

SURVEY ON PRICES OF MEDICINES IN ETHIOPIA

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ACRONYMS

CIF	Cost Insurance and Freight
DACA	Drug Administration and Control Authority
E.C.	Ethiopian calendar
EDL	Essential Drugs List
EDM	Essential Drugs and Medicines policy
EFV	Efavirenz
ERCS	Ethiopian Red Cross Society
FOB	Free On Board
G.C.	Gregorian Calendar
GDP	Gross Domestic Product
HAI	Health Action International
IRP	International Reference Price
LPG	Lowest Price Generics
LIDE	List of Drugs for Ethiopia
MOH	Ministry of Health
MPR	Median Price Ratio
MSH	Management Science for Health
MSG	Most Sold Generics
MUP	Manufacturers Unit Price
NGO	Non Governmental Organization
NPO	National professional Officer
PASS	Pharmaceuticals Administration and Supplies Service
SMUP	Sector Median Unit Price
SNNPR	Southern Nations, Nationalities and Peoples Region
SP	Special Pharmacy
3TC	Lamivudine
USD	United States Dollar
WHO	World Health Organization
ZDV	Zidovudine (also known as AZT)

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EXECUTIVE SUMMARY

Introduction

The study on the prices of medicines in Ethiopia was jointly conducted by the Pharmaceuticals Administration and Supplies Service (PASS) of the Federal Ministry of Health and the World Health Organization (WHO) from 15 September to 15 October 2004. The survey was carried out in four regions of the country: Tigray, Amhara, Oromia and Southern Nations, Nationalities and Peoples Region (SNNPR) as well as in the capital city, Addis Ababa.

The fieldwork was based on standardized international methodology jointly developed by WHO and Health Action International (HAI). *The main objective of the study* was to find out the price and availability of selected medicines as well as affordability of cost of treating common diseases to low-income people in Ethiopia and recommend appropriate policy actions for improvement.

Data on prices and availability of 26 selected medicines were collected from 2 government procurement agencies, 25 private pharmacies, 34 medicine outlets in public health facilities and 28 other medicine outlets which included revolving drug fund pharmacies called ‘*Special pharmacy*’ and pharmacies owned by the Ethiopian Red Cross Society (ERCS). These two types of revolving drug fund medicine outlets were considered as a group.

Price and availability data were subjected to *within sector* and *cross sector* comparisons. The price data were also compared with *International Reference Prices (IRPs)*, which are the medians of procurement prices offered by not-for-profit suppliers in 2003 to developing countries for multi source generically equivalent products, and compiled by Management Science for Health (MSH).

In order to assess affordability of cost of treatment of common disease conditions to low-income people, the costs of treating 6 common disease conditions were calculated and compared with the daily wage of the lowest paid government worker (Birr 6.70 or US\$ 0.80 per day). In addition, the components of prices of medicines were identified to determine cost factors, which contribute to the final cost of medicines that a patient pays.

Availability

The results show that availability of medicines in public health facilities was lower than in the private pharmacies but comparable to the availability in special pharmacies /ERCS medicine outlets. Availability of all types of medicines also varied widely between medicine outlets surveyed in all sectors.

For example, the median availability of lowest price generics was 76.5%, 96% and 78.6% in the public health facilities, private pharmacies and special pharmacies /ERCS medicine outlets, respectively. In contrast, median availability of most sold generics was 29.4%, 68% and 37.5% in the public health facilities, private pharmacies and special pharmacies /ERCS retail outlets, respectively.

Innovator brand products were not available in public health facilities and were hardly available in special pharmacies/ERCs medicine outlets. They were not also available in the government procurement agencies since they purchase drugs using generic names. This shows that the generic policy is effectively implemented in the public sector.

In general, lowest price generic products had better availability than the other types of medicines. For example, availability of lowest price generics was 3, 2 and 1.4 times the availability of most sold generic equivalent products in public health facilities, special pharmacies /ERCS retail outlets and private pharmacies, respectively.

Investigation of the availability of 10 commonly used medicines revealed that availability of all the 10 medicines in public health facilities was inadequate (i.e. below 75 %). The availability of these medicines in special pharmacies /ERCS retail outlets also showed similar trend. Due to the government policy on the distribution of Anti Retroviral drugs, they were available only in ERCS medicine outlets.

The low availability of medicines in the public health facilities and special pharmacies/ ERCS medicine retail outlets indicates that patients will be forced to purchase medicines at higher prices in the private pharmacies or go to informal sector or forgo treatment.

Price

Public procurement prices for most sold and lowest price generic products in Ethiopia were lower than the international reference prices by 29 % and 39 %, respectively. This shows that procurement agencies in Ethiopia are purchasing medicines at internationally competitive prices. Comparison with other African countries has also shown that Ethiopia has a relatively cheaper generic patient prices and procurement prices.

In general, prices of medicines were lowest in public health facilities and highest in private pharmacies. Prices in special pharmacies/ERCS retail outlets were in between that of the two sectors.

For example, Patient charges in the private pharmacies for the most sold and lowest price generic products were 69.2% and 67.2 %, respectively above patient charges in public health facilities.

Patient charges in the private pharmacies for most sold and lowest price generic products were 29.6 % and 27.1 %, respectively above patient charges in Special pharmacies/ERCS retail outlets.

In Special pharmacies/ERCS retail outlets, patient charges for most sold and lowest price generic products were 15.9% and 26.2 %, respectively above patient charges in public health facilities.

Innovator brand products generally had higher prices than their generic equivalents. For example, innovator brand products in the private pharmacies were 5.9 times as expensive as the most sold and 5.7 times as expensive as the lowest price generic equivalents. However, comparison with other African countries has shown that innovator brand products have a relatively cheaper price in Ethiopia but wider price variation.

Prices of most sold generics tend to be slightly higher than that of lowest price generic equivalents. But, the differences were not marked.

When compared with International Reference Prices, the prices of generic products in public health facilities and special pharmacies/ERCS medicine outlets were quite good. But the prices in the private pharmacies were relatively high. For example, the median prices of lowest price generic equivalents in public health facilities, private pharmacies and Special pharmacies/ERCS retail outlets were 35 %, 125 % and 70% above the international reference prices, respectively.

However, when prices of individual medicines are considered, it was observed that median prices of generic products were as low as nearly half of their international prices (e.g. MPR of tetracycline in public health facilities = 0.61) and as high as 50 times their international reference price (e.g. MPR of cotrimoxazole = 49.44). It was also noticed that from among all generics sold in the public health facilities, metronidazole capsule, which is a locally manufactured product, had the highest median price ratio (MPR=3), i.e. its median price was nearly 3 times its international reference price.

Affordability

Cost of treatment of diseases varied between innovator brand products and their generically equivalent products as well as between sectors.

In order to purchase a course of innovator brand Amoxicillin from private pharmacies to treat pneumonia, a lowest paid government worker would need to work for 4.10 days.

To purchase the lowest price generically equivalent products of the same medicine from public health facilities, private pharmacies and special pharmacies/ERCS retail outlets, he/she would need to work for 0.70, 0.90, and 0.80 days, respectively.

For a one-month course of glibenclamide to treat diabetes mellitus, a lowest paid government worker would need to pay his/her 10.3 days' wages for an innovator brand product in private pharmacies. But, purchasing the generically equivalent products from public health facilities, private pharmacies and special pharmacies /ERCS retail outlets would require only his/her 0.80, 0.90 and 1.2 days' wages, respectively.

Suppose we have an asthmatic child with Acute Respiratory Infection (ARI), an adult with diabetes mellitus and another adult with hypertension in a family. The breadwinner, who is a lowest paid government worker, will have to work nearly for 3, 4.6 and 4.6 days to purchase the necessary lowest price generic versions from public health facilities, special pharmacies/ERCS medicine outlets and private pharmacies, respectively.

To purchase one-month triple combination of Anti Retro Viral generic old regimen [(ZDV+3TC) + EFV], a lowest paid government worker would need to work for 3.5 months.

Previous studies* indicate that around 44 % and 81 % of the Ethiopian population earn less than US\$ 1 and US\$ 2 per day, respectively. It is also reported that only 3.6 % of the total household income is spent on medical care, transport, communication, education, recreation and entertainment.

* Please see reference number 9, 10 and 11

Given the above low-income level and extremely small proportion of house hold income spent on medical care, it seems that cost of treatment of diseases is unaffordable to the majority of the Ethiopian people.

Comparison of affordability of cost of treatment in private pharmacies of Ethiopia with that of other African countries has also shown that cost of treatment in Ethiopia is less affordable despite lower median prices in Ethiopia. This may be due to the low income level in Ethiopia.

Price composition

The major contributors to the total cost of medicines to patients were retail mark-ups followed by wholesale mark-ups. There is no ceiling set by law on the wholesale and retail mark-ups in all sectors. However, through interviews and observations during data collection, it was noted that wholesale mark-ups in general range from 20% - 40% of the landed costs of imported products and 5 % -10% of the ex-factory prices of locally manufactured products. Retail mark-ups range from 20 % - 30 %, depending on the type of the sector. But the rates in the private sector are unpredictable.

Conclusion and recommendations

The survey has provided key information that can be used for future planning and policy actions. In order to minimize shortcomings or weaknesses identified in this study, the following recommendations are forwarded:

- Investigate the cause of low availability of medicines in the public health facilities and special pharmacies/ERCS medicine retail outlets.
- Uphold /maintain the generic policy implementation in the procurement of medicines.
- Undertake in-depth study on pricing system in public health facilities to find out the reasons for variations in price levels of medicines.
- Develop a pricing policy which contain aspects of price control and incentives to reduce prices
- Introduce different financing options such as community revolving drug schemes and health insurance schemes;
- Introduce /revise exemptions or differential fee system to ensure access by the poorest;
- Conduct regular education programs on the essential drugs concept and rational drug use to health personnel and the public in order not to lose the gains from effective generic policy implementation in the public sector.

1. INTRODUCTION

1.1. Geographical and Socio-demographic Data

Ethiopia is located in Eastern part of Africa, which is commonly known as the horn of Africa between 3 and 15 degrees North latitude and 33 and 48 degrees East longitude.

Administratively, the country is divided into nine National Regional States (Tigray, Afar, Amhara, Oromiya, SNNPR, Benishangul-Gumuz, Gambella, Somali and Harari) and two Administrative States (Addis Ababa City administration and Dire Dawa council). [Annex I].

It had a population of approximately 71.1 million in 1996 E.C. (2003/04 G.C.)*. The GDP at current market prices in the same year was USD 69.2 billion. (1)

1.2. The Health Sector

The health service delivery system in Ethiopia is guided by a National Health Policy issued in September 1993 G.C. (2) The Ministry of Health is the major provider of Health Care followed by the private sector, Non-Governmental Organizations (NGOs) and other governmental organizations.

Each of the states or regions listed above has a health bureau, which is responsible for the overall management of health service delivery in the state or region.

The actual delivery of health service is carried out by different levels of health care facilities: 126 hospitals, 519 Health Centres, 1797 Health Stations and 2899 Health Posts. In 1996 E.C. (2003/04 G.C.), the potential health service coverage (by health centres, health stations and health posts) was 64 %. The recurrent national health expenditure in the same year was Birr 532,172,000 (USD62, 169,626). (1)

1.3. The Pharmaceutical Sector

Policy and Regulation

The pharmaceutical sector is guided by a national drug policy issued in November 1993 G.C. (3) and regulated by the "*Drug Administration and Control Proclamation No. 176/1999*" promulgated on 29 June 1999 G.C. (4)

The Drug Administration and Control Authority (DACA), which was established by the above proclamation, is the National Drug Regulatory Authority. DACA issues certificate of competence to manufacturers, whole sellers and retailers.

A system of drug registration and laboratory quality control exists. There are different registration fees for imported and locally manufactured drugs but no distinction between innovator brand product and generic medicines.

* There is a difference of 7-8 years between Ethiopian Calendar (E.C.) and Gregorian Calendar (G.C.)

There are two types of medicines lists in the country: A national medicines list called "*List of Drugs for Ethiopia (LIDE)*", July 2002 G.C. edition, which contains medicines to be imported or locally produced in the country (5). The second list is the '*Essential Drugs List (EDL)*' which is a sub list of the LIDE. It was revised in 1996 E.C. (2003/04 G.C). and the revised version contains 282 priority medicines for public procurement. (6)

There is a policy of generic prescribing and substitution, but there are no incentives for its implementation. There is no price regulation in the country.

Procurement and Distribution

Import and wholesale are done by the public sector, private sector, NGO's and International Organizations. The pharmaceutical Administration and Supply Service (PASS) of the Ministry of Health and the Pharmaceutical and Medical Supply Import and Wholesale Share Company known as PHARMID are responsible for import and distribution of medicines to the public sector. PHARMID has eight wholesale distribution branches (2 in Addis Ababa and 6 in different regions). Moreover, each regional health bureau has regional and district stores which distribute medicines to health facilities owned by the Ministry of Health.

The public procurement is done through international and local open tenders, restricted tender, direct purchasing or negotiation and it is limited to the LIDE. There is a local preference up to 15%.

In 1996 E.C. (2003/04 G.C), there were 37 wholesalers, 54 importers and 13 local manufacturers.

The drug retail activity is carried out by the public sector, private sector, city councils and the Ethiopian Red Cross Society ((ERCS). In 1996 E.C. (2003/04 G.C.), there were 275 pharmacies (run by pharmacy degree graduates), 375 drug shops (run by pharmacy diploma graduates) and 1783 rural drug vendors (run by nurses or health assistants or pharmacy technicians) (1). Moreover, each health care facility has its own medicine retail outlet.

In 1994 E.C. (2001/02 G.C.), the total government drug budget was about 12.1 million USD, which was approximately 19% of the recurrent government health budget and represented a per capita drug budget of 0.18 USD. The total annual drug expenditure in the same year was estimated at 30 million USD out of which 12.3 million USD was donation (7).

There are public health programs such as TB/Leprosy Control, Family Planning, Malaria Control, and HIV/AIDS Control, which are assisted by donors.

Anti-TB/Leprosy medicines as well as family planning medicines and supplies are provided free of charge to all patients in public health facilities. Moreover, poor patients are provided with medicines free of charge in public health facilities upon submission of certificate of exemption from their local administrations. Some organizations also have health insurance for their employees, which cover their medicine cost.

There is no ceiling set by law on the wholesale and retail mark-ups in the country. However, generally PHARMID charges 20-40% wholesale mark-up on imported medicines and 5-10% on locally manufactured products. PASS distributes medicines to regional health bureaus at cost.

Pharmacies owned by the ERCS and public health medicine outlets (including special pharmacies) charge a retail mark-up of 25% while pharmacies owned by municipalities charge 20% retail mark-up.

Drug Financing

Sources of drug financing include government finance, private expenditure (i.e. user charges or out of pocket payments), external assistance, loan and private health insurance. There are no current figures on the contribution of each source although the National Health Accounts exercise in 1988E.C. (1995/96 G.C.) indicated that private expenditure on drugs accounts for the largest share of the total estimated drug expenditure in the country.

2. OVER ALL CONTEXT OF THE STUDY

2.1 Problem Statement

High prices limit access to medicines, particularly to low-income people. Consequently, they are major barriers to better health. In order to take policy actions, which improve access to essential medicines, the government needs reliable information on the prices of medicines. Procurement agencies also need information on prices of medicines in order to negotiate cheaper prices so as to make medicines affordable to consumers. Other stakeholders such as Non Governmental Organizations (NGOs), international agencies, health professionals and consumers also need this information to advocate for more equitable access to essential medicines.

Therefore, the goal of this study is to find out the price and availability of selected medicines as well as affordability of cost of treatment of common diseases to low-income people in Ethiopia.

2.2 Objectives

The objectives of the study are the following:

- To assess availability of key medicines in different sectors;
- To measure affordability of the cost of treatment of common diseases to low-income people in the country;
- To determine the components of the prices of medicines (i.e. taxes, duties, etc. levied on medicines) and the level of various mark-ups that contribute to the price at which medicines reach the consumers;
- To compare the relative prices of innovator brand medicines and their generic equivalents;
- To compare medicines prices across different types of medicines and sectors;
- To compare procurement prices in Ethiopia with international reference prices and with local retail prices;
- To recommend appropriate policy actions for improvement.

2.3 Methodology

The survey on prices of medicines in Ethiopia was jointly conducted by PASS/MOH and World Health Organization (WHO) from 15 September to 15 October 2004 in four regions of the country, namely, Tigray, Amhara, Oromia and SNNPR as well as the capital city, Addis Ababa. The regions were selected randomly, except Addis Ababa, so that the results will be representative of the national situation and generalization can be made about the country. The fieldwork was based on the methodology described in the *"Medicines Prices - a new approach to measurements, 2003 edition"* manual which was jointly developed by the World Health Organization (WHO) and Health Action International (HAI). (8)

2.3.1 Sampling

A total of 26 medicines were included in the survey. Of these, 9 medicines were pre selected as core medicines for international comparisons and 17 other medicines, which are commonly used in the country, were added as supplementary medicines. The complete list is attached as Annex II.

For each medicine, up to three types of products were monitored, namely, innovator brand product, most sold generic equivalent and lowest price generic equivalent products. The most sold generic equivalents were determined nationally before the beginning of the survey while the lowest price generic equivalents were obtained per facility at the time of the survey.

Data on prices of medicines and availability of medicines on the day of the survey were collected from 2 public procurement agencies (i.e. PHARMID and PASS), 25 private pharmacies, 34 medicine outlets in health facilities owned by the Ministry of Health (14 health centres and 20 hospitals), 28 medicine outlets which included revolving drug fund pharmacies called '*Special Pharmacies*' and Pharmacies owned by ERCS. Hereafter, both health centres and hospitals will be collectively referred to as "*public health facilities*". In the work book of this study, special pharmacies and pharmacies owned by the ERCS are collectively referred to as "*Other sector*" medicine outlets.

The above medicine outlets were distributed in the four survey regions and in the capital city, Addis Ababa and the complete list is attached as Annex II.

The prices measured in the above outlets included public procurement prices and prices charged to patients. The components of medicine prices were also measured in order to examine the total mark-up structure and identify cost factors, which contribute to the total cost of each medicine to the patient.

Baseline information on national medicines policy, procurement and distribution, government and private sector policies and financing mechanisms of medicines was also collected centrally using the '*National Pharmaceutical Form*' provided in the WHO/HAI 2003 manual (Annex IV). The findings were summarized under the title '*The pharmaceutical sector*' on page 5.

2.3.2 Data Collection

Five data collection teams were formed (i.e. one team per survey region) and each team was composed of one medical doctor and one pharmacist who were officially assigned by the Health bureaus in the survey regions, except in Addis Ababa. In the capital city, Addis Ababa, the two survey managers themselves collected data.

The heads of the pharmacy teams in the health bureaus of the survey regions served as supervisors. The over all activity was centrally coordinated by an officer from the Pharmaceutical Administration and Supply Service (PASS) of the Ministry of Health and the National Professional Officer (NPO) for Essential Drugs and Medicines Policy (EDM) in the WHO Office of Ethiopia.

Before the survey was started, the data collectors and supervisors were trained on 8-10 September 2004 in Addis Ababa. At the end of the Training, field-testing of the survey tools

was done. A standardized data collection forms developed by WHO/HAI were used to collect the data from the facilities surveyed(Annex V). Data collected from all the survey areas were entered and analysed using WHO/HAI computerized workbook version 3.05.

2.3.3 Limitations of the study

The study methodology, which developed by WHO/HAI group is under review and is to be developed further as experiences from more studies accumulate. Moreover, patient charges in all sectors are compared with International public procurement prices instead of International reference retail prices. This may affect the validity of the price comparison.

3. FINDINGS AND ANALYSIS

The data on *prices* and *availability* of medicines as well as *affordability* of cost of treatment of common diseases to low-income people were subjected to *within sector* and *across sector analysis*:

The median prices of medicines in each sector were compared with *International Reference Prices (IRPs)*, which are the medians of procurement prices offered by not-for-profit suppliers in 2003 to developing countries for multi source generically equivalent products, and compiled by Management Science for Health (MSH). This comparison yields '*Median Price Ratio (MPR)*' which is basically median unit price of a drug (in local currency) divided by the unit reference price of MSH (in local currency). In other words, MPR shows the number of times greater (or less) than the IRP a medicine costs in Ethiopia. Median Price Ratios (MPRs) of medicines thus generated were compared across medicine types within a sector as well as across sectors.

Median percent availability of medicines was compared across medicine types within a sector as well as across sectors. Price and availability variations between medicines out lets were measured by the ranges between the 25th and 75th percentiles (inter-quartile range) and between minimum and maximum values.

In order to find out what prices of medicines mean to ordinary citizens, *affordability* of the cost of treatment of common disease conditions was assessed by comparing the costs of treatments with the daily wage of lowest paid government unskilled worker (Birr 6.7 or US\$ 0.80 per day). Finally, the different *components of prices* of medicines, which contribute to the total cost of medicines to patients, were examined.

3.1. Within sector price and availability comparison

3.1.1. Medicine procurement price

Single order procurement prices were collected from two government agencies (i.e. PHARMID and PASS) and their median MPRs were calculated. The procurement prices from PHARMID were tender prices of 2004 while that of PASS were tender prices of 2003.

Table 1: Summary of median MPRs of three types of medicines in public Procurement agencies.

Statistics	Most sold (n = 17)	Lowest Price (n = 17)
Median MPR	0.71	0.61
25% ile MPR	0.57	0.58
75% ile MPR	1.21	0.83
Minimum MPR	0.3	0.36
Maximum MPR	42.19	1.38

Comparison of public procurement prices in Ethiopia with international procurement prices reveals that procurement prices in Ethiopia are lower than the international procurement

prices by 29 % and 39 % with respect to most sold and lowest price generics, respectively (Median MPR 0.71 and 0.61). The above table also illustrates that procurement prices of most sold and lowest price generics are almost the same (Median MPR 0.71 versus 0.61) but showed different price variation between medicine orders.

On the other hand, no price data were found for innovator brand products since the government agencies purchase medicines by generic names.

3.1.2. Medicines availability and patient prices in medicines retail outlets

3.1.2.1. Public health facilities (n = 34)

a) Comparison of medicines availability across medicine types.

Table 2: Summary of median of median percent availability of three types of medicines in the public health facilities.

Statistics	Brand (n = 0)	Most sold (n = 19)	Lowest Price (n = 26)
Median availability	0 %	29.4 %	76.5 %
25% ile availability	0 %	7.4 %	59.6 %
75% ile availability	0 %	42.6 %	91.2 %

Of the 26 medicines for which prices were sought, there were no innovator brand products in all public health facilities surveyed. Availability of lowest generic equivalent products was nearly 3 times the availability of most sold generic equivalent products (Median of median availability 76.5% versus 29.4%).

Half of the most sold generic equivalent products were found between 7.4 % - 42.6 % of the public health facilities surveyed. In contrast, half of the lowest price generic alternatives were found between 59.6 % - 91.2 % of the public health facilities surveyed. This shows marked variation of the availability of both types of products between the public health facilities surveyed.

b) Patient price comparison across medicine types.

Table 3: Summary of the median MPRs of three types of medicines in the public health facilities

Statistics	Most sold (n = 19)	Lowest Price (n = 19)
Median MPR	1.35	1.34
25% ile MPR	1.23	1.11
75% ile MPR	2.04	2.01
Minimum MPR	0.74	0.61
Maximum MPR	3.0	2.57

Comparison of the median MPRs of 19 most sold and 19 lowest price generic equivalent products shows that there is no marked difference in the prices of the two generic versions (median of MPRs 1.35 versus 1.34). When compared with international reference prices, the median of median prices of most sold and lowest price generic products were only 35 % and 34 % above the international reference prices, respectively. This shows that the prices of generic medicines in the public health facilities are relatively good.

The inter-quartile range shows that there is no marked variation in prices of both types of generic versions between public health facilities surveyed.

3.1.2.2 Private pharmacies (n = 25)

a). Comparison of medicines availability across medicine types.

Table 4: Summary of median of median percent availability of three types of medicines in the private pharmacies.

Statistics	Brand (n = 8)	Most sold (n = 23)	Lowest Price (n = 26)
Median availability	0 %	68 %	96 %
25% ile availability	0 %	36 %	85 %
75% ile availability	27 %	87 %	100 %

The above table illustrates that availability of lowest price medicines in private pharmacies was 1.4 times the availability of most sold generic medicines (median of median availability 96 % versus 68 %).

Half of the most sold generic medicines were found between 36 %-87 % of the private pharmacies surveyed and their over all availability varied between the private pharmacies surveyed. In case of lowest price generic alternatives, half of them were found in between 85 % -100% of the private pharmacies surveyed and their over all availability showed less variation as compared with that of most sold generic medicines.

On the other hand, the figures in the above table show that more than a quarter of the innovator brand products were not available in any of the retail outlets (i.e. 25th percentile is 0.00) and half of the innovator brand products were found in less than 27 % of the private pharmacies surveyed.

b) Patient price comparisons across medicine types

Table 5: Summary of the median MPRs of three types of medicines in the private pharmacies.

Statistics	Brand Vs Most sold		Brand Vs Lowest price		Most sold Vs Lowest price	
	Brand (n = 7)	Most sold (n = 7)	Brand (n = 8)	Lowest Price (n = 8)	Most sold (n = 23)	Lowest Price (n = 23)
Median MPR	13.51	2.28	11.55	2.04	2.34	2.34
25% ile MPR	8.40	1.89	8.36	1.83	1.78	1.66
75% ile MPR	28.33	2.76	26.26	2.47	3.70	3.10
Minimum MPR	2.39	1.01	2.39	1.07	0.99	0.99
Maximum MPR	49.44	4.50	49.44	4.13	61.36	7.44

There are three pairs of columns in table 5 above. In each pair of columns, summary price ratios for pairs of equivalent products are compared.

The above comparison shows that the innovator brand products were 5.9 times as expensive as most sold generic equivalent medicines (median of MPR 13.51 versus 2.28) and 5.7 times as expensive as the lowest price generic equivalent medicines (median of MPR 11.55 versus 2.04). The inter-quartile ranges indicate that prices of innovator brand products showed marked variation between the private pharmacies surveyed.

On the other hand, the comparison between most sold and lowest price generic equivalent products showed that both types of products had the same price level (median of MPR 2.34 versus 2.34) but showed different price variation among the private pharmacies surveyed.

3.1.2.3. SP/ERCS medicine retail outlets (n = 28)*

a) Comparison of medicine availability across medicine types.

Table 6: Summary of the median of median percent availability of three types of medicines in SP/ERCS medicine outlets.

Statistics	Brand (n = 0)	Most sold (n = 20)	Lowest Price (n = 25)
Median availability	0 %	37.5 %	78.6 %
25% ile availability	0 %	17.9 %	57.1 %
75% ile availability	0 %	46.4 %	84.8 %

As Table 6 shows, the median availability of innovator brand products was 0% meaning that they were scarcely available in the SP/ERCS retail outlets. A availability of lowest price generic

* In the work book of this study, SP/ERCS medicine retail outlets (meaning Special Pharmacies and ERCS medicine retail outlets) are collectively referred to as "Other sector" medicine outlets.

products was 2 times the availability of most sold generic products (median of median availability 78.6 % versus 37.5 %). The over all medicine availability in SP/ERCS medicine retail outlets was very low.

Half of the most sold generic products were found in 17.9 % - 46.4 % of other sector medicine retail outlets surveyed while half of the lowest price generics were found in 57.1 % - 84.8 % of SP/ERCS medicine retail outlets surveyed. The over all availability of both types of products varied between the medicine retail outlets surveyed.

b) Patient price comparison across medicine types.

Table 7: Summary of median MPRs of three types of medicines in the SP/ERCS medicine retail outlets.

Statistics	Brand (n = 0)	Most sold (n = 20)	Lowest Price (n = 20)
Median MPR		1.63	1.67
25% ile MPR		1.35	1.32
75% ile MPR		2.55	2.42
Minimum MPR		0.78	0.78
Maximum MPR		4.63	4.63

Table 7 shows that most sold generics and lowest price generics had similar price levels (median MPR 1.63 versus 1.67) and similar price variability across SP/ERCS medicine retail outlets surveyed. Median of median prices of medicines in SP/ERCS medicine retail outlets were 63 % and 67 % above the international reference price with respect to most sold and lowest price generics, respectively. This shows relatively good prices of medicines in the sector.

3.2 Cross sector price and availability comparisons

3.2.1 Comparison of individual medicine availability and prices across sectors

3.2.1.1. Comparison of individual medicines availability

Table 8 on page 17 shows the median percent availability of 10 medicines which are commonly used in the country.

The table shows that the overall availability of Acyclovir in public health facilities and SP/ERCS medicine retail outlets is less than 15%. Availability of all the 10 medicines in public health facilities was also inadequate (i.e. below 75 %). The availability of these medicines in SP/ERCS outlets also showed similar pattern.

The low availability of the above products indicates the need for intervention to improve availability of these essential drugs to treat common diseases in the country.

Anti Retroviral (ARV) drugs were allowed to be available only in pharmacies owned by the ERCS and city councils due to the government policy. Hence, the availability of ARVs was not included in the calculation of the overall availability of medicines. They were considered separately.

3.2.1.2 Comparison of individual medicines prices

Table 9 on page 18 and Figure 1 below illustrate that from among the generic products, Lowest price generic tetracycline eye ointment had the lowest median price ratio in all sectors (MPR= 0.61 in public health facilities, 0.78 in SP/ERCS outlets and 1.01 in the private pharmacies) while most sold Hydrochlorthiazide tablet (Esidrex^R) had the highest median price (MPR=61.36) when sold in the in the private pharmacies. In specific terms, these mean that the median price of generic tetracycline eye ointment in public health facilities is a little bit higher than half of its international reference price while the price of hydrochlorthiazide is nearly 61 times its international reference price.

From among all the generic products sold in the public health facilities, metronidazole 250 mg capsule which is a locally manufactured generic product, had the highest median price ratio i.e. its median price was nearly 3 times its international reference price (MPR= 2.57 for LPG and 3.0 for MSG).

Innovator brand products generally have high median price ratios. For example, Cotrimoxazole tablet in the private pharmacies had the highest median price ratio among the innovator brand products and its median price is nearly 50 times its international reference price (MPR=49.44). Compared to the price of its generic equivalents in the private pharmacies, innovator brand Cotrimoxazole is 18 times that of the most sold and 21 times that of the lowest price generic equivalent (MPR 49.44 versus MPR 2.69 and MPR 2.35).

Figure 1 MPRs of six medicines in private pharmacies by medicine type

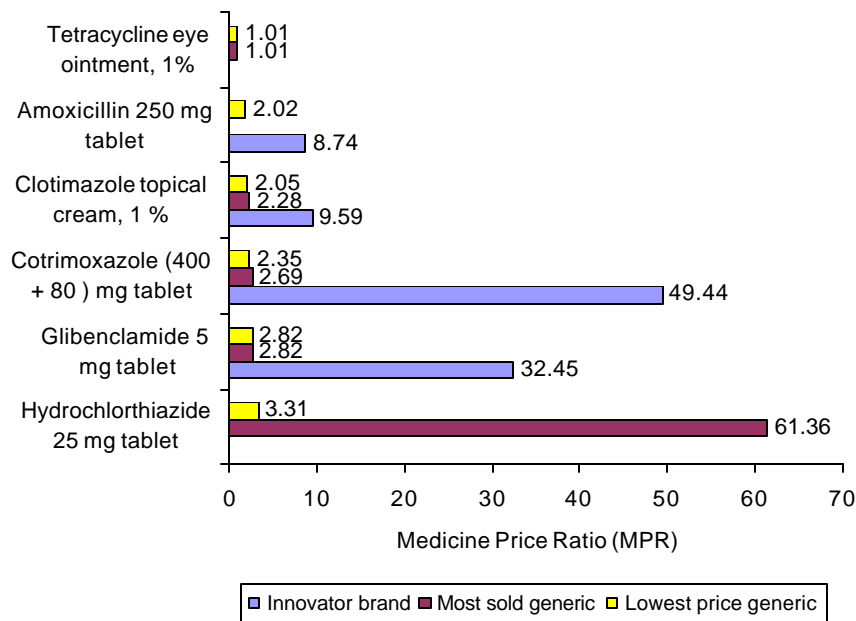


Table 8: Median percent availability of some commonly used medicines in three sectors.

Medicine name	Brand			Most sold			Lowest price		
	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERCS out lets (n=28)	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERCS out lets (n=28)	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERC S out lets (n=28)
Aciclovir 200 mg tablet	0 %	0 %	0 %	2.9 %	4 %	0 %	14.7 %	88 %	7.1 %
Chloroquine phosphate 250 mg tablet	0 %	0 %	0 %	29.4 %	84 %	46.4 %	61.8 %	100 %	85.7 %
Clotrimazole topical cream, 1 %	0 %	48 %	3.6 %	11.8 %	48 %	17.9 %	58.8 %	96 %	57.1 %
Benzyl benzoate lotion, 25 %	0 %	0 %	0 %	5.9 %	88 %	42.9 %	52.9 %	88 %	46.4 %
Diclofenac 25 mg tablet	0 %	0 %	0 %	0 %	0 %	0 %	17.6 %	88 %	42.9 %
Diclofenac 50 mg tablet	0 %	0 %	0 %	38.2 %	80 %	32.1 %	50 %	100 %	46.4 %
Quinine dihydrochloride 300 mg/ ml injection	0 %	0 %	0 %	44.1 %	64 %	53.6 %	52.9 %	64 %	71.4 %
Salbutamol inhaler 0.1 mg per dose	0 %	52 %	0 %	35.3 %	68 %	42.9 %	55.9 %	84 %	42.9 %
Hydrochlorthiazide 25 mg tablet	0 %	0 %	0 %	0 %	32 %	3.6 %	73.5 %	100 %	67.9 %
Penicillin G sodium crystalline , powder for injection, I MIU/ vial	0 %	0 %	0 %	44.1 %	48 %	53.6 %	73.5 %	64 %	75 %

Table 9: Median MPRs of some commonly used medicines in three sectors.

Medicine name	Brand			Most sold			Lowest price		
	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERCS out lets (n=28)	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERCS out lets (n=28)	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERCS out lets (n=28)
Diazepam 5 mg tablet					6.61	4.63	2.07	7.44	4.63
Diclofenac 50 mg tablet				2.36	4.72		2.36	4.72	2.36
Glibenclamide 5 mg tablet		32.45		2.36	2.82		2.54	2.82	3.67
Metronidazole 250 mg capsule				3.0	4.69	3.75	2.57	4.69	3.13
Tetracycline eye ointment, 1 %				0.74	1.01	0.78	0.61	1.01	0.78
Hydrochlorthiazide 25 mg tablet					61.36		1.65	3.31	3.64
Amoxicillin 250 mg capsule		8.74					1.41	2.02	1.68
Clotrimazole topical cream, 1 %		9.59		1.60	2.28	2.56	0.93	2.05	1.70
Cotrimoxazole (400+80) mg tablet		49.44		1.35	2.69	1.48	1.35	2.35	1.75
Cotrimoxazole (80 +40) mg/ml paediatric suspension		24.2		1.16	1.93	1.16	1.0	1.93	1.16

3.2.2 Comparison of overall medicine availability and price levels across sectors

3.2.2.1 Comparison of over all medicines availability

Table 10: Summary of the median of median percent availability of medicines in the four sectors.

Type of medicine	Procurement (n=2 orders)	Public health facilities (n= 34)	Private pharmacies (n=25)	SP/ERCS out lets (n=28)
Brand	N/A	0 %	0 %	0 %
Most Sold	N/A	29.4%	68 %	37.5 %
Lowest Price	N/A	76.5 %	96 %	78.6 %

From table 10 above, it is clear that innovator brand products are unavailable in public procurement agencies since medicines are purchased by generic names. Their median of median availability in all the other three sectors is also 0 %. This shows that generic policy is well implemented at least in the public sector.

On the other hand, the overall availability of most sold and generic equivalent medicines in the public health facilities is lower than that of the private pharmacies but comparable to that of SP/ERCS medicine retail outlets. This situation indicates that patients will be forced to purchase drugs at higher prices in private pharmacies or go to informal sector or forgo treatment. Figure 2 below illustrates the situation graphically.

Figure 2 Median of median percent availability of medicines across sectors

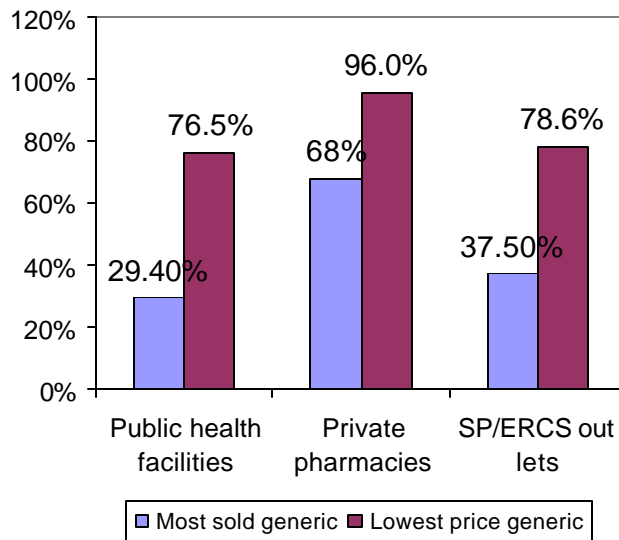
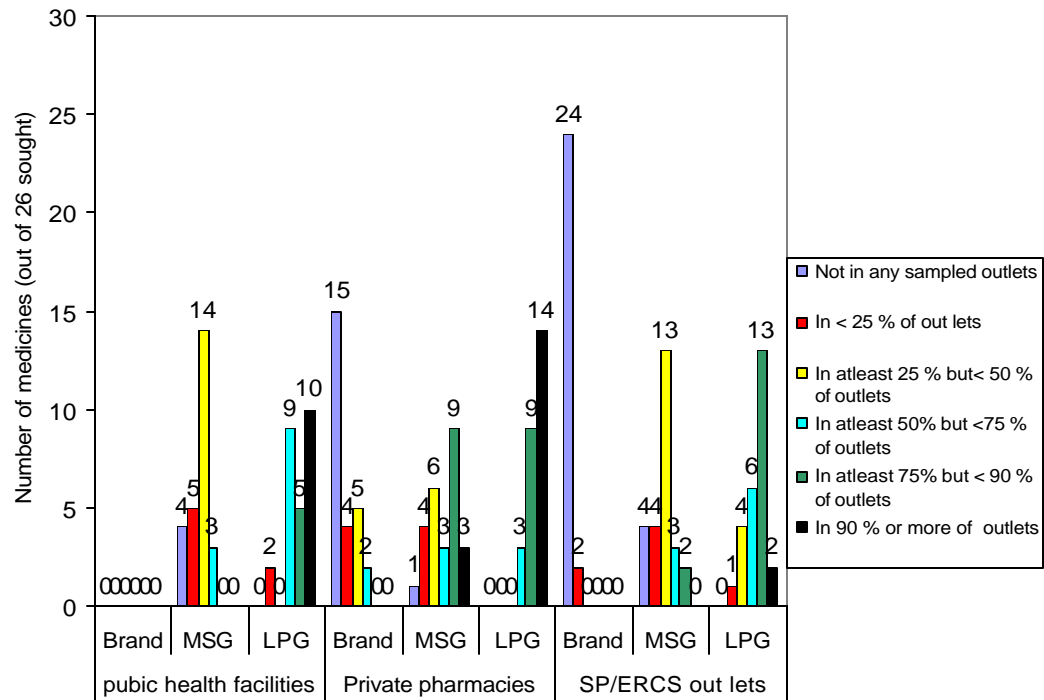


Figure 3 below presents availability of medicines from a different perspective. It shows the distribution of the 26 medicines included in the survey across sectors and by product types.

Figure 3 Distribution of 26 medicines sought across sectors and by product type



As indicated in the legend, availability of each product type in each sector is grouped into six levels. Numbers of medicines found in each group are shown in the graph. For example, some of the medicines were not found in any of the outlets surveyed. Others were almost always available in the sector (in 90 % or more of the surveyed outlets).

3.2.2.2 Comparison of over all medicines prices.

Table 11: Comparison of median MPRs of procurement with median MPRs in the three retail sectors.

Type of medicine	Ratio of Public health facilities patient price to procurement price	Ratio of Private pharmacies price to Procurement price	Ratio of SP/ERCS outlets price to procurement price
Brand			
Most Sold	193.7 %	298.5%	207.7 %
Lowest Price	222.2 %	371.5%	279.5 %

Table 11 compares public procurement prices with medicine charges to patients in public health facilities, private retail outlets and SP/ERCS retail outlets.

The figures show that public health facilities charge 93.7 % and 122.2 % mark-up on public procurement prices of most sold and lowest price generic equivalent products, respectively. The mark-ups are even higher in the private pharmacies and SP/ERCS outlets i.e. private pharmacies charge 198.5 % and 271.5 % mark-ups on public procurement prices of most sold and lowest price generics, respectively while the SP/ERCS outlets charge 107.7 % and 179.5 % mark-ups on public procurement prices of most sold and lowest price generics, respectively.

Table 12: Comparison of median MPRs of the three retail sectors

Type of medicine	Ratio of Private pharmacies to Public health facilities	Ratio of SP/ERCS outlets to Public health facilities	Ratio of SP/ERCS outlets to Private pharmacies
Brand			
Most Sold	169.2 %	115.9 %	70.4 %
Lowest Price	167.2 %	126.2 %	72.9 %

Table 12 and Figure 4 compare patient's charges in the public health facilities with charges in the private pharmacies and SP/ERCS medicine retail outlets.

Patient charges in the private pharmacies were 69.2 % and 67.2 % above patient charges in public health facilities with respect to most sold generics and lowest price generics, respectively.

On the other hand, patient charges in the private pharmacies were 29.6 % and 27.1 % above patient charges in the SP/ERCS outlets with respect to most sold generics and lowest price generics, respectively.

In SP/ERCS outlets, patient charges were 15.9 % and 26.2 % above patient charges in public health facilities with respect to most sold and lowest price generics, respectively.

Figure 4 Comparison of median MPRs of the three sectors

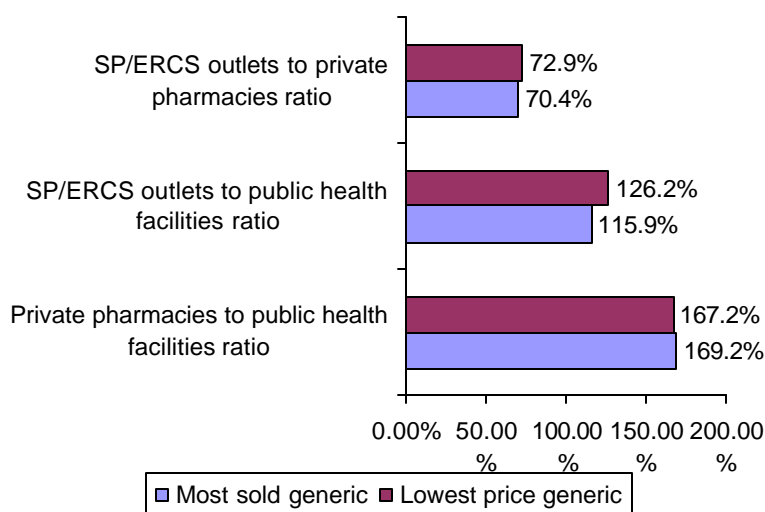


Table 13 Summary of Median MPR of medicines across sectors by medicine types.

Type of medicine	Public health facilities (n= 34)	Private pharmacies (n= 25)	SP/ERCS outlets (n= 28)
Brand		11.55	
Most sold	1.35	2.34	1.63
Lowest price	1.35	2.25	1.70

Table 13 above shows that the median of median price of both most sold and lowest price generic products in public health facilities were only 35 % above the international reference price. The medians of median price of these products in SP/ERCS retail outlets were 63 % and 70 % above the international reference price, respectively. This shows a relatively good price level for generic products in public health facilities and SP/ERCS retail outlets.

On the other hand, the median of median prices of most sold and lowest price generics in the private pharmacies were 134 % and 125 % above the international reference price. This shows a relatively higher price level in the private pharmacies.

3.3 Treatment Affordability

Affordability of the cost of a single course of therapy for 6 disease situations was measured by comparing it with the daily wage of the lowest paid government worker. The monthly salary of the lowest paid government worker is Birr 200 i.e. Birr 6.7 (approx. US\$ 0.80) per day. As an example of the above comparison, table 14 on page 25 illustrates the affordability of treatment cost in public health facilities, private pharmacies and SP/ERCS outlets for three chronic and three acute disease conditions.

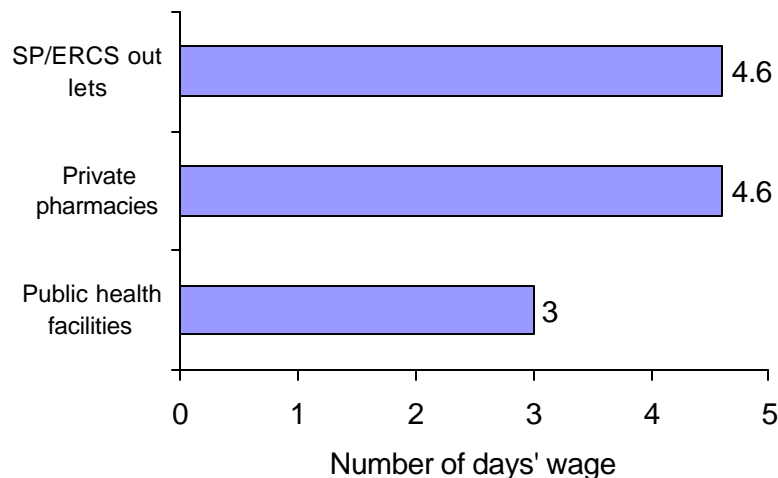
In order to purchase a course of innovator brand Amoxicillin from private pharmacies to treat pneumonia in an adult, a lowest paid government worker would need to work for 4.10 days.

To purchase the lowest price generically equivalent products of the same medicine from public health facilities, private pharmacies and SP/ERCS 1 outlets, he/she would need to work for 0.70, 0.90, and 0.80 days, respectively.

For a one-month course of glibenclamide to treat diabetes mellitus, a lowest paid government worker would need to pay his/her 10.3 days' wages for an innovator brand product in the private pharmacies. But, purchasing the generically equivalent products from public health facilities, private pharmacies and SP/ERCS outlets would require only his/her 0.80, 0.90 and 1.2 days' wages, respectively.

On the other hand, suppose we have an asthmatic child with Acute Respiratory Infection (ARI), an adult with diabetes mellitus and another adult with hypertension in a family. The breadwinner, who is a lowest paid government worker, will have to work for 3, 4.6 and 4.6 days to purchase the necessary lowest price generic (LPG) versions* from public health facilities, SP/ERCS medicine outlets and private pharmacies, respectively. This scenario illustrated by figure 5 above.

Figure 5 Cost of treatment of a combination of ARI, Asthma, hypertension, and diabetes mellitus in a family using LPG



The prices of Anti Retroviral (ARV) drugs were considered separately due to their particular nature. When compared with International Reference Price, their prices were quite reasonable. For example, the median price of Zidovudine + Lamivudine combination was only 0.93 times its International Reference Price. Others also had similar medicine price ratios. This is partly due to their exemption from import tax and partly because they are procured in a centralized competitive international bidding and dispensed to patients without retail mark up.

However, it does not mean that anti retro viral therapy is affordable to majority of the patients in Ethiopia. A monthly triple combination first line therapy [(ZDV + 3 TC) + EFV] costs Birr

* A combination of Cotrimoxazole paed, susp, Glibenclamide, Salbutamol and hydrochlorothiazide (Table 14).

690 (US\$ 80) and Birr 700 (US\$ 81) for lowest price generic and most sold generic combinations, respectively.

According to the 1999/2000 national survey (9), 44.2% of the Ethiopian population earn below US\$ 1 per day. The World Development Report (10) also reports for the same year that 80.7 % of the Ethiopian population gets below US\$ 2 per day.

The household income, consumption and expenditure survey conducted in 1999/2000 by the Central Statistical Authority of Ethiopia (11) indicates that only 3.6 % of the total household income is spent on medical care, transport, communication, education, recreation and entertainment. This is barely equivalent to one day's wage of a lowest paid government employee. But, it is important to note that this one day's wage is not meant to cover the cost of medicines only. In other words, the portion of monthly income of the lowest paid government employee that can be spent on medicines alone is much less than his/her one day's wage.

The above economic parameters when considered together show that costs of treatment for common diseases seem to be unaffordable to the majority of the population in Ethiopia.

Table 14: Cost of Treatment of some common diseases.

Treatment	Type of medicine	Public health facilities	Private pharmacies	SP/ERCS outlets
		Days' wage	Days' wage	Days' wage
Acute Respiratory Infection (adult): Amoxicillin 250mg, 21 tablets	Innovator Brand		4.10	
	Most sold generic equivalent			
	Lowest price generic equivalent	0.70	0.90	0.80
Malaria: Chloroquine Phosphate 250mg, 10 tablets	Innovator Brand			
	Most sold generic equivalent	0.10	0.20	0.10
	Lowest price generic equivalent	0.10	0.20	0.10
Diabetes mellitus: Glibenclamide 5mg, 60 tablets	Innovator Brand		10.30	
	Most sold generic equivalent	0.80	0.90	
	Lowest price generic equivalent	0.80	0.90	1.2
Asthma: Salbutamol 0.1 mg/dose inhaler, 1 bottle of 200 doses	Innovator Brand		6.00	
	Most sold generic equivalent	2.00	2.50	2.50
	Lowest price generic equivalent	1.70	2.70	2.50
Hypertension: Hydrochlorothiazide 25 mg, 30 tablets	Innovator Brand			
	Most sold generic equivalent		8.3	
	Lowest price generic equivalent	0.2	0.4	0.5
Acute Respiratory Infection (Child): Cotrimoxazole (200 +40) mg/5 ml, 100ml suspension	Innovator Brand		7.9	
	Most sold generic equivalent	0.4	0.6	0.4
	Lowest price generic equivalent	0.3	0.6	0.4

3.4 Price Composition

In order to see some of the reasons why prices differ between sectors, the prices of medicines to the final consumers were studied by breaking them down to their component parts. The findings are discussed as follows.

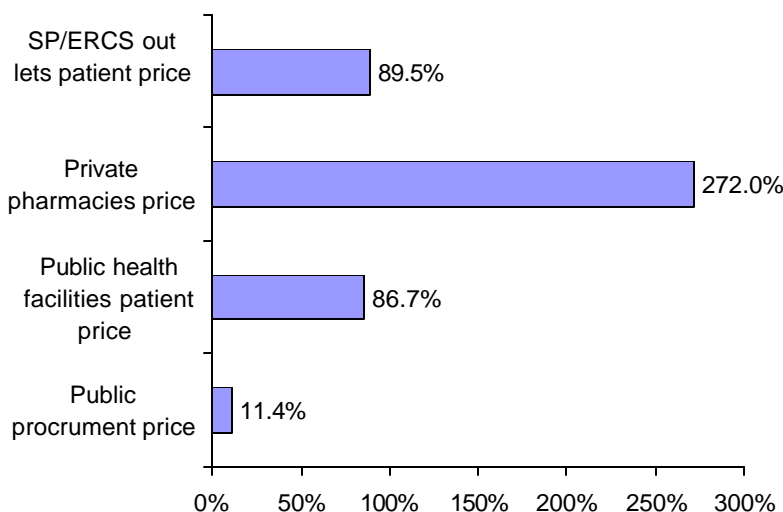
3.4.1 Cumulative mark-up by sector and product type

Table 15 Example of percent cumulative mark- up by sector.

Name of medicine	Type of medicine	Procurement price	Public health facilities patient charge	Private pharmacies price	SP/ERCS outlets patient charge
Cotrimoxazole (40 +80) mg/ml pediatric Suspension of 100 ml	Innovator brand			159.1 %	
	Most sold generic	0 %	104.5 %	272 %	
	Lowest price generic	11.4 %	86.7 %	272 %	89.5 %

Table 15 shows the summary of percent cumulative mark-ups of the Sector Median Unit Price (SMUP) over Manufacturer's Unit Price (CIF/FOB) in each sector. Patient charges in the public health facilities and private pharmacies included mark-ups of 104.5 % and 272 %, respectively over the manufacturer's price of the most sold generic version. For lowest price generic products, the mark-ups over the manufacturer's price were 86.7 %, 272 %, and 89.5 % with regard to patient charges in the public health facilities, private pharmacies and SP/ERCS medicine outlets, respectively. Figure 6 below better illustrates the cumulative mark up of Lowest price Generic (LPG) over the manufacturers' price.

Figure 6 Cumulative mark up of sector median unit price of LPG over manufacturers' unit price (CIF/FOB)



3.4.2 Components of prices

Components of the prices of medicines were measured in the public, private and SP/ERCS outlets for imported products. Table 16 on page 29 presents the components of the price of an imported lowest price generic version Cotrimoxazole paediatric suspension in the public health facilities.

The results are given both as percentage add-ons and cumulatively. The total add-ones to import price (CIF) of the product cumulate to about 83 %.

As there is no ceiling set by law on the wholesale and retail mark-ups in the country, the figures indicated as wholesale and retail mark-up are estimations based on examination of records and interviews with importers and retailers.

Figure 7 and 8 below present the different price components in slightly different ways by taking LPG cotrimoxazole paediatric suspension as a typical example .

The two figures indicate that retail mark-up adds the largest amount to the total mark-up followed by wholesale mark-up, handling cost and customs.

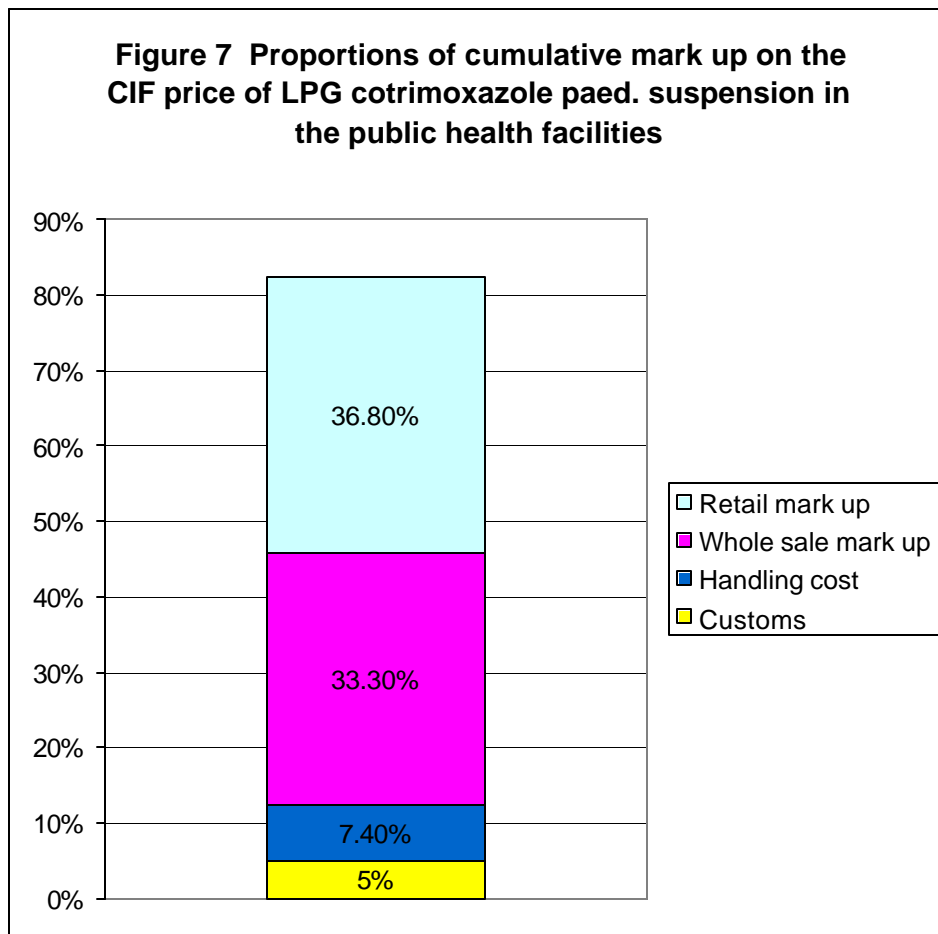


Figure 8 Components of the final price of LPG cotrimoxazole paed. suspension to patients in the public health facilities

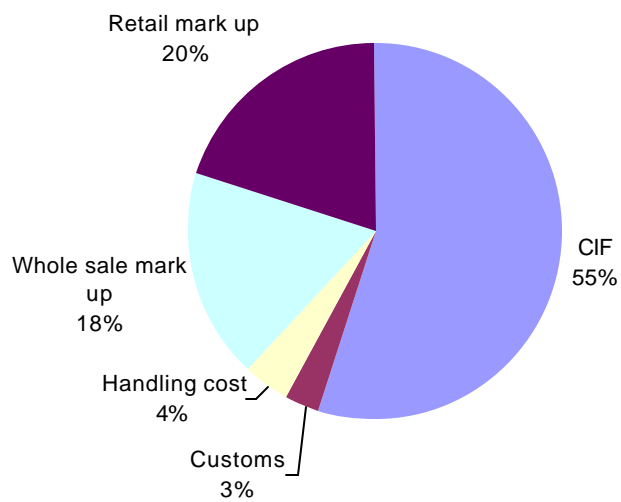


Table 16 Example of components of prices to patients in the public health facilities.

Describe sector and type of medicine: Lowest price generic version of cotrimoxazole paediatric suspension in the public health facilities									
Example 1: Medicine Name	Medicine Strength	Dosage Form	Target Pack Size	Dispensed Quantity	Type of Charge	Charge Basis	Amount of Charge	Price of Dispensed Quantity	Cumulative % Mark-up
Co-trimoxazole suspension	8+40 mg/ml	millilitre	70	100	Cost, insurance, freight (CIF) price	NA	NA	2.04	0.00%
					Customs	percent	5.00%	2.15	5.00%
					Handling cost	percent	7.00%	2.30	12.35%
					Whole sale mark-up	percent	30.00%	2.98	46.06%
					Retail mark-up	percent	25.00%	3.73	82.57%

4. International Comparison of prices and treatment affordability

The prices of medicines and affordability of treatment costs in Ethiopia are compared with that of other African countries.

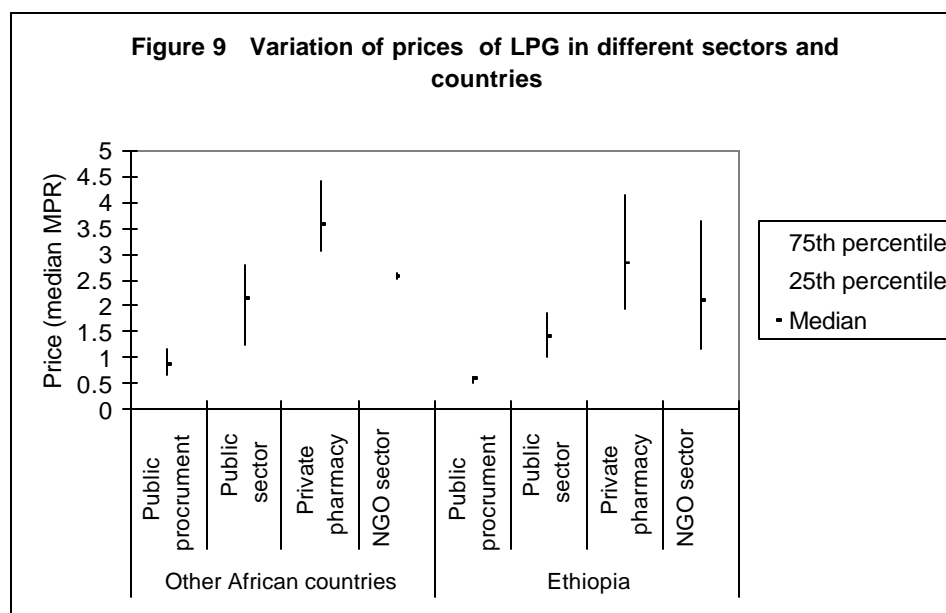
4.1 Comparison of price

4.1.1 Comparison of sector median prices of core medicines

Table 17 International comparison of median MPRs of core medicines

Particulars	Number of countries included	Data of other African countries			Data from Ethiopia		
		Median	25 th percentile	75 th percentile	Median	25 th percentile	75 th percentile
Public procurement median MPR LPG	8	0.86	0.65	1.16	0.59	0.50	0.61
Public sector patient median MPR LPG	6	2.11	1.25	2.78	1.41	1.00	1.88
NGO sector patient median MPR LPG*	5	2.56	2.51	2.63	2.09	1.15	3.64
Private pharmacy patient median MPR LPG	8	3.56	3.04	4.41	2.82	1.93	4.13
Private pharmacy patient median MPR IB	8	16.39	14.35	17.73	13.51	8.74	24.20

As Table 17 above shows, the median MPRs of core medicines in all sectors in Ethiopia are lower than the median MPRs of the other African countries (all less than the 25th percentiles).

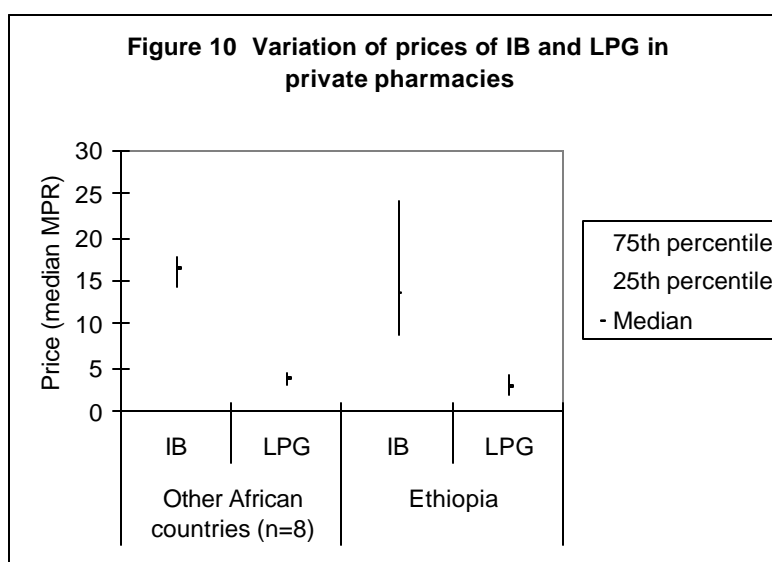


Variations in the prices of Lowest Price Generic (LPG) medicines in public procurement agencies and public sector (i.e. public health facilities) of Ethiopia are lower than that of other

* In the Ethiopian context, it is patient price in SP/ERCS retail out lets.

African countries. But, price variations in private pharmacies and NGO sector (SP/ERCS retail outlets in the Ethiopian context) of Ethiopia are higher than that of the other African countries (see Fig. 9 above).

Figure 10 below also illustrates that the variations in the prices of both Innovator Brand (IB) and LPG medicines are higher in Ethiopia; the variation in the price of IB medicines being more marked than variations in the prices of LPG medicines.



4.1.2 Comparison of median prices of individual core medicines

Table 18 International comparison of the median MPRs of IB core medicines in private pharmacies

Medicine	Number of countries included	Data of other African countries			Data from Ethiopia		
		Median	25 th percentile	75 th percentile	Median	25 th percentile	75 th percentile
Amoxicillin 250 mg cap.	5	8.74	7.15	15.22	8.74	8.69	9.75
Glibenclamide 5 mg tab.	5	49.24	33.93	60.02	32.45	31.04	33.86
Salbutamol inhaler, 0.1 mg /dose	7	3.78	2.61	4.51	2.39	2.33	2.50
Sulphadoxine-pyrimethamine (500+25 mg) tab.	7	13.58	12.81	15.46	13.51	13.45	13.51

The median MPRs of most of the innovator brand products of the core medicines listed in Table 18 above are lower than that of the other African countries.

Figure 11 below shows that the variations in the prices of IB medicines in Ethiopia are lower than that of the other African countries; the variation in the price of Glibenclamide in the other African countries was the highest (nearly ten times that in Ethiopia) followed by Amoxicillin.

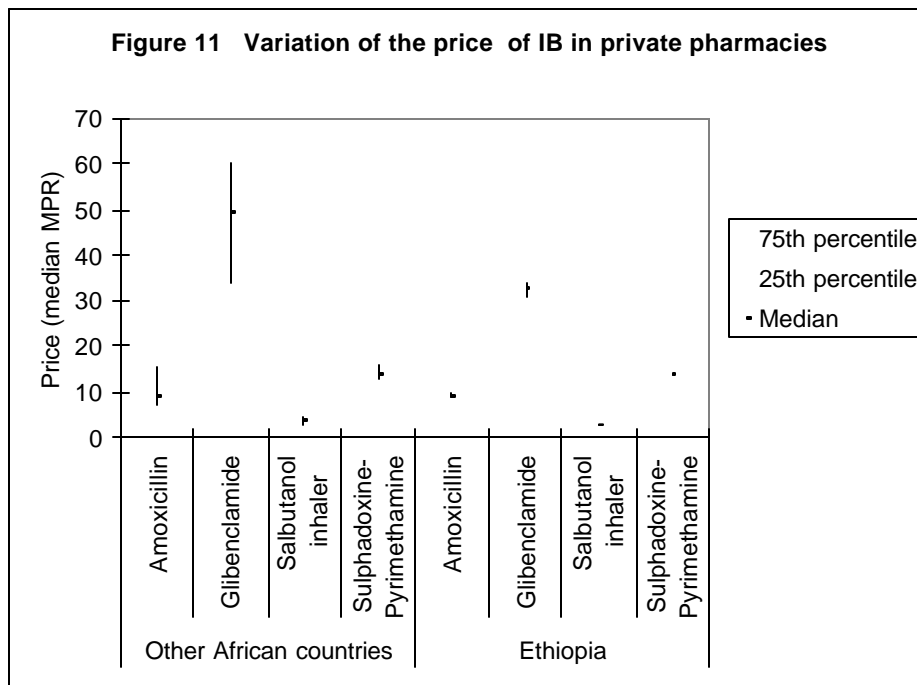


Table 19 International comparison of the median MPR of LPG core medicines in private pharmacies

Medicine	Number of countries included	Data of other African countries			Data from Ethiopia		
		Median	25 th percentile	75 th percentile	Median	25 th percentile	75 th percentile
Aciclovir 200 mg tab.	8	3.45	2.14	4.71	1.19	0.91	1.43
Amoxicillin 250 mg cap.	8	1.92	1.75	2.31	2.02	2.02	2.35
Cotrimoxazole paediatric suspension (8+40) mg/ml	8	1.93	1.90	3.35	1.93	1.93	2.25
Diazepam 5 mg tab.	8	4.44	2.91	6.94	7.44	6.61	9.92
Diclofenac 25 mg tab.	4	7.06	6.35	8.07	5.67	4.54	6.49
Glibenclamide 5 mg tab.	8	7.47	4.81	12.15	2.82	2.82	3.53
Hydrochlorthiazide 25 mg tab.	6	4.88	3.60	22.99	3.31	3.31	6.61
Salbutamol inhaler, 0.1 mg /dose	7	1.78	1.28	2.20	1.07	0.99	1.07
Sulphadoxine-pyrimethamine (500+25 mg) tab.	7	4.13	3.52	4.62	4.13	2.36	4.50

On the other hand, Table 19 above shows that the MPRs of nearly half of the LPG medicines sold in the private pharmacies of Ethiopia are lower than the corresponding median MPRs of the other African countries.

Comparison of the price variations indicates that two-third of the LPG medicines have lower variations while a third of them have higher variation than that of the other African countries; the price variations of Glibenclamide and Hydrochlorothiazide in the other African countries were highest (nearly six times that of Ethiopia).

4.2 Comparison of treatments affordability

Table 20 and 21 below compare affordability in terms of number of days' wage of a lowest paid government worker required to treat the specified diseases using IB and LPG core medicines bought from private pharmacies, respectively.

The data of both tables show that the costs of treating the diseases in Ethiopia require more number of days' wage than in the other African countries. This finding indicates that the cost of treating diseases in Ethiopia is less affordable to low income people.

Table 20 International comparison of affordability (number of days' wage required) in private pharmacies (IB)

Disease	Medicine	Number of countries included	Data of other African countries			Data from Ethiopia
			Median	25 th percentile	75 th percentile	Number of days' wage
Diabetes	Glibenclamide	5	7.20	6.10	10.30	10.30
Adult ARI	Amoxicilline	4	1.50	1.20	2.33	4.10
Asthma	Salbutamol inhaler	6	4.45	2.85	5.83	6.00
Malaria	Sulphadoxine-pyrimethamine	7	0.80	0.70	1.20	1.30

Table 21 International comparison of affordability (Number of days' wage required) in private pharmacies (LPG)

Disease	Medicine	Number of countries included	Data from other African countries			Data from Ethiopia
			Median	25 th percentile	75 th percentile	Number of days' wage
Diabetes	Glibenclamide	8	1.25	0.80	1.33	0.90
Hypertension	Hydrochlorothiazide	7	0.40	0.25	1.10	0.40
Adult ARI	Amoxicilline	7	0.40	0.35	0.60	0.90
Paediatric ARI	Cotrimoxazole suspension	8	0.45	0.28	0.60	0.60
Asthma	Salbutamol inhaler	7	2.00	1.60	3.60	2.70
Malaria	Sulphadoxine-pyrimethamine	7	0.30	0.20	0.35	0.40

5. DISCUSSION

The survey of medicines prices in Ethiopia shows that procurement agencies are purchasing medicines at internationally competitive prices. Public procurement prices in Ethiopia were lower than the international reference prices by 29 % and 39 % with respect to most sold and lowest price generic products, respectively. This procurement price level should be maintained, if not improved.

In general, prices of medicines were lowest in public health facilities and highest in private pharmacies. Prices in SP/ERCS retail outlets were in between that of the two sectors.

When compared with International Reference Prices, the prices of generic products in public health facilities and SP/ERCS medicine outlets were quite good. But their prices in the private pharmacies were relatively high. There was no marked difference in the prices of most sold and generic versions in the same sector and their price variation between medicine outlets also had the same trend.

Comparison of the prices of core medicines in all sectors in Ethiopia with their prices in other African countries has shown that Ethiopia has a relatively cheaper patient prices and procurement prices. However, price variations of LPG core medicines were lower in public procurement agencies and public health facilities but higher in private pharmacies and SP/ERCS pharmacies.

Innovator brand products generally had higher prices than their generic equivalents. For example, innovator brand products in the private pharmacies were 5.9 times as expensive as the most sold and 5.7 times as expensive as the lowest price generic equivalents.

When compared with international reference prices, individual innovator brand products also had high median price ratio. For instance, cotrimoxazole tablet was nearly 50 times the international reference price (MPR= 49.44). Some generic equivalents also had even higher price ratio. For example, Hydrochlorothiazide tablet (Esidrex^R) in the private pharmacies was 61 times the international reference price (MPR = 61.36). But this may be due to problems in classifying medicines as innovator brand and generic product.

In general, availability of medicines in public health facilities was lower than in the private pharmacies but comparable to availability in SP/ERCS medicine outlets.

Innovator brand products were not available in public health facilities and were hardly available in SP/ERCS medicine outlets. They were not also available in the government procurement agencies since they purchase drugs in generic name. This shows effective generic policy implementation in the public sector.

Availability of the generic equivalents varied from sector to sector and from medicine-to-medicine. For example, availability of lowest price generics was 76.5 %, 96 % and 78.6 % in the public health facilities, private pharmacies and SP/ERCS outlets, respectively. In contrast availability of most sold generics was 29.4 %, 68 % and 37.5 % in the public health facilities, private pharmacies and SP/ERCS outlets, respectively.

Investigation of the availability of 10 commonly used medicines revealed that availability of all of them in public health facilities was inadequate (i.e. less than 75 %). As a result of the government policy, Anti retro viral drugs were available only in ERCS medicine outlets

Measured in terms of affordability, the cost of treating common diseases varied between innovator products and generic versions. For example, there was nearly 4-fold difference between the price of innovator brand of amoxicillin and its generic equivalent in the private pharmacies. Nearly 12-fold difference was also observed between the price of innovator brand glibenclamide and its generic equivalent in the private pharmacies.

When a family with a combination of four disease conditions is considered, it was shown that the breadwinner, who is a lowest paid government employee, would need to work for nearly 3, 4.6 and 4.6 days to purchase the necessary lowest price generic version medicines from public health facilities, SP/ERCS medicine outlets and private pharmacies, respectively.

A monthly supply of first line generic triple combination Anti Retroviral regimen [(ZDV + 3 TC) + EFV] requires 3.5 month's wage of the lowest paid government employee.

When the above situations are seen in the light of the income level of the Ethiopian people and the proportion of the total household income spent on medicines, it seems that costs of treatment of common diseases are unaffordable to the majority of the Ethiopian people.

Comparison of affordability of treatment costs in private pharmacies of Ethiopia with that of other African countries has also shown that cost of treatment in Ethiopia is less affordable.

Regarding mark-ups on medicines prices, there is no ceiling set by law on the wholesale and retail mark-ups in all sectors. However, through interviews and observations during data collection, it was noted that wholesale mark-ups in general range from 20% - 40% of the landed costs of imported products and 5% -10% of the ex-factory prices of locally manufactured products.

Retail mark-ups range from 20% - 30%, depending on the type of the sector. But the rates in the private sector are unpredictable.

Components of the prices of medicine consisted, among others, a 5% import tax on imported medicines, except Anti Retroviral drugs. All finished medicines are exempted from Value Added Tax (VAT). It was observed that the major contributors to the total cost of medicines to patients were retail mark-ups followed by wholesale mark-ups.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The principal conclusions of the study are as follows:

Availability

- The over all availability of medicines in the public health facilities and SP/ERCS retail outlets was very low. Consequently, patients are forced to purchase drugs at higher prices in private pharmacies or go to informal sector or forgo treatment.
- Innovator brand products were not available in public health facilities and were hardly available in SP/ERCS medicine outlets. They were not available in the government procurement agencies either.
- Lowest generic equivalent products had better availability than most sold generic equivalent products.

Price

- The public sector in Ethiopia charges reasonably low prices to patients as compared with International Reference Prices. Comparison with other African countries has also shown that Ethiopia has a relatively cheaper generic patient prices and procurement prices.
- In general, prices of medicines were lowest in public health facilities and highest in private pharmacies. Prices in SP/ERCS retail outlets were in between that of the two sectors.
- When compared with International Reference Prices, the prices of generic products in public health facilities and SP/ERCS medicine outlets were quite good. But their prices in the private pharmacies were relatively high.
- There was no marked difference in the prices of most sold and lowest price generic versions in the same sector and their price variation between medicine outlets also had the same trend. The cheapest generic equivalent is not always the most sold.
- The prices of innovator brands were considerably higher than prices of their generic equivalents. However, comparison with other African countries has shown that innovator brand products have a relatively cheaper price in Ethiopia but wider price variation.

Affordability

- Costs of treatment of common diseases were lowest in public health facilities followed by SP/ERCS retail outlets and private pharmacies. The cost was also highest if innovator brand products are used instead of generic equivalent products.

- Given the low -income level of majority of the Ethiopian people and the proportion of total household income spent on medicines, it seems that costs of treatment of common disease are unaffordable to the majority of the Ethiopian people.
- Comparison of affordability of cost of treatment in the private pharmacies of Ethiopia with that of other African countries has shown that cost of treatment in Ethiopia is less affordable despite lower median price in Ethiopia. This may be due to the low income level in Ethiopia
- There is no control on prices of medicines in Ethiopia. Consequently, wholesale and retail mark ups vary from sector to sector and from medicine-to-medicine depending on the market situation.

Price components

- The major contributors to the total cost of medicines to patients were retail mark-ups followed by wholesale mark-ups.

6.2 Recommendations

Based on the above findings, the following recommendations are made:

Availability and Price

- Investigate the cause of low availability of medicines in the public health facilities and SP/ERCS medicine retail outlets.
- Uphold/maintain the generic policy implementation in the procurement of medicines.

Affordability

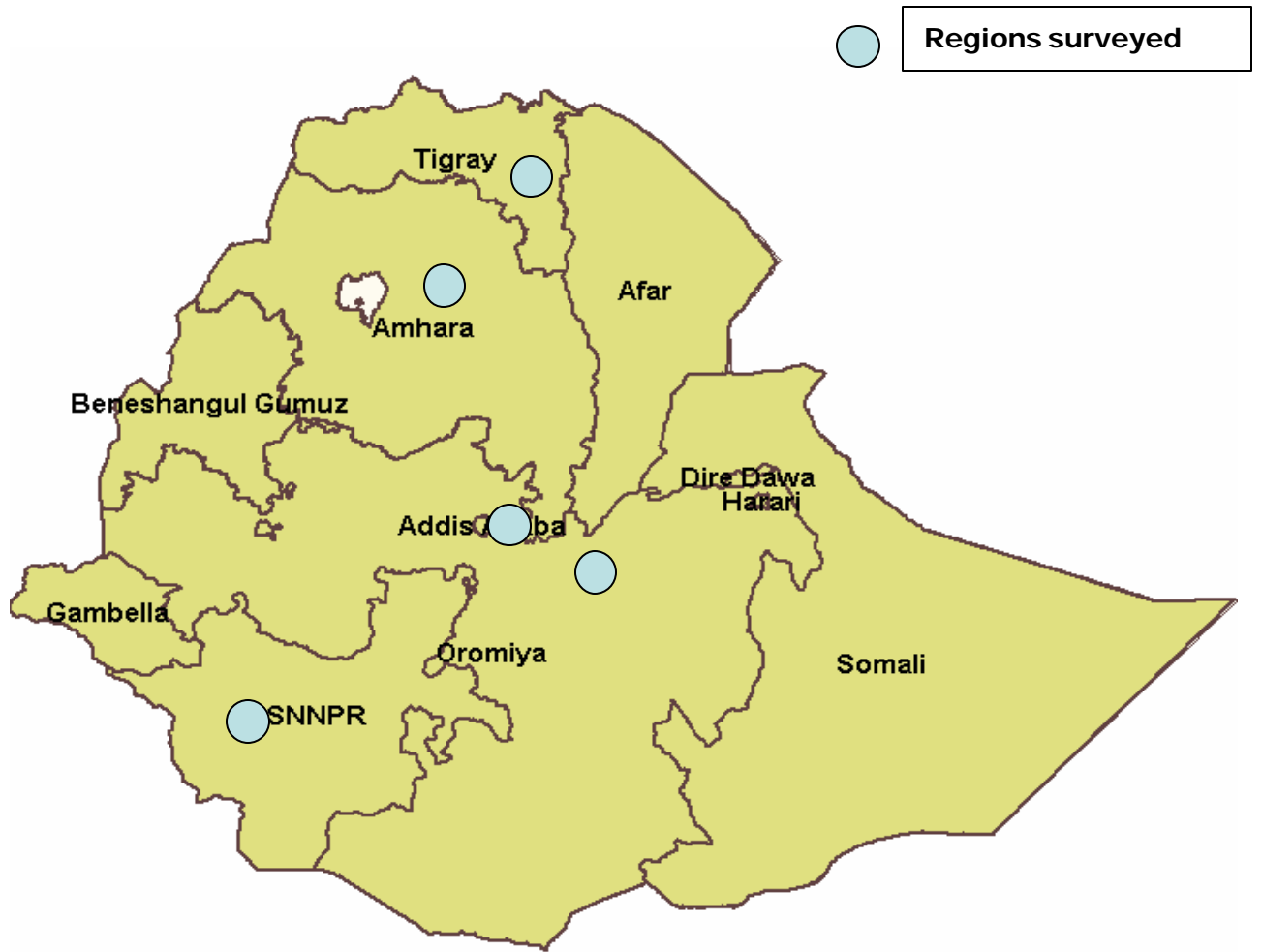
In order to increase affordability, consider different strategies such as:

- Development of a pricing policy which could contain aspects of price control and incentives to reduce prices;
- Different financing options such as community revolving drug schemes and health insurance schemes;
- Introduction /revision of exemptions or differential fee system to ensure access by the poorest;
- Conducting regular education programs on the essential drugs concept and rational drug use to health personnel and the public in order not to lose the gains from the effective generic policy implementation;
- Undertaking in-depth study on pricing system in public health facilities to find out the reasons for variations in price levels of medicines.

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ANNEX I Administrative regions of Ethiopia



Annex II List of Medicines included in the survey

Med. No.	Medicine Name	Medicine Strength	Dosage Form	Target Pack Size	Core List (yes/no)	"Innovator" Product			Most Sold Generic Version (Nat'l)		
						Name	Manufacturer	Country of Production	Name	Manufacturer	Country of Production
1	Aciclovir	200mg	tab	25	y	Zovirax	GSK	U.K.	Cyclovir	Cadila	India
2	Amoxicillin	250mg	cap/tab	21	y	Amoxil	SKB (GSK)	U.K.	Z mox	Aurobindo	India
3	Co-trimoxazole susp.	8+40mg/ml	susp	100ml	y	Bactrim	Roche	Switzerland	Cadiprim	Cadila	India
4	Diazepam	5mg	tab	100	y	Valium	Roche	Switzerland	Neuril	CID	Egypt
5	Diclofenac	25mg	tab	100	y	Voltarol	Novartis	Switzerland	Dyclomax	GSK	K.K.
6	Glibenclamide	5mg	tab	60	y	Daonil	HMR	Germany	Betanase	Cadila	India
7	Hydrochlorthiazide	25mg	tab	30	y	Dichlotride	MSD	U.K.	Esidrex	Novartis	Switzerland
8	Pyrimethamine/Sulphadoxine	25+500mg	tab	3	y	Fansidar	Roche	Switzerland	Laridox	IPCA	India
9	Salbutamol inhaler	0.1mg/dose	inhaler	200doses	y	Ventoline	GSK	U.K.	Aerolin	EPICO	Egypt
10	Promethazine	25mg	tab	100	n				Promethazine	EPHARM	Ethiopia
11	Metronidazole	250m g	cap	60	n	Flagyl	Aventis	Switzerland	Metronidazole	EPHARM	Ethiopia
12	Mebendazole	100mg	tab	6	n	Vermox	Janssen Pharma	Belgium	Wormin	Cadila	India
13	Penicillin Procaine Benzyl	4 MIU/vial	vial	1 vial	n				Procaine Penicillin fortified	EPHARM	Ethiopia
14	Tetracycline eye ointment	1%	eye oint	5 gram	n	Acromycin	Lederle		Tetracycline	Shanghai	China
15	Benzyl benzoate lotion	25%	top. lotion	125ml	n				Benzyl benzoate	EPHARM	Ethiopia
16	Methyldopa	250mg	Tab	60	n	Aldomet	MSD	Netherlands	Dopegyt	Egis	Hungary
17	Niclosamide	500mg	Tab	4	n	Yomesan	Bayer	Germany	Niclosamide	EPHARM	Ethiopia

Med. No.	Medicine Name	Medicine Strength	Dosage Form	Target Pack Size	Core List (yes/no)	"Innovator" Product			Most Sold Generic Version (Nat'l)		
						Name	Manufacturer	Country of Production	Name	Manufacturer	Country of Production
18	Clotrimazole topical cream	1%	cream	15 gram	n	Canestan	Bayer	Germany	Clotrimazole	Shanghai	China
19	Chloroquine phosphate	250mg	Tab	10	n	Nivaquine	Rhone-Poulenc Rorer	France	Chloroquine phosphate	EPHARM	Ethiopia
20	Co-trimoxazole	400+80mg	Tab	20	n	Bactrim	Roche	Switzerland	Cotrimol	IPCA	India
21	Chloramphenicol	250mg	Cap	100	n				Chloramphenicol	EPHARM	Ethiopia
22	Penicillin G sodium crystalline inj	1MIU/vial	vial	1 vial	n				Penicillin G, sodium crystalline	EPHARM	Ethiopia
23	Sodium Chloride IV inj	0.9%	IV soln	1000ml	n				Sodium chloride	EPHARM	Ethiopia
24	Quinine dihydrochloride inj	300mg/ml	ampoule	2ml	n				Quininject	Medreich	India
25	Diclofenac	50mg	Tab	100	n	Voltarol	Novartis	Switzerland	Dyclomax	GSK	U.K.
26	Amoxicillin	500mg	Cap	21	n	Amoxil	SKB (GSK)	U.K.	Z mox	Aurobindo	India
1	Lamivudine (3TC)	150mg	Tab	60	n	Epivir	GSK	U.K.	Avolam	Ranbaxy	India
2	Stavudine (d4T)	40mg	Tab	60	n	Zerit	BMS	France	Avostav	Ranbaxy	India
3	Efavirenz (EFV)	200mg	Cap	90	n	Sustiva	BMS	France	Stocrin	MSD	Netherlands
4	Lamivudine + Zidovudine	150+300 mg	Tab	60	n	Combivir	GSK	U.K.	Lamuzid	Cadila (Zydus)	India
5	Nevirapine	200mg	Tab	60	y	Viramune	Boehringer I	Germany	Nevipan	Ranbaxy	India

Annex III List of facilities and outlets sampled

GEOGRAPHICAL AREA: Tigray region

Public sector	Private sector	Other sector
Adigrat hospital	Amare pharmacy	Adigrat hospital Special pharmacy
Axum St. Mary hospital	Abeba pharmacy	ERCS Mekele pharmacy
Abi Adi hospital	Ethiopia pharmacy	Axum St. Mary hospital Special pharmacy
Quiha hospital	St. George pharmacy	Woukro hospital Special pharmacy
Semien Health centre	Tinsae Pharmacy	

GEOGRAPHICAL AREA: Amhara region

Public sector	Private sector	Other sector
Gondar university hospital	Bata pharmacy	Gondar university hospital Special pharmacy
Felege hiwot hospital	Goha pharmacy	Bahir Dar ERCS pharmacy
Finote selam hospital	Nile pharmacy	Finote selam hospital Special pharmacy
Debre Tabor hospital	St. Gabriel pharmacy	Felege hiwot hospital Special pharmacy
Lalibela hospital	Silase pharmacy	Debre Tabor hospital Special pharmacy
Motta Health centre		Lalibela hospital Special pharmacy
Adet Health centre		Motta hospital special pharmacy

GEOGRAPHICAL AREA: SNNPR

Public sector	Private sector	Other sector
Arba Minch hospital	Biruk pharmacy	Butajira hospital Special pharmacy
Aleta wondo health centre	Alpha pharmacy	Dilla hospital Special pharmacy
Bodity health centre	Getachew pharmacy	Hossan hospital special pharmacy
Yirgalem hospital	Addis hiwot pharmacy	Arba Minch ERCS pharmacy
Soddo hospital	Shiferaw pharmacy	Awassa ERCS pharmacy

GEOGRAPHICAL AREA: Oromiya region

Public sector	Private sector	Other sector
Assela hospital	Fentale pharmacy	Bishoftu hospital Special pharmacy
Adama hospital	M.T. pharmacy	Bishoftu ERCS pharmacy
Fitche hospital	Tinsae pharmacy	Fitche hospital Special pharmacy
Bishoftu hospital	Nazrawi pharmacy	Adama ERCS pharmacy
Shashemene hospital	Amare pharmacy	Shashemene hospital Special pharmacy
Metehara health centre		Assela hospital Special pharmacy
Ziway health centre		Adama hospital Special pharmacy
Sebeta health centre		
Mojo health centre		

GEOGRAPHICAL AREA: Addis Ababa

Public sector	Private sector	Other sector
Zewditu hospital	Aster pharmacy	St. Paul hospital Special pharmacy
Ras Desta hospital	Lukas pharmacy	Black Lion hospital Special pharmacy
Yekatit 12 hospital	Kidus pharmacy	ERCS pharmacy No. 1
Kazanchis health centre	Redeate pharmacy	ERCS pharmacy No. 2
Woreda 17 health centre	Harar pharmacy	Kotebe health centre Special pharmacy
Arada health centre		
Meshualekia Health centre		
Lideta health centre		

Annex IV National Pharmaceutical Sector form

Date: *10 September 2004*

Country: *Ethiopia*

Population: *71,066,000 [1996 E.C (2003/2004 G.C.)]*

Rate of exchange (commercial “buy” rate) to US dollars on the first day of data collection: *One USD = 8.6432 Birr (Source: Inter Bank Forex Rate Bulletin, 15 September 2004)*

Sources of information:

- 1. Health and health related indicators, planning and Programming department, MOH, 1995E.C*
- 2. Assessment of the pharmaceutical sector in Ethiopia, FMOH/WHO, 2003*
- 3. Results of Interview with the staff of Drug Administration and Control Authority*
- 4. Results of interview with the staff of PHARMID*
- 5. Results of interview with the staff of Ethiopian Red Cross Society (ERCS) essential drug project*
- 6. Results of interview with the staff of Pharmaceuticals Administration and Supplies Service (PASS), MOH*

General information on the pharmaceutical sector

Is there a formal National Medicines Policy document covering both the public and private sectors? Yes No

Is an Essential Medicines List (EML) available? Yes No

If yes, state total number of medicines on national EML: 282 (draft EML)

If yes, year of last revision: 2004 (draft)

If yes, is it (tick 3all that apply):

- National
- Regional
- Public sector only
- Both public and private sectors
- Other (please specify):

If yes, is the EML being used (tick 3all that apply):

- For registration of medicines nationally
- Public sector procurement only
- Insurance and/or reimbursement schemes
- Private sector
- Public sector

Is there a policy for generic prescribing or substitution? Yes No

Are there incentives for generic prescribing or substitution? Yes No

Public procurement⁵

Is procurement in the public sector limited to a selection of essential medicines? Yes No

If no, please specify if any other limitation is in force: National list of Drugs

Type of public sector procurement (tick 3all that apply):

- International, competitive tender
 - Open
 - Closed (restricted)
 - Negotiation/direct purchasing
- National, competitive tender
 - Open
 - Closed (restricted)
 - Negotiation/direct purchasing

⁵ If there is a public procurement system, there is usually a limited list of items that can be procured. Products procured on international tenders are sometimes registered in the recipient country only by generic names. Import permits to named suppliers are issued based on the approved list of tender awards. An open tender is one that is publicly announced; a closed one is sent to a selection of approved suppliers.

Are the products purchased all registered? Yes No
 Is there a local preference?⁶ Yes No
 Are there public health programmes fully implemented by donor assistance which also provide medicines? Yes No
 (e.g. TB, family planning, etc.)

If yes, please specify: *TB/Leprosy control and Family planning*

Distribution⁷

Is there a public sector distribution centre/warehouse? Yes No

If yes, specify levels: *national, regional, Zonal and district*

Are there private not-for-profit distribution centres: Yes No
 e.g. missions/nongovernmental organizations?

If yes, please specify: *missions/nongovernmental organizations*

Number of licensed wholesalers: *91 (37 wholesalers and 54 importers & whole sale distributors)*

Retail [(1995 E.C 2003/2004 G.C)]

	Urban	Rural	Overall
Number of inhabitants per pharmacy (approx.)			25,842,181
Number of inhabitants per qualified pharmacist (approx.)			161,890
Number of pharmacies with qualified pharmacists			275
Number of medicine outlets with pharmacy technician			375
Number of other licensed medicine outlets			1783

Private sector⁸

Are there independent pharmacies? Yes No Number: **212**
 Are there chain pharmacies? Yes No Number:
 Do doctors dispense medicines?⁹ Yes No

If yes, approximate coverage or % of doctors who dispense:

Are there pharmacies or medicine outlets in health facilities? Yes No

⁶ A local preference means that local companies will be preferred even if their prices are not the cheapest. Local preference is normally in the range of 10–20%.

⁷ The public sector often has a central storage and distribution centre which may have at least one sublevel. The private not-for-profit sector may be dominated by one type of NGO (e.g. church missions), but may also comprise others such as Bamako Initiative type projects, Red Cross or Red Crescent Society, Médecins Sans Frontières.

⁸ Retail outlets may be called pharmacies, medicine outlets, drug stores, chemists, etc. They may be run/owned by a qualified pharmacist (with diploma) or another category: e.g. pharmacy technician, or a lay person with short training.

⁹ Many countries allow doctors to dispense and sell medicines.

Financing

(Give approximate figures, converted to US dollars at current exchange rate: commercial “buy” rate on the first day of data collection)

Type of expenditure	Approximate annual budget (US dollars)
National public expenditure on medicines including government insurance, military, local purchases in past year	30 million (2002/03 G.C)
Estimated total private medicine expenditure in past year (out of pocket, private insurance, NGO/mission)	Unknown
Total value of international medicine aid or donations in past year	12.3 million (2002/03 G.C)
What percentage of medicines by value are imported?	Unknown

Government price policy

Is there a medicines regulatory authority? Yes No
Is pricing regulated? Yes No
Is setting prices part of market authorization/registration? Yes No
Do registration fees differ between:

- Innovator brand and generic equivalents Yes No
- Imported and locally produced medicines Yes No

Public sector

Are there margins (mark-ups) in the distribution chain? Yes No

- Central medical stores (PHARMID: 20-40 % for imports, 5-10 % for local products)
- Regional store No additional profit margin
- Other store (specify) %
- Public medicine outlet

Are there any other fees or levies? Yes No

If yes, please describe:

Private retail sector

Are there maximum profit margins? Yes No

If yes (if they vary, give maximum and minimum):

- Wholesale % (20-40% for imported products; 5-10% for local products)
- Retail % (20-30%)

Is there a maximum retail price (sales price)? Yes No
(If it varies, give maximum and minimum)

■ Maximum:

■ Minimum:

Do patients pay professional fees (e.g. dispensing fee)? Yes No

If yes, please describe:

“Other” sector”

Are there maximum profit margins? Yes No

If yes (if they vary, give maximum and minimum):

■ Wholesale *(20 % of the landed cost for ERCS)*

■ Retail *(20% for municipality pharmacies; 25% for special pharmacies and ERCS pharmacies)*

Is there a maximum sales price? Yes No

Insurance, risk-sharing or prepayment schemes

Are there any health insurance, risk-sharing or Yes No prepayment schemes or revolving medicine funds?

If yes, please describe: *Some organizations cover the cost of drugs prescribed for their employees; poor patients will be provided drugs free of charge upon submission of certificate of exemptions from local administrations.*

Are all medicines covered? Yes No

If no, state which medicines are covered (e.g. EML, public health programmes):

Are some patients / groups of patients exempted, regardless of insurance coverage? (e.g. children < X yrs, war veterans) Yes No

If yes, please specify:

Estimated percentage of population covered _____ %

Is it official policy to supply all medicines free at primary health care level? Yes No

If no, are some free? Yes No

If yes, tick 3 all that apply:

Tuberculosis

Malaria

Oral rehydration salts

Family planning

Others, please specify: *Leprosy*

Are there official user charges/patient co-payments/fees? Yes No

Are all medicines supplied free at hospitals? Yes No

If no, are some free? Yes No

If yes, please specify: *Anti TB/Leprosy drugs and family planning drugs & supplies*

Annex V Medicine Price Data Collection form

Use one form for each health facility and pharmacy

Date:

Area number:

Name of town/village/district:

Name of health facility/pharmacy (optional):

Health facility/pharmacy ID (mandatory):

Distance in km from nearest town (population >50 000):

Type of health facility:

Public Private retail pharmacy

Other (please specify):

Type of price in public and private not-for-profit sector:

Procurement price Price the patient pays

Name of manager of the facility:

Name of person(s) who provided information on medicine prices and availability (if different):

Data collectors:

Verification

To be completed by the area supervisor at the end of the day

Signed:

Date:

MEDICINE PRICE DATA COLLECTION FORM

Most sold: determined nationally **Lowest price: determined at facility**

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	Brand name(s)	Manufacturer	Available tick ✓ for yes	Pack size recommended	Pack size found	Price of pack found	Unit price (4 digits)	Comments
Aciclovir tab 200 mg	Zovirax	GSK		25			/tab	
<i>Most sold generic equivalent</i>	Cyclovir	Cadila		25				
<i>Lowest price generic equivalent</i>				25				
Amoxicillin caps/tab 250 mg	Amoxil	SKB (GSK)		21			/tab	
<i>Most sold generic equivalent</i>	Z mox	Aurobindo		21				
<i>Lowest price generic equivalent</i>				21				
Co-trimoxazole paed suspension (8+40) mg/mL	Bactrim	Roche		100 mL			/mL	
<i>Most sold generic equivalent</i>	Cadiprim	Cadila		100 mL				
<i>Lowest price generic equivalent</i>				100 mL				
Diazepam tab 5 mg	Valium	Roche		100			/tab	
<i>Most sold generic equivalent</i>	Neuril	CID		100				
<i>Lowest price generic equivalent</i>				100				
Diclofenac tab 25 mg	Voltarol	Novartis		100			/tab	
<i>Most sold generic equivalent</i>	Dyclomax	GSK		100				
<i>Lowest price generic equivalent</i>				100				
Glibenclamide tab 5 mg	Daonil	HMR		60			/tab	
<i>Most sold generic equivalent</i>	Betanase	Cadila		60				
<i>Lowest price generic equivalent</i>				60				
Hydrochlorothiazide tab 25 mg	Dichlotride	MSD		30			/tab	
<i>Most sold generic equivalent</i>	Esidrex	Novartis		30				
<i>Lowest price generic equivalent</i>				30				

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	Brand name(s)	Manufacturer	Available tick ✓ for yes	Pack size recommended	Pack size found	Price of pack found	Unit price (4 digits)	Comments
Pyrimethamine with sulfadoxine tab (25+500) mg	Fansidar	Roche		3			/tab	
<i>Most sold generic equivalent</i>	Laridox	IPCA		3				
<i>Lowest price generic equivalent</i>				3				
Salbutamol inhaler 0.1 mg per dose	Ventoline	GSK		1 inhaler: 200 doses			/dose	
<i>Most sold generic equivalent</i>	Aerolin	EPICO		1 inhaler: 200 doses				
<i>Lowest price generic equivalent</i>				1 inhaler: 200 doses				
Promethazine tablet 25 mg				100			/tab	
<i>Most sold generic equivalent</i>	Promethazine	EPHARM		100				
<i>Lowest price generic equivalent</i>				100				
Metronidazole capsule 250 mg	Flagyl	Aventis pharma		60			/caps	
<i>Most sold generic equivalent</i>	Metronidazole	EPHARM		60				
<i>Lowest price generic equivalent</i>				60				
Mebendazole tablet 100 mg	Vermox	Janssen Pharma		6			/tab	
<i>Most sold generic equivalent</i>	Wormin	Cadila		6				
<i>Lowest price generic equivalent</i>				6				
Penicillin, Procaine benzyl, powder for injection, 4 MIU/vial				1 vial			/vial	
<i>Most sold generic equivalent</i>	Procaine penicillin fortified	EPHARM		1 vial				
<i>Lowest price generic equivalent</i>				1 vial				
Tetracycline eye ointment, 1 %	Achromycin	Lederle		5g			/g	
<i>Most sold generic equivalent</i>	Tetracycline	Shanghai		5g				
<i>Lowest price generic equivalent</i>				5g				

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	Brand name(s)	Manufacturer	Available tick ✓ for yes	Pack size recommended	Pack size found	Price of pack found	Unit price (4 digits)	Comments
Benzyl benzoate lotion, 25 %				125 mL			/ml	
<i>Most sold generic equivalent</i>	Benzyl benzoate	EPHARM		125 mL				
<i>Lowest price generic equivalent</i>				125 mL				
Methyldopa tablet 250 mg	Aldomet	MSD		60			/tab	
<i>Most sold generic equivalent</i>	Doepygyt	Egis		60				
<i>Lowest price generic equivalent</i>				60				
Nicosamide tablet 500 mg	Yomesan	Bayer		4			/tab	
<i>Most sold generic equivalent</i>	Nicosamide	EPHARM		4				
<i>Lowest price generic equivalent</i>				4				
Clotrimazole topical cream, 1 %	Canesten	Bayer		15 g			/g	
<i>Most sold generic equivalent</i>	Clotrimazole	Shangahai		15g				
<i>Lowest price generic equivalent</i>				15g				
Chloroquine Phosphate tablet 250 mg	Nivaquine	Rhone-poulenc Rorer		10			/tab	
<i>Most sold generic equivalent</i>	Chloroquine phosphate	EPHARM		10				
<i>Lowest price generic equivalent</i>				10				
Cotrimoxazole tablet (400 + 80) mg	Bactrim	Roche		20			/tab	
<i>Most sold generic equivalent</i>	Cotrimol	IPCA		20				
<i>Lowest price generic equivalent</i>				20				
Chloramphenicol capsule 250 mg				100			/caps	
<i>Most sold generic equivalent</i>	Chloramphenicol	EPHARM		100				
<i>Lowest price generic equivalent</i>				100				

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	Brand name(s)	Manufacturer	Available tick ✓ for yes	Pack size recommended	Pack size found	Price of pack found	Unit price (4 digits)	Comments
Penicillin G, sodium crystalline, powder for injection, 1 MIU/vial				1 vial			/vial	
<i>Most sold generic equivalent</i>	Penicillin G, sodium crystalline	EPHARM		1 vial				
<i>Lowest price generic equivalent</i>				1 vial				
Sodium chloride (Normal saline) Intravenous injection, 0.9 %				1000mL			/mL	
<i>Most sold generic equivalent</i>	Sodium chloride	EPHARM		1000 mL				
<i>Lowest price generic equivalent</i>				1000 mL				
Quinine dihydrochloride 300 mg/ml injection				2 mL			/mL	
<i>Most sold generic equivalent</i>	Quinine ject	Medreich		2 mL				
<i>Lowest price generic equivalent</i>				2 mL				
Diclofenac tablet 50 mg	Voltarol	Novartis		100			/tab	
<i>Most sold generic equivalent</i>	Dyclomax	GSK		100				
<i>Lowest price generic equivalent</i>				100				
Amoxicillin capsule 500 mg	Amoxil	SKB (GSK)		21			/tab	
<i>Most sold generic equivalent</i>	Z mox	Aurobindo		21				
<i>Lowest price generic equivalent</i>				21				

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	Brand name(s)	Manufacturer	Available tick ✓ for yes	Pack size recommended	Pack size found	Price of pack found	Unit price (4 digits)	Comments
Lamivudine (3TC) tablet 150 mg	Epivir	GSK		60			/tab	
<i>Most sold generic equivalent</i>	Avolam	Ranbaxy		60				
<i>Lowest price generic equivalent</i>				60				
Stavudine (d4T) tablet 40 mg	Zerit	BMS		60			/tab	
<i>Most sold generic equivalent</i>	Avostav	Ranbaxy		60				
<i>Lowest price generic equivalent</i>				60				
Efavirenz (EFV) 200 mg capsule	Sustiva	BMS		90			/caps	
<i>Most sold generic equivalent</i>	Stocrin	MSD		90				
<i>Lowest price generic equivalent</i>				90				
Lamivudine + Zidovudine tablet (150 + 300) mg	Combivir	GSK		60			/tab	
<i>Most sold generic equivalent</i>	Lamuzid	Cadila (Zydus)		60				
<i>Lowest price generic equivalent</i>				60				
Nevirapine tab 200 mg	Viramune	Boehringer I		60			/tab	
<i>Most sold generic equivalent</i>	Nevipan	Ranbaxy		60				
<i>Lowest price generic equivalent</i>				60				

