the NGO facilities studied in Uganda.

At NGO sector facilities, patient prices for the lowest priced generic medicines were found to be 2.51, 2.56 and 2.63 times the international reference prices for Kenya, Tanzania and Uganda respectively. The chart below described the number of times more expensive: patient prices for medicines at NGO health facilities compared to international reference prices with the 25th and 75th percentiles demonstrating the range of prices

Variation of NGO sector patient prices

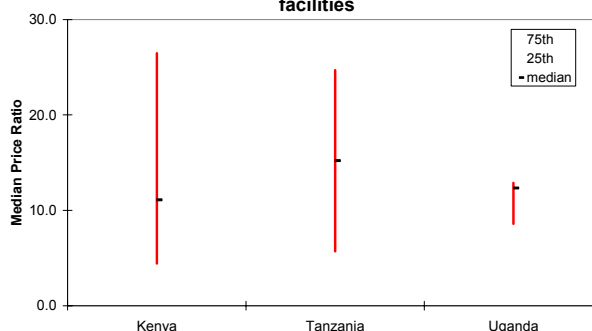


Only one innovator brand was found in Kenya, none in Tanzania or Uganda.

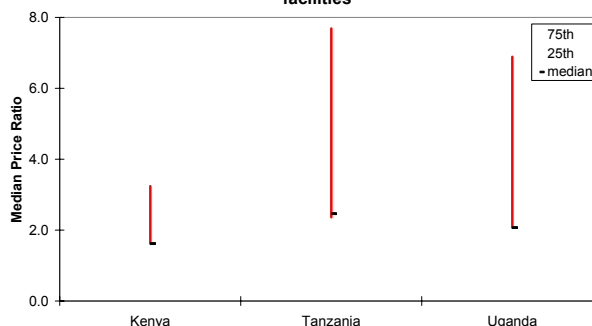
The prices patients are charged for medicines varied from facility to facility in the NGO sector in all countries, in some cases, the prices varied by many multiples.

The charts below demonstrate the price variation for albendazole and amitriptyline.

Price variation of generic of albendazole between NGO facilities



Price variation of generic of amitriptyline between NGO facilities



INTER-SECTORAL COMPARISONS

The table below compares the prices of lowest priced generics between sectors where the same medicines were found in both sectors.

For lowest priced generics:	Were this many times more expensive: [highest is in bold text]			Than:
	Kenya	Tanzania	Uganda ¹⁰	
Public sector patient prices	3.33	1.76		Public procurement prices
Private retail patient prices	1.94	3.18		Public sector patient prices
NGO patient prices	2.86		3.18	NGO procurement price
NGO patient prices	0.74	0.83	0.89	Private retail patient prices
NGO patient prices	1.30	2.84		Public sector patient prices
NGO procurement price	1.51		1.23	Public procurement prices

Availability in the NGO sector was generally greater than in the public sector in all 3 countries.

While public sector patient prices for lowest priced generics were 1.76 and 3.3 times the public procurement prices in Kenya and Tanzania respectively, the public sector patient price of some medicines was as much as 19 times the public procurement price. This is shown in the table below.

Number of times more expensive: patient prices at public sector facilities compared to public sector procurement prices (lowest priced generic)		
	Kenya	Tanzania
Albendazole		14.6
Amitriptyline	6.0	1.1
Amoxicillin	1.9	1.3

¹⁰ Medicines were provided free of charge to patients in the public sector

Diazepam	18.9	7.7
Glibenclamide		4.1
Metronidazole	5.8	3.5
Ranitidine	2.6	
Sulphadoxine-pyrimethamine	8.9	5.4

While NGO sector patient prices for lowest priced generics were 1.51 and 1.23 times the NGO procurement prices in Kenya and Uganda respectively, the NGO sector patient price of some medicines was as much as 11 times the NGO procurement price. This is shown in the table below.

Number of times more expensive: patient prices at NGO sector facilities compared to NGO sector procurement prices (lowest priced generic)		
	Kenya	Uganda
Albendazole		2.9
Amitriptyline	3.6	2.1
Amoxicillin	2.7	3.0
Diazepam	11	3.6
Glibenclamide	4.4	8.0
Metronidazole	5.2	7.0
Ranitidine	1.58	2.9
Sulphadoxine-pyrimethamine	5.6	8.3

COMMON ISSUES IDENTIFIED

Below is a summary of the issues raised in each of the three country's reports; there is a lot of commonality in the issues raised:

		Kenya	Tanzania	Uganda
Affordability & access to medicines	Medicines are unaffordable to the majority of people in all sectors	√	√	√
	Considering price of the medicines within a therapeutic group could determine whether a patient can buy the treatment, or not.	√	√	√
	Some medicines, in all sectors seem to be at higher prices than they could be achieved	√	√	√
	Within a sector, patients are paying much more at some facilities than at other facilities	√	√	√
	Some medicines sold at the same prices in all sectors, despite been procured at lower prices	√	√	√
Public sector	Key medicines not widely available	√	√	√
	Ratio - patient prices public: private	0.5	0.33	*
	Procurement: paying more than might be necessary for a small proportion of medicines	√	√	√
Private	Ratio = patient prices private: public	2 x	3 x	*
	Some branded medicines widely sold despite large brand premiums over available generics	√	√	√
NGO sector	Ratio - patient prices NGO: public	1.3 x	3 x	*
	Prices relatively high and close to private sector	√	√	√
	Availability generally greater than public sector	√	√	√
	Procurement: some medicines procured at much higher prices than public sector	√	**	√

* Medicines provided free of charge in the public sector in Uganda; ** Not measured

COMMON RECOMMENDATIONS

Below is a summary of the recommendations from each of the three countries individual reports; there is a lot of commonality how the countries intend to improve the affordability and access to medicines:

		Kenya	Tanzania	Uganda
Policy	Develop, implement and monitor a medicines pricing policy	√	√	√
	Monitor medicine prices and disseminate to the public	√		√
	Advocate on price as a barrier to access to medicines to the East African Community			√
Generics	Mandate generic prescribing and substitution	√		√
	Promote use of generics to the public and professionals including taking measures to assure on quality	√		√
Public sector	Enhance efficiency of public sector procurement	√	√	√
	Establish supportive linkages with the NGO sector procurement	√	√	√
	Strengthen demand driven ordering systems including improved estimations of need	√	√	√
	Develop a pricing policy for cost recovery schemes	√	√	
	Improve the access of the vulnerable to essential medicines in the public sector	√	√	

ADDITIONAL PERSPECTIVES EVOLVING FROM THE ANALYSIS OF COMBINED RESULTS

Below is a summary of additional perspectives and emphasis evolving from examining the results of the three countries of the East African community.

Public sector procurement prices were lowest in Kenya followed by Tanzania and then by Uganda.

Public sector patient prices were lowest in Uganda (free) followed by Tanzania and then by Kenya.

The mark-up between the public sector procurement price and the public sector patient price was 90% higher in Kenya than Tanzania

Private sector patient prices for generic medicines were lowest in Uganda.

Innovator brand medicines were much most widely found in Kenya

Private sector patient prices were almost twice those of the public sector prices in Kenya, whereas they were more than three times the price in Tanzania.

NGO patient prices are around 10-20% lower than private sector prices in all three countries.

NGO patient prices were 30% more than public sector prices in Kenya, but almost 300% more in Tanzania.

NGO procurement prices were around 25 to 50% higher than public sector procurement prices in Uganda and Kenya respectively

Prices of some medicines vary substantially between countries.

Medicine prices vary substantially within any sector in all three countries.

Some medicines, in all sectors across the three countries seem to be at higher prices than others and than they could be when compared to the international reference price e.g. albendazole, atenolol, fluconazole, glibenclamide and sulfadoxine-pyrimethamine.

ADDITIONAL RECOMMENDATIONS AND PERSPECTIVES EVOLVING FROM OF THE ANALYSIS OF COMBINED RESULTS

Below is a summary of additional recommendations emanating of the multi-country analysis of the three countries of the east African community:

There are potential benefits in the sharing of procurement practices, prices and sources of medicines between the three countries with the lowest prices overall being obtained by Kenya; but all countries procuring some individual medicines at lower prices than the others.

Mark-ups were found to be of considerably differing magnitude between the procurement price and the price paid by the patient in the public and NGO sectors within and between the three countries. Investigation of what are, and a model for determining, reasonable add-ons could enable a more uniform balance between ensuring financial sustainability of medicines supply and maximizing access to medicines by patients.

In all three countries to varying degrees, there is room for improvements in the availability of essential medicines in the public sector. Identification of bottlenecks in the procurement and supply management process and sharing of best practices and experiences across the three countries could be beneficial.

Patient prices in NGO facilities (largely in the rural areas) were very similar to prices in the private retail pharmacies (largely in the urban areas); patient prices in the public and NGO sector varied widely between facilities, more so in Tanzania than in Kenya. The development of procurement and patient pricing policies for the public and NGO sectors could be beneficial to ensuring affordable prices in all public and NGO facilities.

Varying and higher than necessary prices of antimalarials in the public, NGO and private facilities is of particular concern, especially considering the introduction of the more expensive artemisinin based combination therapies. Measures to ensure availability, as well as policies to ensure appropriate and consistent patient prices should be developed.

Prices of the lowest priced generics available vary considerably for some medicines across the three countries; additionally some medicines were apparently more expensive than could be achieved in all sectors, namely albendazole, atenolol, fluconazole, glibenclamide and sulphadoxine-pyrimethamine. Identification of the causes, as to whether this is because of the marketing of different brands of generics or perhaps more different brands in the three countries could help identify strategies to reduce the prices of particular medicines in the countries where they are higher.

Retail mark-ups were identified to be higher in Uganda than in Kenya and Tanzania. Derivation of a model as to determine what reasonable mark-ups are could enable Uganda to determine whether measures are necessary to regulate medicines prices in Uganda.

Additional mark-ups relating to import tariffs/agent fees were found in Kenya and Tanzania whereas they were not found in Uganda; on the surface of it, they appear to be the major contributor to medicines prices being higher in Kenya and Tanzania than in Uganda.

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