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**Draft report on Medicines Prices Components in the Public,
Non-Profit and Private SECTORS in Zambia**

Report submitted to medicine transparency alliance ZAMBIA

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EXECUTIVE SUMMARY

The government of the Republic of Zambia has the vision to “... provide the people of Zambia with equity of access to cost-effective, quality healthcare as close to the family as possible ...” The government however admits facing a challenge to achieving the vision partly due to the high disease burden worsened by the HIV and AIDS pandemic. A major component that could be used to assess the attainment of the government’s vision is the extent to which Zambians are able to access essential medicines.

Zambia is a low-income country which has a free market economy. With the Food Poverty Line of about ZMK 80,000 monthly per adult and extreme poverty levels at 53%, most families have to struggle to meet medicines prices controlled by market forces. The government is expected to provide free medicines through its public hospitals and clinics. However, in reality patients usually end up with merely a prescription that they go with to buy out of their own pocket the necessary medicines from a private pharmacy. The University Teaching Hospital, which is the highest health institution in the country, has a High Cost Scheme with a separate pharmacy from which clients have a higher likelihood of finding the prescribed medicines. This means the high cost scheme holders are actually indirectly paying for the medicines. This study was embarked on with the view to establishing the pricing of medicines in the various sectors involved in the procurement and sell of pharmaceutical products. These sectors included the public, private and Non-governmental organizations.

The research targeted 48 medicines from the country’s Essential Medicines List provided by MeTA Zambia. The medicines were divided into “branded” i.e. made by the original patent holder, and “generic” i.e. an equivalent of a branded drug produced by another company under a different name. The 48 medicines were further classified into anti-malarials, anti-fungals, anti-biotics, analgesics and other medicines. Data were collected from a total of 40 pharmacies: 2 public dispensaries; 18 wholesale outlets and 20 private retail outlets within Lusaka district.

The study revealed that the medicines were reasonably available in both the private pharmacies and public dispensaries. Private retail outlets had a mean availability of 62.2% across all categories and availability range of 53.7% (other drugs) to 77.3% (anti-fungals). On the other hand, public dispensaries had a mean availability of 74.4% across all categories and availability range of 58.8% (anti-biotics) to 86.8% (other drugs). The public institutions were therefore generally better stocked than the private ones by a margin of 14.2%. About 92% of the medicines studied were imported from outside the country with India being the leading exporter at 72% of the total imported medicines. It is followed by China (11%) and the Netherlands (6.7%) among other countries.



The study results showed that all medicines were accessible freely from the public dispensaries while private pharmacies showed profit mark-ups range of 28-73%. With the Food Poverty Line at ZMK 80,000, per adult per month, it is clear that families have difficulties purchasing their medicines translating to ZMK 2,600 per day. The top ten major causes of illness included malaria, diarrhoea and pneumonia for which medicines were part of the study. The first line treatment for malaria is artemether/lumefantrine (coartem) with an average price of ZMK 29,961. This price is 11 times higher than the ZMK 2600 Food Poverty Line per day per adult for 29% of the population in Lusaka province. Amoxyl, a first line treatment for RTI had a mean cost of ZMK 5,384 while benzyl penicillin for pneumonia, a major under-five cause of mortality costs about ZMK 3,584. These medicines are relatively affordable but for the 29% extremely poor in Lusaka province, these could make the difference between life and death.

On the basis of this study the researchers came up with recommendations especially to the government of Zambia in view of its vision on health care provision to the people of Zambia. There is a lot that needs to be done to make medicines more accessible to the Zambian population especially the extremely poor. In a free market economy that Zambia practices, it is difficult to directly control the pricing of medicines in the private sector. However, the 16% VAT imposed on pharmaceutical products should be waived although it is not clear what significance this would have on reduction of prices of medicines in Zambia. Currently, there is neither a medicines pricing policy nor a maximum profit mark-up for the private sector. As can be evidenced by the recently successful Health Care bill in the United States, a free-market economy country, the Zambian government should intervene in the pricing of medicines to make them more accessible to all the citizens. Needless to mention that such access would ensure a healthier population that is a pre-requisite for development. However, such intervention should involve throughout the participation of all stakeholders in the areas of medicines manufacturing, procurement, distribution and consumption.

Lastly, the Zambian government should offer incentives to attract and encourage more investors to establish manufacturing plants for pharmaceutical products locally. Manufacturers from India should especially be targeted that country being the major exporter of medicines to Zambia. This would also help in ensuring the ready availability of affordable essential and other drugs from within the country. The government should guarantee a higher and more reliable funding to the health sector. Although 25-30% of the national budget is donor-funded, government should ensure that the medicines budget is locally funded to ensure stability of procurement and stock supplies in case of donor withholding or withdrawing of funding.

CHAPTER I: INTRODUCTION

1.1 Country Background and Context of Survey

Zambia is a landlocked low-income country in sub-Saharan Africa. The country became independent from British colonial rule in 1964. Until 1991, Zambia practiced a pro-socialist state-controlled economy; the state had a hand in the control of prices of goods sold in the country. With the reversion to multi-party democracy in 1991, the state relinquished control of the prices of goods to the market forces. In the new *laissez-faire* capitalist economy, private entrepreneurs could set prices of whatever goods they had including pharmaceutical products as high as they wished without fear of ramifications from the state. To date Zambia has neither a pricing policy nor a maximum retail mark-up price for pharmaceutical private sector businesses.¹

The Zambian government has made some significant efforts in ensuring the availability of quality medicines to its population. This has been done mainly through the development and adoption of the National Drug Policy in 1999 as well as the Pharmaceuticals Act (No. 14) Of 2004. In later years the Ministry of Health has been developing an Essential Drugs and Tracer Drugs list to help monitor drugs stocks and ensure systematic procurement of critical medicine supplies. The Pharmaceutical Regulatory authority was further established to provide the much needed regulation of medicines in both the public and the private sectors. However, problems still abound with erratic supplies sometimes with as high as 50% essential drugs out of stock.²

Zambia has a population of 11.9 million with a life expectancy of 37.³ Lusaka province alone accounts for about 14% of the national population. Unemployment rate stood at 14% countrywide while Lusaka and Copperbelt provinces have a combined 32 % of unemployment. Extreme poverty for Lusaka province stands at 29% for which the Food Poverty Line for an adult was ZMK 78, 223 monthly.⁴

Government has put in a deliberate policy which is enforced by the Zambia Public Procurement Agency that they should not as a general rule, procure branded drugs. Firstly this is not to disenfranchise smaller

¹ *Zambia Country Pharmaceutical Profile and NPO* accessed at <http://www.afor.who.int/.../2486-zambia-profile-and-npo.html>

² *ibid*

³ Population Reference Bureau. *2006 World Population Data Sheet*. Accessed at <http://www.prb.org/pdf06/06worlddatasheet.pdf>

⁴ CSO. *The 2004 Living Conditions Monitoring Survey*. Lusaka and www.zamstats.gov.zm



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pharmaceutical players in the sector that solely trade in generics, but most importantly because branded drugs tend to be more expensive due to the massive budgets spent on advertising and packaging these drugs. However, in certain circumstances such as in the procurement of ARVs which are bought under special financing arrangements with Donor agencies such as the global fund or when extenuating conditions demand so, a waiver can be made to procure such branded drugs.

Procurement of drugs in the public sector is done by MOH through the procurement and supply department at the ministry head quarters at Ndeke House. Procurement is done by a tender process that is carefully guided and overseen by the ZPPA. The Ministry rarely imports directly from the manufacturers opting to deal with the local manufacturers and wholesalers, who are in most cases authorised or appointed agents of renowned manufactures. This is meant to save on costs and time. This approach also means the procurement prices are market determined, as it against Government's policy to set price controls.

Government has given the pharmaceutical authorities at Hospital and District Health Offices a budget line that allows for direct procurement of drugs from the wholesalers in an event of a shortage at the public dispensary, although this remains a challenge especially due to the late disbursement of grants to these institutions. It is hoped that availability of drugs, vaccines and other medical supplies can be further enhanced by strengthening and improving systems in the drug budget, drug forecasting, quantification, procurement and distribution to all public dispensaries.

The Ministry of Health admits that "Zambia is a country with a high disease burden, which is compounded by high poverty levels and HIV/AIDS prevalence of HIV/AIDS". The high disease burden, compounded by high unemployment and poverty levels, the government of Zambia and other stakeholders face a big challenge of achieving its vision of *"...provide the people of Zambia with equity of access to cost-effective, quality healthcare as close to the family as possible..."*.⁵ A key challenge to the attainment of this vision is the inaccessibility of medicines by many Zambian. For example, per capita out-of-pocket expenditure on health is US\$ 7 while per capita government medicines budget is US\$ 2⁶ which indicates a significant disparity. This is a focal concern for MeTA Zambia leading up the current study.

1.2 MeTA Zambia

Medicines Transparency Alliance (MeTA) is an international and national multi-stakeholder initiative, made up of government, civil society organizations and private sector, whose aim is to promote

⁵ National Health Strategic Plan 2006-2010

⁶ Zambia Country Pharmaceutical Profile and NPO



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increased transparency in the supply of essential medicines, and ensure equitable access for low income and disadvantaged people in developing countries. Zambia joined a number of MeTA pilot countries on 29th April, 2008, before the MeTA global launch of mid-May in London, after a formal invitation on 4th March, 2008. MeTA Zambia was launched on 31st March 2009, by the Minister of Health.

MeTA's focus is on strengthening countries capacity to collect, analyze, disseminate and use data on medicine procurement, quality, availability, pricing, promotion and use. This is in order to help improve transparency and accountability around the way medicines are selected, regulated, procured, distributed, supplied and then prescribed to and used by patients.

To develop effective policies to make medicines more affordable, government policy makers need information about the levels and variations in medicines price components in both the public and non-profit sectors. There has however been no formal study in Zambia to critically analyze the prices of medicines from different outlets. A similar study was conducted in Malaysia⁷. This assessment attempts to fill this gap in Zambia.

1.3 Objectives of the Study

1. Establishing the pricing structure (margins) of the available locally produced pharmaceutical products
2. Establishing the pricing structures (margins) of imported pharmaceutical products in private, public and non-profit NGOs from the landed cost up to sale to the consumer
3. Establishing the sources of the imported pharmaceutical products
4. Establishing the effect of prices on expiry dates
5. Establishing the action taken on unsold expired pharmaceutical products

1.4 Limitations of the Study

The following are the limitations of the survey:

1. The researchers did not find any Non-governmental organizations involved in the manufacture, procurement or sell of pharmaceutical products. Consequently, none was included in the study.

⁷ Babar ZUD, Ibrahim MIM, Singh H, Bukahri NI, Creese A (2007) *Evaluating Drug Prices, Availability, Affordability, and Price Components: Implications for Access to Drugs in Malaysia*. PLoS Med 4(3): e82. doi:10.1371/journal.pmed.0040082



2. Time – There was a time constraint as time of one month was too short in which to complete the study.
3. Bureaucracy- Only 2 public institutions (University Teaching Hospital and Chilenje Clinic) were included from the public sector as other institutions claimed not to have the authority to respond to the questionnaire. In private firms, some respondents had to seek clarification from their superiors which resulted in slow response.
4. Scope: The study was limited only to Lusaka district. Ideally the study should have included at least one more district with different socio-economic characteristics for comparative purposes as well as to make the findings more generalisable.
5. Finances: The limited funding for the study affected both the definition of the scope as well as slowed the pace of the study. Only one research assistant was recruited while the researchers also collected the data and performed the data entry.

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CHAPTER II: SURVEY METHODOLOGY

In order to achieve the objectives stated above, the study paid attention to the following: Study design, Population definition, and sample size. It is important to note that this study is the first of its kind that MeTA Zambia is conducting, and focus was paid to essential medicines in Zambia.

2.1 Research Design

The study employed an exploratory approach. This involved identifying business entities that deal in pharmaceutical products at different levels. The study groups comprised pharmaceutical firms that import, manufacture, wholesale and those that retail sale pharmaceutical products.

2.2 Population Definition

The study population was drawn from Lusaka district. A list of all registered pharmaceutical firms was obtained from PRA, together with list of registered firms that manufacture medicines in Zambia. The study population therefore included all registered pharmaceutical firms found in Lusaka district.

2.3 Quality Assurance

To ensure that high quality data was collected, the research team solicited the help of experienced data collectors, and these were picked on the basis of previous field work experience. All members of the field team underwent a one day orientation before going out in the field. Similarly, data entry clerks were employed on the basis that they were well versed with computers and the software that was used for data entry and analysis. Data validation was performed on at least 10% of the questionnaires entered. This was done using a double data entry system.

2.4 Managing Field Work

The data collection exercise was accomplished by a team of 1 dedicated Research Assistant. Taking into account the delicate nature of the subject matter of the investigation, the research associates and principal researcher took part in the data collection exercise as well.



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2.5 Data Processing and Analysis

To enhance quick completion of data processing, data entry templates were created in Microsoft ACCESS. This program facilitates creation of a data entry dictionary or programme with a screen that guides the data entry staff. This program is capable of handling filter questions through skip patterns as well as detecting out-of-range and invalid entries. Despite the fact that all data entry personnel were recruited on the basis of computer and software competence, they also underwent a one-day orientation to the entry program.

Afterwards, data was cleaned and analysed using SPSS. This software has the ability to handle more complex tables and advanced statistics. This enabled us to demonstrate the trends in the pricing structures of different medicines by source and sectors. Quality graphs and charts were produced using MS Excel and Quattro Pro.

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CHAPTER III: SURVEY FINDINGS

3.1 Sectors

The study captured data from the private and the public sector. As figure 1 below shows, majority (95%) of the outlets in the sample belonged to the private sector while the remainder (5%) was from the public sector. Additional categorization of outlets was done by type of trade outlets were predominantly into. Table 1 below reveals that half (50%) of the outlets were into retail trading, 45% practiced wholesale trading while 5% were from the public dispensary institutions. See figure 1 and table 1 below.

Figure 1: Sector of operation

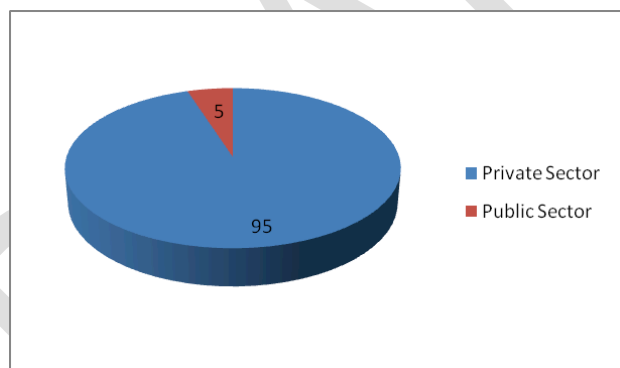


Table 1: Type of outlets

Types of outlet	Frequency	%
Retail	20	50

Wholesale	18	45
Public Dispensary	2	5
Total	40	100

3.2 Types of Medicines

The study commenced by compiling a list of essential drugs for Zambia, and this contained 48 drugs, see annex 1. For analysis purposes, the drugs were stratified into 5 different groupings, and these were: antibiotics, anti-fungal drugs, analgesics, anti-malarial and “other drugs” category.

Availability of medicines was measured by asking respondent outlets if branded types of drugs on the list were available at the time of the study. An attempt was also made to find out if the outlets had in stock generic equivalents to the original drugs. If an outlet stocked more than one generic equivalent, data was only obtained from the lowest priced generic.

3.3 Availability of medicines

Figure 2 below shows availability of branded and generic drugs by sector. If a branded type of a particular drug was not in stock at the time of the study, respondents were asked to state if they had any generic equivalent to that particular drug. If the response was “No”, no further questions were asked on that particular drug.

Study findings reveal that no branded drug was stocked by public institutions, while stocking levels of branded drugs in the private sector was very low (8.2%).

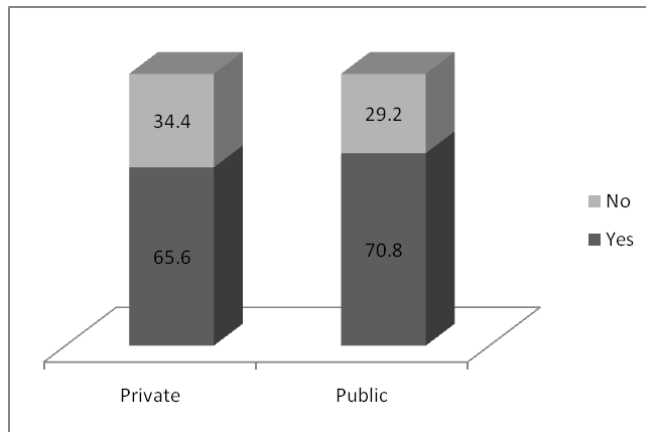
3.4 Availability of generics

Data on availability of generic drugs by sector is contained in figure 3 below. Findings of the study as contained in figure show that generally, 70.8% of drugs were available in generic form in the public sector, while availability of essential drugs in generic form in the private sector stood at 65.5%. See figure 2 below.



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Figure 2: Availability of generic by sector



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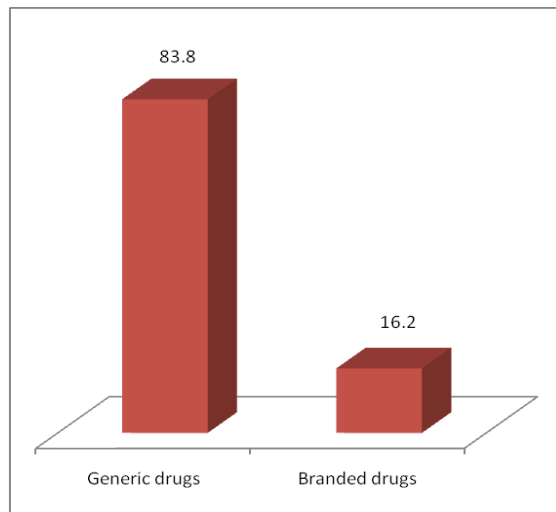
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3.5 Comparative availability of branded and generic drugs

Branded drugs in the public sector institutions are almost nonexistent. This is because the government of Zambia has a deliberate policy of buying generic drugs. This probably explains why only branded Artemether/lumefantrine was found to be in stock in the public institutions during the study.

On the other hand, Availability of branded drugs compared to generics in the private sector was very low. For instance, only 16.2% of the essential drugs were available in branded form compared to 96.9% of the same drugs that were available in generic form. See figure 3 below.

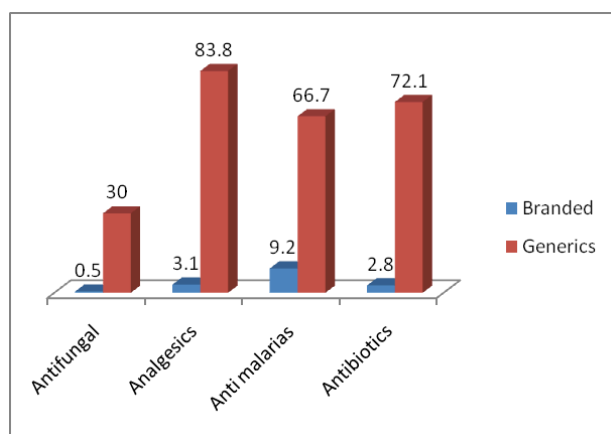
Figure 3: Availability of branded and generic drugs



3.6 General Availability of branded and generic drugs by type of drug

Results of further analysis revealing availability of the different types of drugs by branded and their generic equivalents is presented in figure below. The highest found branded drugs on the market in percentage terms were anti-malarials drugs at (9.2%), while same drugs were available at 66.7% levels in generic form. Availability of analgesics and antibiotics branded medicines stood at 3.1% and 2.1% respectively, while their generic equivalents were available at 83.8% and 72.1% respectively. Branded anti fungal drugs were available at half a percentage point (0.5%), compared to 30% registered for their generic equivalents. See figure 4 below.

Figure 4: General availability of different drugs



3.7 Comparative availability of drugs by sector

Table 2 below shows availability of drugs by sector. Findings in the table state that 86.8% of generic drugs in the other medicines category were available in the public sector while availability of these drugs in the private sector stood at 53.7%. Availability of analgesics in the public sector stood at 84.8% compared to 62.5% in the private sector. The public sector registered 77.3% availability levels of anti fungal drugs compared to three quarters (75%) found in the private sector. The private sector was better stocked in terms of antibiotics (70.7%) compared to 58.8% found in the public sectors. Study findings further reveal that stocking levels of anti malaria medicines in the two sectors were equal at (66.7% and 66.7%). See table 2 below.

Table 2: Availability of different generic drugs by sector

Types of drug	Private	Public
Antibiotics	70.7	58.8
Anti fungals	77.3	75
Analgesics	62.5	84.8
Anti-malarials	66.7	66.7
Other drugs	53.7	86.8

4.1 Sources of medicines

Another factor of importance to this study that was taken into consideration was the main source of drugs available on the Zambian market. Therefore, this chapter presents information on the sources of drugs, and this is presented by locally manufactured drugs and imported drugs. For imported drugs, further analysis has been done that shows information by country of import.

4.2 Imports Versus locally manufactured drugs

Analysis by type of drug reveals that there are marked variations in percentage terms between imported and locally manufactured drugs available on the market. The table shows that almost all (98.7%) anti fungals available in the outlets are imports, compared to only 1.3% that are locally manufactured. The percentage of imported anti malaria drugs available on the market stands at 98% against 2% that are locally manufactured. Further analysis shows that 87.7% of available analgesics are imports compared to 12.3% that are locally manufactured drugs. Availability of imported drugs that constitute the “other medicines category” on the market stands at 79.7% while the remainder (20.3%) are locally manufactured. See table 3 below.

Table 3: Source of available drugs on the market

Type of drug	Imported drugs	Locally manufactured	Total
Antibiotics	94	6	100
Analgesics	87.7	12.3	100
Anti fungal	98.7	1.3	100
Anti malarias	98	2	100
Other drugs	79.7	20.3	100

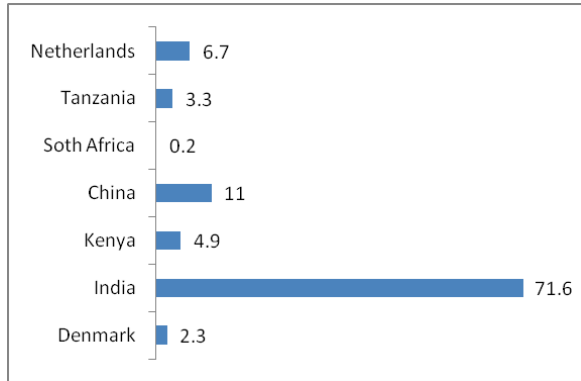
4.3 Sources of imported antibiotics



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This section presents information main sources of imported drugs available on the market. This analysis is done by type of drug. As can be seen in figure 6 below, majority (71.6%) of antibiotics on the market are imported from India, while the remainder (28.4%) are imports from China (11%), Netherlands 6.7%, Kenya 4.9%. Imported antibiotics from Tanzania, Denmark and South Africa account for 3.3%, 2.3% and 0.2% of importation of these drugs respectively. See figure below.

Figure 5: Sources of imported antibiotics



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4.4 Sources of imported analgesics and anti fungal drugs

Analysis on the sources of imported analgesics shows 70.7% of these drugs on the market are from India. This is followed by drugs from China at 15.6%, Tanzania at 6.1%. Analgesic imports from Denmark stand at 5.1% while Kenya and Germany contribute 4.9% and 0.9% amounts of analgesic drugs respectively.

Study findings contained in the same table reveal that by far majority (89.5%) of anti-fungals on the market are from India. This is followed by imports from China and Kenya at 5.3% and 4.9% respectively. On the tail end are imports from Tanzania and Denmark at 0.6% each while there is no anti-fungal from Germany. See table 4 below.

Table 4: Sources of and anti-fungals

Analgesics		Anti-fungals
Country of import	Percent	Percent
India	70.7	89.5
China	15.6	5.3
Tanzania	6.1	0.6
Denmark	5.1	0.6
Kenya	4.9	4
Germany	0.9	0
Total	100	100

4.5 Sources of imported anti-malaria and other drugs

Sources of imported anti malaria and other drugs are presented in figure 7 below. Study findings show that even when it comes to fighting the nation's number one killer disease (Malaria), India is the main



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source of drugs needed to fight this scourge. Statistics in the figure below show that 93.1% of all anti malaria drugs on the market come from India. Denmark and Tanzania contribute 2.7% and 4.2% anti malaria drugs to the local market. Statistics in the same table reveal that 86.4% of medicines in the other drugs category are imported from India while 7.5% and 4.75 are imported from China and Kenya respectively. Less than 2% (1.4%) are imported from Tanzania and Denmark. See table 5 below.

Table 5: Sources of imported anti malaria and other drugs

	Anti malaria	Other drugs
Source	Percent	Percent
India	93.1	86.4
China	0.0	7.5
Tanzania	4.2	1.3
Denmark	2.7	0.1
Kenya	0.0	4.7
Total	100	100

5.0 Prices of Medicines

This section presents data on pricing structures of medicines. It must be noted that these prices are based on recommended pack sizes/treatment courses of the drugs under study. For imported drugs, the table presents information on their landing cost while procumbent prices are presented for locally manufactured drugs. However for both imported and local drugs, the table further reveals their mean selling prices, and profit mark ups in percentage terms.

5.1 Pricing of antibiotics

Information in the table reveals that the mean landing cost of imported amoxicillin suspension stands at 2,424, while the mean selling price is 5,384. This represents a profit mark up of 38%. The mean landed cost of Gentamycin and Benzyl penicillin stands at 377 and 1,772 respectively. Their mean selling prices are 1,350 and 3,580, representing profit mark ups of 56% and 34% respectively.



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5.2 Pricing of analgesics

The table further shows that profit mark ups for analgesics are equally high. For instance, the mean landing costs for Paracetamol, Diclofenac, and Acetylsalicylic acid are 187, 280 and 187 respectively, while the mean selling prices are 506, 1,318 and 594 respectively. These prices represent profit mark ups of 46%, 65% and 52% respectively.

5.3 Pricing of anti fungal drugs

Further analysis on pricing of anti fungals reveals a similar pattern when it comes to profit margins. The landed cost of Nystatin pessaries, Fluconazole and Clotrimazole was found at 2,250, 3,275 and 1,480 respectively while their mean selling prices were 6,637, 20,650 and 4,800. These prices imply profit mark ups of 49%, 73% and 53% respectively.

5.4 4.1 Pricing Structures of anti malaria drugs

Mean landed costs of imported anti malaria drugs stood at 15,075 against 29,961 mean selling prices for Artemether/Lumefantrine, combination therapies, 514 mean landed cost for Sulfadoxine/pyrimethamine compared to 1,466 mean selling prices, and 3,912 for quinine, against 6,630 mean selling prices. These findings translate into profit mark ups of 33%, 48% and 26% respectively.

5.5 Pricing of other drugs

The pricing structures for medicines in the “other drugs category” were not different from that of medicines already discussed. For instance, the landed costs of Acyclovir, Cimetidine and Oxytocin were found to be 5,700, 710 and 700 respectively. Their mean selling prices stood at 18,663, 1,654 and 2,425 respectively. This translates into profit mark-ups of 53%, 40% and 52% respectively. See table 6 below.⁸

Table 6: Pricing structures of medicines

	Imported drugs	Locally manufactured drugs
--	----------------	----------------------------

⁸ Landed costs and selling prices indicated are in Zambian Kwacha (ZMK). The research team faced a lot of resistance from respondent outlets when it came to providing information on some imported medicines. Therefore, information for affected drugs is not available.

	Mean Landed cost(ZMK)	Mean selling price(ZMK)	% mark up/profit	Mean purchase price(ZMK)	Mean selling price(ZMK)	% mark up/profit
Amoxicillin suspension	2,424	5,384	38	3250	7500	40
Gentamycin	377/vial	1350/vial	56	600	971/ampoule	24
Benzyl penicillin	1,772	3,580	34	2525	4200	25
Paracetamol	187	506	46	240	439	29
Diclofenac	280	1318	65	Not locally available		
Acetylsalicylic acid	187	594	52	153	537	56
Nystatin pessaries	2250	6637	49	Not locally available		
Fluconazole	3,275	21,350	73	-	2,800	
Clotrimazole cream	1,480	4,800	53	Not locally available		
Artemether/lumefantrine	15,075	2,9961	33	Not locally available		
Sulfadoxine/pyrimethamine	514	1,466	48	587	1500	44
Quinine	3,912	6,630	26	Not locally available		
Acyclovir	5,700	18,663	53	Not locally available		
Cimetidine	710	1,654	40	Not locally available		
Oxytocin	700	2,425	52	1280	3000	40

5.6 Landing costs of medicines by sector

The government procures medicines from local wholesaler through the Ministry of Health by way of a bidding process. This procurement is done from quarterly to annual basis. It is important to note that landing costs of these medicines does take into account inflation figures, devaluation of the local currency and any such unforeseen eventualities. As shown in 7 below, there are minimal differences in landing costs of imported medicines between the private and public sectors. See table 7 below.



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Table 7: Landing costs of drugs by sector

Name of drug	Public Sector	Private sector
Amoxicillin suspension	3,257	2,424
Gentamycin	500	377
Benzyll penicillin	1,937	1,772
Paracetamol	166	187
Diclofenac	0	150
Acetylsalicylic acid	150	187
Nystatin pessaries	0	2,250
Fluconazole	2,025	2,378
Clotrimazole cream	1,480	1,500
Artemether/lumefantrine	7,492	15,075
Sulfadoxine/pyrimethamine	240	514
Quinine	1,826	3,912
Acyclovir	2,997	5,700
Cimetidine	440	710
Oxytocin	1,000	700

6.0 Expired Drugs

6.1 Effects of prices on nearing expiry dates

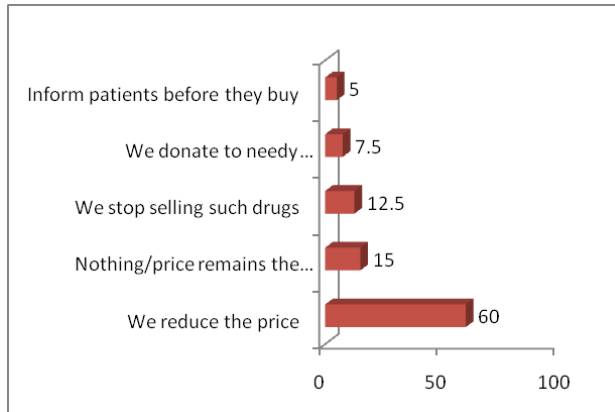
The study collected information on what effect expiry dates have on medicine prices. Figure 8 below reveals that majority (60%) of the outlets stated that they reduce prices of medicines once a drug nears its expiry date while 15% reported that the price of such drugs remains the same. Further, 12.5% stated that they stop selling such drugs, 7.5% donate such drugs to needy institutions while the remainder (5%) indicated that they inform buyers about a drug nearing its expiry date before such a drug is paid for. See figure 8 below.

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Figure 6: Effect of nearing expiry dates on prices

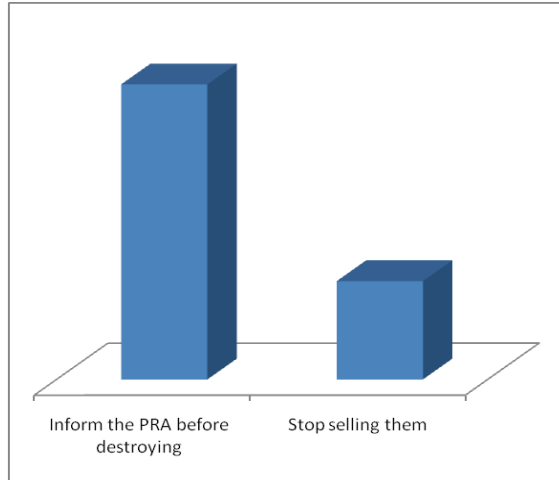


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6.1 Action taken to unsold expired drugs

Respondents were further asked to state what action (s) they take once a drug expires. As can be seen in figure below, 75% of the institutions reported that they inform the PRA before proceeding to destroy affected medicines while 25% said that they simply stop selling such drugs. See figure 7 below.

Figure 7: Actions taken on expired drugs



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CHAPTER IV: DISCUSSION

Zambia is a landlocked sub-Saharan country with a population of over 11.9 million people with a low life expectancy of 37.⁹ Poverty levels are very high at 53% while the disease burden is also very high and worsened by high prevalence of HIV and AIDS of 14.3%. The government of the Republic of Zambia has the vision to “... provide the people of Zambia with equity of access to cost-effective, quality healthcare as close to the family as possible ...” A major component that could be used to assess the attainment of the government’s vision is the extent to which Zambians are able to access essential medicines.

However, a paradox is created by the prevailing economic policy that allows private businesses to sell their products at any price they deem fit. Logically, this means that the government has no direct control over the prices of medicines in the private sector. The government is expected to provide free medicines through its public hospitals and clinics. However, in reality patients usually end up with merely a prescription that they go with to buy the necessary medicines from a private pharmacy out of their own pocket. “Often, hospitals just give prescriptions because they have no drugs. It’s not like in the past when we could go to hospital and get drugs. The only drugs we can get are Panadol (a painkiller) and Flagyl (for diarrhoeal diseases). You have no option but to look for money to buy the drugs you need. Unfortunately, the drugs in chemist’s shops are expensive.”¹⁰ The University Teaching Hospital, which is the highest health institution in the country, requires outpatients to pay K 100,000 consultation fee and an admission deposit of K 250,000. All accrued costs inclusive of medicines are then deducted from this deposit. If any treatment and medicines exceed the deposit, the patient is requested to pay the excess bill. At clinics the consultation is only 20% that at UTH. In addition, UTH has a High Cost Scheme with a separate pharmacy from which clients have a higher likelihood of finding the prescribed medicines. It is therefore highly questionable the extent to which medicines in the public health institutions can be said to be “free”.

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¹⁰ Sibanda, N. *Prices, Quality, Availability and Corruption – Challenges to Poor People’s Access to Medicines in Zambia*. Accessed at http://www.medicinestransparency.org/fileadmin/uploads/Documents/Zambia_article.pdf

The study results showed that all medicines were accessible freely (“free” in the sense qualified above) from the public dispensaries while private pharmacies showed the following profit mark-ups: anti-malarial (38%); anti-fungal (58%); analgesics (54%); anti-biotics (40%) and other medicines (48%). These are on the lower side considering the average retail mark-up range of 10%-552% in the WHO region.¹¹ With the Food Poverty Line at ZMK 80,000, per adult per month, it is clear that families have difficulties purchasing their medicines translating to ZMK 2,600 per day. According to the *2008 Annual Health Statistical Bulletin*, the top ten major causes of illness included malaria, diarrhea and pneumonia for which medicines were part of the study. Malaria has an incidence rate of 252/1000 and diarrhea, 69/1000 while that for RTI-non pneumonia was 198/1000 in the population above the age of 5. The under-5 incidence was 2.5, 2.4 and 3.1 times higher for malaria, diarrhea and pneumonia respectively.

The first-line treatment for malaria is artemether/lumefantrine (coartem) with an average price of ZMK 29,961. This price is 11 times higher than the ZMK 2,600 Food Poverty Line per day per adult for 29% of the population in Lusaka province. It is also about 4.4 times higher than the Poverty Datum Line of USD\$ 1.5 below which over 50% of the Zambia population lives. The price average is very close to the one reported in Sibanda’s interview with Wendy Kanyanta who said upon her son being diagnosed with malaria, “I had to rush to go and buy drugs because there was nothing at the [public] clinic. The drugs cost about K 40,000.” Amoxyl, a first-line treatment for RTI had a mean cost of ZMK 5,384 while benzyl penicillin for pneumonia, a major under-five cause of mortality cost about ZMK 3,584 during the period of the study. These medicines appear relatively affordable but for the 29% extremely poor in Lusaka province, these could make the difference between life and death. As one gas welder of Garden compound in Lusaka clearly puts it, “Sometimes you have to make a choice between drugs and food”.¹²

The study showed an availability of 74.4% of medicines in the public sector compared to 62.2% in the private sector. This is compared to 86% and 80% respectively as reported in the *Zambia Pharmaceutical Country Profile and NPO*. In both cases the availability is higher in the public than in the private sector. In each case, the Country Profile shows a higher availability than this study did. This was somewhat contrary to a 2004 study that used the WHO/HAI methodology that showed the opposite trend in all countries surveyed. For example, in Uganda, the median availability of all medicines surveyed is 55% in the public sector, while in Kenya public sector availability is 65%.¹³ Focusing on malaria, a WHO, DFID

¹¹ Russo, G and Mpake, B. 2009. *Medicine Prices in Urban Mozambique: A Public Health and Economic Study of Pharmaceutical Markets and Price Determinants in low-income Settings*. Accessed at <http://heapol.oxfordjournals.org/cgi/content/short/25/1/70>

¹² Sibanda, N. *Prices, Quality, Availability and Corruption*

¹³ <http://stopstockouts.org/files/2009/09/Prices-and-availability-affect-meds250209.pdf>



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and USAID pilot project on distribution chains conducted in some districts in Zambia revealed the following. “Pediatric malaria drugs, so essential to save children’s lives, have become available in 88 percent of public health centres in the pilot districts. This is nearly double the 51 percent availability rate in the control districts”.¹⁴ This represents 345 and 247 days a year respectively. The current study did not include small district clinics or health centres besides UTH and Chilenje Central Stores. Thus, any disparities between the availability at these institutions and the smaller clinics may be essentially attributed to weaker distribution chains. This is clearly demonstrated by the World Bank Group pilot study cited above in which improved distribution methods ensured a much higher availability in the pilot districts compared to the control ones.

India, with 72%, is by far the largest exporter of the medicines under the study to Zambia. This was followed by China at 11%. This is probably medicines from these countries are much cheaper than from any other hence giving the Zambian government and wholesalers. These statistics should be viewed with a lot of caution. According to the European Commission, India stands second after Switzerland in the list of top exporters of fake medicines to the EU in 2007 with 35% of the total fake drugs seized. In 2006, India was the leading source of fake drugs exported to the EU.” India, UAE and China contribute 80% of the fake medicines in Europe¹⁵. According to WHO, third world countries are most vulnerable to counterfeit medicines due to weaker regulatory mechanisms and high levels of poverty among patients. WHO, OECD and the Pharmaceutical Security Institute estimates that show that more than 30% of medicines in some areas of Latin America, South East Asia and Sub-Saharan Africa are counterfeit.¹⁶ Counterfeit medicines may be branded or generic and take the form of wrong ingredients or wrong packaging. Needless to say such medicines put the consumers’ health and lives at risk. Although the Pharmaceutical Act proscribes counterfeit medicines, unless the effective regulatory and control mechanisms are in place in Zambia, the imports of medicines from India and China should be a source of concern to the government, consumers and stakeholders such as MeTA Zambia.

¹⁴ <http://www2.reliefweb.int/rw/rwb.nsf/db900sid/DNEO-84QCF7?OpenDocument>

¹⁵ <http://www.financialexpress.com/news/India-is-2nd-largest-exporter-of-fake-medicines-to-EU----/311834/>

¹⁶ <http://www.who.int/mediacentre/news/releases/2006/pr69/en/index.html>



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CHAPTER V: CONCLUSION AND RECOMMENDATIONS

Zambia is a low income sub-Saharan country with a population of 11.9 million people. It has high unemployment and poverty levels with over half of the population living on less than US\$ 1 per day. The health sector is a delicate one due to the low funding compounded by poverty levels and a high disease burden.

MeTA Zambia seeks to ensure accessibility, affordability and availability of medicines by the Zambian people. To attain this aim requires evidence for effective advocacy as well as to aid government decision-making and policy formulation. The current research was fundamentally commissioned to provide some of the data for attaining the aims of MeTA Zambia.

This research targeted 48 medicines from the country's Essential Medicines List provided by MeTA Zambia. The medicines were divided into "branded" i.e. made by the original patent holder, and "generic" i.e. an equivalent of a branded drug produced by another company under a different name. The 48 medicines were further classified into anti-malarials, anti-fungals, anti-biotics, analgesics and other medicines. Data were collected from a total of 40 pharmacies: 2 public dispensaries; 18 wholesale outlets and 20 private retail outlets within Lusaka district.

The study revealed that the medicines were reasonably available in both the private pharmacies and public dispensaries. Private retail outlets had a mean availability of 62.2% across all categories and availability range of 53.7% (other drugs) to 77.3% (anti-fungals). On the other hand, public dispensaries had a mean availability of 74.4% across all categories and availability range of 58.8% (anti-biotics) to 86.8% (other drugs). The public institutions were therefore generally better stocked than the private ones by a margin of 14.2%. About 92% of the medicines studied were imported from outside the country with India being the leading exporter at 72% of the total imported medicines. It is followed by China (11%) and the Netherlands (6.7%) among other countries. The study results showed that all medicines were accessible freely from the public dispensaries while private pharmacies showed the following profit mark-ups: anti-malarial (38%); anti-fungal (58%); analgesics (54%); anti-biotics (40%) and other medicines (48%).

There is a lot that needs to be done to make medicines more accessible to the Zambian population especially to the extremely poor. In a free market economy that Zambia practices, it is virtually impossible to control the pricing of medicines in the private sector. However, the 16 VAT imposed on pharmaceutical products should be waived although it is not clear what significance this would have on reduction of prices of medicines in Zambia. Currently, there is neither a medicines pricing policy nor a maximum profit mark-up for the private sector. As can be evidenced by the successful Health Care bill in



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the United States, a free-market economy country, the Zambian government should intervene in the pricing of medicines to make them more accessible to all the citizens. Needless to mention that such access would ensure a healthier population that is a pre-requisite for development. However, such intervention should involve throughout the participation of all stakeholders in the areas of medicines manufacturing, procurement, distribution and consumption.

The Zambian government should offer incentives to attract and encourage more investors to establish manufacturing plants for pharmaceutical products. This could be done through special tax rebates and other measures such as waiving of tax on manufacturing equipment and ingredient materials for the medicines. Such deliberate actions would make the pharmaceutical manufacturing ventures reasonably lucrative for the firms while at the same time ensuring affordable prices even for the majority poor Zambians. This would also help in ensuring the ready availability of essential and other drugs from within the country. This may further help curb the phenomenon of counterfeit medicines as it is easier to regulate local manufacturers than foreign ones. In the same vein, government must strengthen ZPRA through increased financial support and training of inspectorates to ensure they safeguard citizen's health and lives from counterfeit medicines.

The government should guarantee a higher and more reliable funding to the health sector. Although 25-30% of the national budget is donor-funded, government should ensure that the medicines budget is locally funded to ensure stability of procurement and stock supplies in case of donor withholding or withdrawing of funding.



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ANNEXES

ANNEX 1: List of Essential Drugs Considered in the Survey

Amoxicillin 125mg suspension
Amoxicillin 250mg cap
Ampicillin 250mg cap
Benzyl Penicillin 5 M.U injection
Benzathine Penicillin 2.4 M.U injection
Ceftriaxone 1gm injection
Ciprofloxacin 250mg tab
Co-trimoxazole 120mg tab
Doxycycline 100mg tab
Erythromycin 250mg tab
Gentamycin 40mg/ml 2ml ampoule
Metonidazole 200mg tab
Nalidixic acid 500mg tab
Acetylsalicylic acid 300mg tab
Diclofenac 50mg tab
Ibuprofen 200mg tab
Paracetamol 500mg tab
Clotrimazole 1% cream
Nystatin Pessaries 100,000 I.U
Fluconazole 200mg tab
Ketoconazole 200mg tab
Artemether/lumefantrine 20/120mg tab
Quinine 600mg tab
Sulfadoxine/pyremethamine 500/25mg tab
Acyclovir 200mg tab
Albendazole 400mg tab
Adrenalin (0.01%) injection
Carbamazepine 200mg tab
Chlopheniramine 4mg tab
Cimetidine 200mg
Dextrose 50%
Ergometrine 0.5mg/ml ampoule
Ferrous sulphate 200mg tab
Folic acid 5 mg
Frusemide 40mg tab
Glibeclamide 5mg tab
Laevonogestron+oestrogen tab
Mebendazole 100mg tab
Nystatin 100,000 IU suspension
Lignocaine 1% injection
Oxytocin 10 I.U/ml injection
Propranolol 40mg tab
Sodium chloride 0.9%
Ringers lactate
Chloramphenicol 250mg cap
Chloramphenicol 1gm injection

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ANNEX 2: Questionnaire for the Survey



Medicines Transparency Alliance (MeTA) is a coalition of partners, mainly the government, civil society organizations and the private sector, working together in a multi-stakeholder setting to improve access to medicines by increasing transparency and accountability in the health system.

Currently, MeTA Zambia is conducting a study whose main focus is on Medicine Price Components in the Public, Non-Profit and Private Sectors in Lusaka. Your establishment is one of the randomly selected pharmaceutical entities to provide this information. We would be very grateful if you could take part in this important study by filling in this questionnaire.

Be assured that all information provided by you will be treated as **STRICTLY CONFIDENTIAL** and will be used for study purposes only. If you have questions about this study, contact Chama Nshindano, MeTA Zambia **Coordinator, at 0977-595503**

Your favourable and quick response to this request will be highly appreciated.

Outlet Background Information

We would like to start by asking you questions about your firm

Q No.	Question	Response
1	In which sector is your outlet	1) Private 2) Non-Government Organization 3) Public Sector 4) Other (Specify)-----
2	What type of outlet is this?	1) Wholesale 2) Retail



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