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 (HAI) 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/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 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.

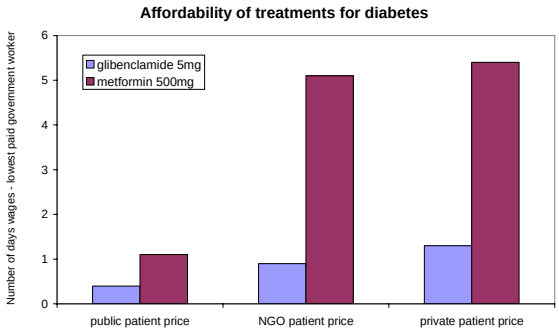
AFFORDABILITY

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.

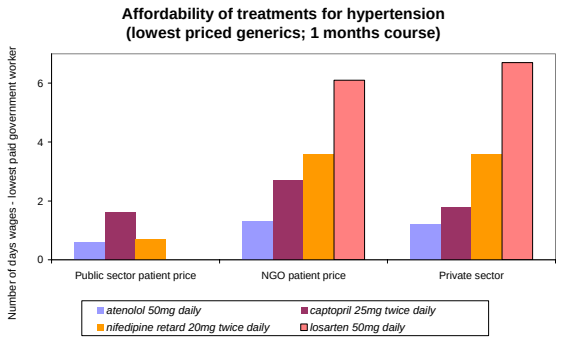
Overall, purchasing treatments for chronic conditions was found to require many more days' work than purchasing treatments for acute conditions.

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/



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
25th percentile		0.57
75th 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 (EML[4]) 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

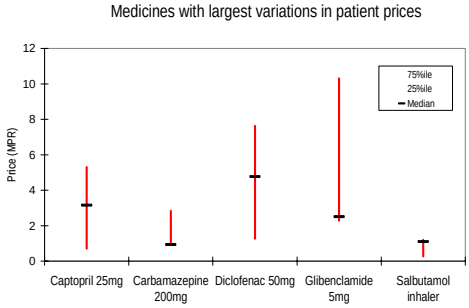
At public sector facilities, patient prices for the lowest priced generic medicines were found to be 1.33 times international reference prices. Patient prices ranged from 0.29 times (or 71% less than) the international reference price for omeprazole to 8.17 times the international reference price for 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
25th percentile	0.93
75th percentile	2.83

n=21 facilities[6]; 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.



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 carbamazapine 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
25th percentile	15.45	1.84
75th percentile	56.88	4.59

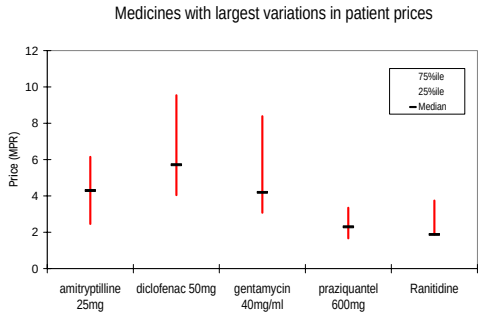
n= 48 facilities; 44 medicines

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



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.

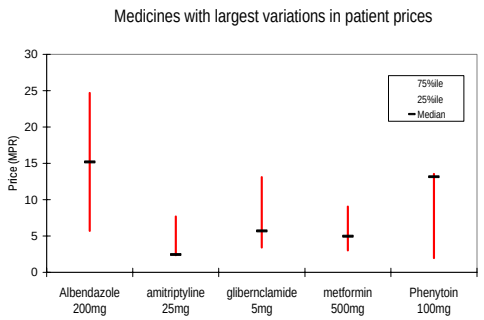
Number of times more expensive: patient prices for medicines at non-governmental facilities compared to international reference prices		
Price (MPR)	Innovator brand	Lowest priced generic
No. of medicines included	1	34
Median MPR	13.82	2.90
25th percentile		1.79
75th percentile		5.45

n= 28 facilities[7]; 44 medicines

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

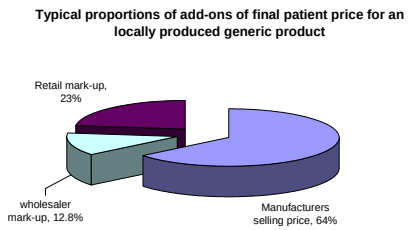
Lowest priced generic	% Availability		Number of times more expensive: patient prices at private retail pharmacies compared to public facilities
	Public sector facilities (n=21)	Private retail pharmacies (n=48)	
Acyclovir	19%	50%	1.23
Amitriptyline	29%	42%	6.32
Atenolol	24%	42%	2.00
Captopril	24%	50%	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.

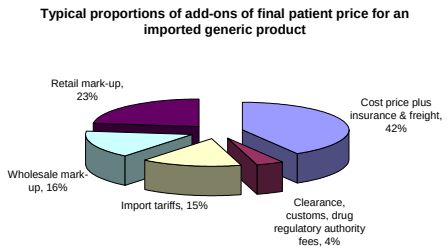
Price Components

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.



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.



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

For further information, contact Dr Jean Marie Trapsida, Coordinator EDM, WHO AFRO, Brazzaville, Republic of Congo, trapsidaj@afro.who.int and Dr. Gilles Forte, Coordinator, Department of Technical Cooperation on Essential Drugs and Traditional Medicine, WHO Geneva, forteg@who.int;