

# THE MEDICINES IN EGYPT

## SURVEY REPORT

### The prices people have to pay for medicines in Egypt July 2004

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## **Executive summary**

The Research and Training Department of CAPA in collaboration with Genuine Pharma (a Contract Research Organization "CRO" - Egypt) have carried out a field study to measure the prices of medicines in Egypt using an international standardized methodology. Data on prices for 35 medicines were collected in the governmental and private sectors in the greater Cairo region. The availability of the medicines was also measured. The cost of treatment was calculated for 10 medicines and compared to the daily wage of the lowest paid government worker. In addition, we also identified the components of medicine prices.

The results showed that in Egypt, where 57% of the population live on approximately 1.6 US dollar per day, the prices of medicines are relatively high, making essential medicines unobtainable for many. Because the prices obtained by governmental procurement are reasonable, the resulting price to the patient is much lower than in the private sector. Private sector prices are considerably higher and prescribers in this sector use innovator brands more extensively, resulting in unaffordable treatment for most people. The prices of innovator brands are considerably higher than the prices of their generic equivalents. The prices of generic medicines also vary and the cheapest product is not always the most sold.

For a basic monthly treatment for diabetes, for example, the price may be as high as 1.5 days' wages for an innovator brand. Part of the problem is relatively high duties, tariffs and mark-ups.

## **Summary of Recommendations**

1. The government should consider a policy favoring the use of generic medicines by stimulating generic prescribing, increasing consumer awareness and acceptance of generic equivalents, and introducing incentives for pharmacists to comply with a policy on generics. The current, percentage-

based, pharmacy/wholesaler mark-ups favor the sales of pricy, mostly innovator-brand, drugs.

2. The government should take steps to reduce the burden of duties, taxes and mark-ups. One option is to enforce lower mark-up percentages, including those of governmental duties and taxes, along the drug distribution chain. Alternatively, changing the percentage-based scheme to a fixed mark-up for innovator brand, while keeping it as a percentage-based for cheaper generics, thus favoring more generic drug sales.
3. The central medical stores of the ministry of health and those of major wholesalers and/or distributors should be allowed to make direct sales to end users at discounted prices. Current legislation prohibits these outlets from such activity. The argument of the anticipated overwhelmingly crowded queues of patients in front of these outlets is defeated by the fact that the very same medicines can still be bought at their regular retail prices in the patient's nearest pharmacy. Such recommendation would benefit the poorest of patients who would take the trouble of visiting these scattered outlets for a 10-20% discount of a medicine's retail price.
4. The government should use the findings of this study for more in-depth reviews of policy options.

## 1. Introduction and background

During the months of October and November 2003, a field study on measuring the prices of medicines was carried out in Egypt. The goal of the study was to document and compare the prices of medicines in the different parts of the health sector and to compare them with those in other countries.

The field work carried out is based, with modifications in sampling, on a methodology developed by the World Health Organization (WHO) and Health Action International (HAI) using a short list of medicines to compare the prices of medicines in different health sectors. The methodology, which is described in the manual, *Medicine Prices: A new approach to measurement* (WHO/HAI, 2003), has been designed for the collection, analysis and interpretation of medicine prices in a standardized way. It also enables the composition of medicine prices to be investigated.

The objectives of our study were to answer the following questions:

- How are medicines priced in Egypt?
- What is the difference in the prices of innovator brand products and generic equivalents?
- What taxes and duties are levied on medicines and what is the level of the various mark-ups that contribute to the retail price of medicines?
- How affordable are medicines to low-income people in Egypt?

The study was carried out by Genuine Pharma with permission from the Ministry of Health and Population. The resulting report is distributed to the Ministry of Health and

Population, the Ministry of Finance, the Pharmacists Syndicate, the Physicians Syndicate, and the Dentists Syndicate of Egypt.

### **Country data**

Egypt has a population of 74.7 million <sup>(1)</sup>, 57% <sup>(2)</sup> of whom live below the poverty line. The GDP per capita (purchasing power parity) is 3700 US dollars <sup>(3)</sup>. Public health services cover an estimated 60% <sup>(4)</sup> of the population, but services are not completely free; there is a fee per prescription which goes into a revolving medicines fund. There are both public (MOHP-operated) and various private insurance systems covering approximately 60% <sup>(5)</sup> of the population.

There are approximately 20,000 private pharmacies <sup>(6)</sup>, distributed all over the country. By the law, doctors are not allowed to dispense medicines in their private clinics. Larger and/or conglomerate private clinics/surgeries and private hospitals that have a licensed and registered pharmacy outlet are authorized to sell medicines *only to their in-patients* and at the compulsory prices set forth by MOHP. The total size of the pharmaceuticals market is L.E 5.34 billion <sup>(7)</sup>. Some non-governmental organizations are working in the health sector; however there is no reliable data on their number or market share.

Medicine prices are regulated by MOHP. The retail price of a drug is determined at the time of its registration by a pricing committee which negotiates the price with the importer or the local manufacturer. Therefore, the drug price is an integral part of the registration process. Once a drug price has been set, it cannot be re-negotiated before 5 years.

In the public, MOHP-operated sector, an Essential Drug List is being developed (currently in final editing and is expected to be released in 2004, and enforced by the year 2005). Medicines are procured via national open and/or limited tenders. The National Drug Policy has already been issued for the years 2004-2005 in its second version; it gets revised every two years.

As of this report date, Egypt does not observe drug patents. However, by January 2005, Egypt's signature on the TRIPS agreement will become effective, and drug patents will, then, have to be honored.

The information gathered on the health and pharmaceutical sectors during this survey is attached as Annex I.

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<sup>1</sup> US Census Bureau, IDB, 2003 estimate, <http://www.census.gov/ipc/www/idbpyr.html>

<sup>2</sup> Ministry of Finance, Minister's Office, private communication

<sup>3</sup> CIA World Fact Book, 2003 estimate, <http://www.cia.gov/cia/publications/factbook/geos/eg.html>

<sup>4</sup> Ministry of Health and Population, CAPA, private communication

<sup>5</sup> Same as 4

<sup>6</sup> MOHP, CAPA, Office of Private Pharmacies Registrar

<sup>7</sup> IMS Health, Year-To-Date 2003 data

## 2. Methods

CAPA-MOHP decided to look at the prices of a number of essential medicines in the governmental sector and private pharmacies. A total of 35 substances were included in the survey. Of these, 30 medicines were pre-selected, as per the WHO/HAI study manual, as core medicines for international comparison and 5 were added by us as a supplementary list. The list is attached as Annex II.

For each substance, up to three products were monitored, namely:

- Innovator brand
- Most sold generic equivalent
- Lowest price generic equivalent.

In the public, MOHP-operated sector, patients are charged a "standard fee" which covers both doctors' consultation and medicines dispensed. Although these fees may vary by the setting (primary healthcare facility, municipal hospital, general public hospital) or vary by the patient's hospitalization status (outpatient clinic, outpatient *economy-priced* clinic, inpatients with a chronic disease, inpatients in a pre/post operative setting, inpatients in different room types and/or with different medical/non-medical facilities offered, etc.) they are almost always standard fees, that invariably include medicine prices. Therefore, and as the study manual suggested in page 41, the prices were measured only centrally. They were checked for availability at 4 health facilities in the greater Cairo region.

Therefore, it should be noted that "MOHP procurement prices" and "Public Sector" prices are synonymous in Egypt's situation, since medicines are dispensed to patients in the MOHP-operated health facilities at "cost" (i.e. procurement) price. Nonetheless, it is very common that physicians at those MOHP healthcare facilities will prescribe medicines that are not available for free in the facility's internal pharmacy. These are usually innovator-brand, or high-priced medicines that are not normally purchased via the MOHP tenders. In such cases, the patient or a family member, in case of inpatients, will have to go out and purchase the prescribed medicines from the nearest private pharmacy at retail price. This situation creates a complex "public/private" treatment setting, as the patient gets some of his prescription medicine for free and buy the rest at retail price. This should not affect the way in which medicine prices were collected in this study or the results presented hereunder, since we measure prices at different health sectors and not the cost of treatment per patients' categories.

Medicine prices are compulsory (legibly stamped or printed on every pack of all registered medicine, along with other vital data) and are regulated by MOHP. Therefore, there was no need to check for price variations at different pharmacies as the price is unified all over the country. However, medicines were only checked for availability at 4 private pharmacies in the greater Cairo region.

We also collected the procurement prices in the governmental sector which included:

- MOHP procurement prices for the fiscal year 2003-2004 (purchase / supply date: July 2003)

The MOHP purchased medicines fulfill the needs of all its directly operated healthcare facilities as well as the "General Medical Insurance" healthcare facilities; the later is enjoying a degree of administrative as well as financial autonomy, under the supervision of MOHP.

We opted to include the procurement prices of other large-quantity governmental purchasers in the "Others Sector"; since they are fully autonomous i.e. they are not under the control of MOHP. These included:

- Military Hospitals procurement prices (Ministry of Defense), fiscal year 2003-2004
- Police Authority Hospitals procurement prices (Ministry of Interior), fiscal year 2003-2004
- University Hospitals procurement prices (Ministry of Higher Education), fiscal year 2003-2004

Recounting our notice of physicians prescribing medicines that are not available in the facility's internal pharmacy, it should be noted that such practice is more under control in the last 3 types of facilities i.e. military hospitals, police authority hospitals, and university hospitals. Prescribers at these facilities are *strictly prohibited* from ordering medicines that are not on the "*lists*" of these hospitals. Also, the medicines lists of these hospitals enjoy more flexibility than MOHP medicines lists (the latter typically purchases *only* the lowest priced medicines), as they tend to include a variety of the same substance in different forms and strengths, from generic manufacturers as well as innovator brands. The purchase budgets of these governmental institutions allow for these variations. With the exception of university hospitals, the patients attending these hospitals are usually employees of the respective ministry, or their first-degree relatives. Compulsory medical insurance fees are deducted from the monthly salaries of the employees of these ministries to cover up for the treatment costs at these facilities.

In all sectors we also measured the availability of the medicines at the time of data collection. The use of an international reference price for standardized international comparison is explained under "Results". All prices were converted to US dollars using the exchange rate (buying rate that's LE 6.30 for US\$ 1) on October 1<sup>st</sup> 2003.

We also identified the components of medicine prices in order to make an estimate of the manufacturers' prices.

Finally, in order to find out what prices of medicines mean to the ordinary citizen, we measured the costs of some common treatments and compared them with the daily wage of the lowest paid government worker.

### **Sampling**

In order to obtain the data, we did not have to use the sampling method described in the WHO/HAI manual for selecting a representative number of public health facilities and pharmacies. This is because, as explained above, medicines are dispensed virtually for free in the MOHP-operated health facilities, as well as in the chosen 3

other sectors. For the private sector, the use of the compulsory price list obtained from the Drug Registration Office at MOHP was sufficient as it provides the price of all drugs authorized for marketing in Egypt. These data from central sources ensure that a sound statistical analysis can be performed if the selected core- and supplementary-list medicines are widely available.

The methodology described in the study manual allows for more sectors to be included, such as the private not-for-profit (NGO) sector. The drug market is fairly well regulated in Egypt in such a way that no drugs can be sold or purchased outside of licensed, registered, pharmacy premises that's periodically inspected for compliance with the MOHP "drug store specifications". It must also be managed by a licensed pharmacist. Therefore, there are no NGO players in the pharmaceutical market, apart from some charity organizations that donate medicines for free according to certain criteria; mainly the economic status of the patient, chronic disease conditions, and that the patient has been already prescribed the medicines in a governmental health institution, but unable to obtain it for one reason or another. We opted to include the procurement prices of the other 3 governmental health facilities in this sector as they are free from MOHP supervision, have their own budgets, and make their own purchase decisions.

### ***Finalizing the list of medicines***

The 30 medicines on the core list correspond very well with the Essential Drug List of Egypt which occasionally recommends other pharmaceutically equivalent substances or other strengths. For this reason and because we also wanted to monitor some medicines used for treating infectious diseases and cardiovascular diseases (CVD), we added the following substances:

1. Atorvastatin 20 mg tablet
2. Ceftioaxime 1 g vial powder for injection
3. Ceftriaxone 0.5 g vial powder for injection (different strength from the one on the core list)
4. Enalapril 20 mg tablet
5. Ofloxacin 200 mg tablet

### **3. Data collection**

We gathered data on governmental procurement prices (tender prices) for the fiscal year 2003-2004 (July 2003) and availability at the MOHP Central Medical Stores. At 4 governmental health facilities distributed in the North, South, East and West of the greater Cairo region, we checked *only* the availability of the list of medicines. The patients had to pay only a fixed "consultation ticket" price for which they received both medical service and the prescribed medicines.

The prices in private pharmacies were obtained by revising the compulsory prices list issued by the MOHP. Checks for availability *only* were done in 4 distributed pharmacies in the greater Cairo region (North, South, East and West districts).

Price components were identified by interviewing officials in the relevant health offices in MOHP. A standardized data collection form was used and data collectors were trained in a two-day workshop to ensure the reliability and reproducibility of the survey. A small pilot study was also undertaken.

The survey team consisted of 2 health-related personnel from Cairo, 1 data analyst, 2 data entry personnel, 1 administrative assistant, and the study manager. Data collection was completed in three weeks.

## 4. Results

The following analysis will be presented.

- 4.1 Median medicine price ratios for innovator brands and generic equivalents, in the private-for-profit sector in comparison with international reference prices.
- 4.2 Median medicine price ratios in the governmental sector in comparison with international reference prices.
- 4.3 The comparative medicine price ratios in the governmental and private for-profit sectors.
- 4.4 The availability of the medicines on the day of data collection.
- 4.5 The affordability for low-income people of treatment regimens from the governmental and private-for-profit sectors for selected common conditions with innovator brand, most commonly sold generic and lowest price generic medicines.
- 4.6 The cumulative level of domestic duties, taxes and mark-ups as it adds on to the ex-manufacturer's price and which people have to pay in the form of the final retail medicine price.

Most of the results will be presented as comparison with international reference prices (IRP). There will be a summary of the median price ratios of all medicines monitored (median of the median price ratios).

The international reference price used is the median price for generic medicines quoted from one or more international non-profit wholesalers to public or non-profit procurement agencies. The source for these prices is the Management Sciences for Health database. We have updated the original IRP data that were supplied in the study *Workbook*, with the most recent version from the MSH website<sup>(8)</sup>. This was done before attempting any analyses. The price is FOB (free on board). With efficient government procurement, our governmental net price ratios (no patient charge added) should be around one: i.e. close to the international reference price.

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<sup>8</sup> MSH updated prices are available through a link on <http://erc.msh.org/>



The report will also highlight some findings relating to individual prices in the different sectors monitored as well as between the prices of innovator brand medicines, most sold generic equivalents and lowest price generic equivalents. The reason for measuring both the most sold and the cheapest generic equivalents is to highlight any significant differences between what people would have paid if the lowest price generic equivalent had been prescribed and the one that is the most prescribed. In the governmental sector, only the price of the cheapest sold generic was found.

#### **4.1 Medicine prices in the private for-profit sector (private pharmacies)**

In the private for-profit sector, when medicine prices were compared with the international reference prices for generic medicines, the 26 innovator brand products were found to be priced at 3 times the international reference prices. Fifty percent of the innovator brand medicines surveyed were in the range of 1.01 to 8.03 times the reference prices.

**Table 1 - Summary of median price ratios, private for-profit sector, all 35 medicines**

	No. of substances found (availability)	Median price ratio	25 <sup>th</sup> percentile	75 <sup>th</sup> percentile
<b>Innovator brand</b>	<b>26 (100%)</b>	<b>2.73</b>	<b>1.01</b>	<b>8.03</b>
<b>Most sold generic equivalent</b>	<b>26 (100%)</b>	<b>1.92</b>	<b>0.78</b>	<b>2.86</b>
<b>Lowest price generic equivalent</b>	<b>26 (100%)</b>	<b>1.73</b>	<b>0.70</b>	<b>2.71</b>

For the generically equivalent products, the difference in price between the most sold and the cheapest was not so large; some substances were not available as more than one generic product and have, for the sake of analysis, been entered both as the most sold and lowest price generic equivalents. The median price of the most sold generic equivalents was 1.92 times the international reference price, with 50% of the medicines being sold in the range of 1.55 to 2.86 times the reference prices. The median of the median price ratio of the lowest price generic equivalents was 1.73 times the international reference price, with 50% of the medicines being sold in the range of 0.7 to 2.71 times the reference prices.

For a number of medicines, there was very little variation in price when comparing the most sold or lowest price generic equivalents. In general, however, the innovator brand product was about 1.5 to 2 times the price of the most sold generic equivalent and, in some cases, was as high as 10 times.

**Table 2 - Examples of medicine price ratios**

Generic name		Median price ratio
Aciclovir 200 mg	Innovator brand	11.01
	Most sold generic equivalent	1.11
	Lowest price generic equivalent	1.11
Captopril 25 mg	Innovator brand	2.41
	Most sold generic equivalent	1.94
	Lowest price generic equivalent	1.82
Diclofenac 25 mg	Innovator brand	11.76
	Most sold generic equivalent	7.06
	Lowest price generic equivalent	4.18
Co-trimoxazole 8+40 mg/ml	Innovator brand	1.67
	Most sold generic equivalent	1.07
	Lowest price generic equivalent	0.72

When comparing the prices of all the medicines (Annex III), the cheapest and most expensive items were found to be 0.08 times and 62.22 times the international reference price respectively. The lowest price generic equivalent was found to be 0.08 times the international reference price, while the most expensive generic equivalent was 30.22 times the same reference price.

#### 4.2 Medicine prices in the governmental sector

**Table 3 - Examples of price ratios and summary price ratios in the governmental sector (procurement and facility prices to patients)**

	Procurement price ratio (same as price to patient)	Availability in facilities
Amoxicillin 250 mg	1.34	100%
Ceftriaxone 1 g inj	0.78	100%
Glibenclamide 5 mg	1.52	100%
Summary price ratio/ average availability	0.95	100%

A summary ratio of 0.95 in governmental sector prices (i.e. 5% below the international free on board (FOB) reference price) is reassuring for procurement officers as the comparison is between an FOB price and a price which includes cost, insurance and freight (CIF).

### 4.3 Comparative medicine price ratios in the governmental and private sectors

**Table 4 - Summary data**

	Governmental Median price ratio	For-profit Median price ratio	vs. Governmental
Innovator brand	-	2.73	-
Most sold generic equivalent	0.95	1.93	202.9%
Lowest price generic equivalent	0.95	1.69	178.6%

As no innovator brand product was found in the governmental sector, the comparison of innovator brands between the sectors becomes impossible and we have compared only the prices of generic equivalents.

For the governmental sector, the overall price of the generic medicines surveyed was 5% below the international reference price. However, the median of private sector innovator brand prices was 2.73 times the international reference price. The prices charged for the most sold generic medicines in the private sector were two times the prices in the governmental sector, while the prices of the lowest price generic equivalents were a little less than double the governmental sector patient prices.

When comparing the prices that patients pay in each sector, it is clear that the prices are lowest in the governmental sector. It was beyond the scope of this survey to identify whether innovator brands or the most sold generic equivalents are the most widely sold products in the private sector.

**Table 5 Comparing price ratios between the two sectors for individual products**

Generic name	Type	Private	Governmental
Diclofenac 25 mg	Innovator brand	11.76	NA
	Most sold generic equivalent	7.06	2.32
	Lowest price generic equivalent	4.18	2.32
Glibenclamide 5 mg	Innovator brand	9.76	NA
	Most sold generic equivalent	2.44	1.52
	Lowest price generic equivalent	2.44	1.52

The examples in Tables 5 and 6 are included to illustrate the situation by using data on individual medicines. Price ratios are used in Table 5; in Table 6, actual prices are given in EGP and the different products are listed by their sales names. Again, the data reveal large differences between the two sectors, but also between innovator brand products and generic equivalents in the private pharmacies.

### 4.4 Availability

The average availability of medicines was 100% in the public sector and on innovator brands and on the most sold generic medicines in the private sector. One explanation for high availability in the public sector is that Egypt has an Essential Drug List which

corresponds very well with the core list used in the survey. Although a few essential medicines have been added by use of the supplementary list, average availability remains high. Nevertheless, it has to be remembered that our estimate is based on a one point in time investigation.

**Table 6 - Comparing actual prices between the two sectors for 100 units of individual products**

Generic name	Type	Product name	Private	Product name	Public
Diclofenac 25 mg	Innovator brand	Voltaren	37.50		NA
	Most sold generic equivalent	Declophen	22.50	Romarin	7.40
	Lowest price generic equivalent	Declofenac	13.33	Romarin	7.40
Glibenclamide 5 mg	Innovator brand	Daonil	25		NA
	Most sold generic equivalent	Diaben	6.25	Glibenclamide	3.90
	Lowest price generic equivalent	Diaben	6.25	Glibenclamide	3.90

#### 4.5 Affordability

A full list of the 10 conditions for which the affordability of treatment was measured is included as Annex IV. The monthly salary of the lowest paid government worker was EGP 300: i.e. EGP 10 per day. Table 7 illustrates the affordability of treatment in the public sector and the private sector for one acute and one chronic condition.

**Table 7 - Cost of treatment for pneumonia and diabetes**

Treatment	Type	Procurement / Public		Private pharmacies	
		Median price	Days' wages	Median price	Days' Wages
Pneumonia: Amoxicillin 250 mg x 3 for 7 days	Innovator brand	NA		NA	
	Most sold generic equivalent	3.02	0.3	6.74	0.6
	Lowest price generic equivalent	3.02	0.3	4.73	0.5
Diabetes: Glibenclamide 5 mg x 2 for 30 days	Innovator brand	NA		15.0	1.5
	Most sold generic equivalent	2.34	0.2	3.75	0.4
	Lowest price generic equivalent	2.34	0.2	3.75	0.4

For a course of the most sold generic brand of amoxicillin to treat pneumonia, a patient would need to pay the equivalent of 0.3 days' wages of the lowest paid government worker to get a course of therapy from governmental sector health facilities. In the private-for-profit sector, the cost expressed in days' wages would be doubled. A similar conclusion can be drawn from the cost of treatment using the lowest price generic from the governmental sector and private pharmacies (0.3

versus 0.5 respectively). It is important to bear in mind that these costs refer only to the medicine component of the total treatment costs. Consultation fees and diagnostic tests may mean that the total cost to the patient is considerably higher. Nevertheless, other treatment components such as an antipyretic (e.g. paracetamol, or aspirin) or a vitamin C supplement are not taken into account.

For a one month course of glibenclamide to treat diabetes, a patient would need to pay 0.2 days' wages in the governmental sector. In the private pharmacies, the cost expressed in days' wages would be, again, doubled.

#### **4.6 Price components and cumulative mark-up**

We measured price components for medicines, both imported and locally produced products, to study differences in mark-ups and to assess the impact of tariffs, taxes and mark-ups on the price the patient pays. Tables 8a and 8b present the price components of an imported product and a locally produced product. The result is given both as percentage add-ons and cumulatively.

**Table 8a - Price components and cumulative mark-up for an imported medicine**

Component	% or Mark-up	Price - Cumulative %	Notes
FOB price (index price)	-	100.00	
Banking fees	1%	101.00	
Customs stamps	14%	115.14	
Customs clearance	0.55%	115.77	Total unit cost; TUC
Importer profit	6.4%	123.18	
Distributor profit	7.53%	132.46	
Pharmacy profit	13.64%	150.53	Public price
Sales tax	1.65%	153.01	1.65% of public price
Medical Profession Stamp	1%	154.51	1% of public price
Total Add-ons		54.51	

For imported innovator brands and generic medicines, the price components are the same; the add-ons to the import price (FOB) is more than one and half times. The first three charges (15.77%) would not be included in the price of locally produced medicines, but the price would still increase dramatically as is shown in table 8b. By the end of the calculation, a medicine incurs mark-ups that are a little bit over triple its cost price. Nevertheless, the mark-ups after the ex-factory price are approximately 30%.

A sales tax and a medical profession stamp are applied, but these do not make a large impact as they are only 2.65% in case of imported finished medicines, and *effectively* 4.6% for a locally manufactured medicine. Moreover, an 11.6% royalty is waived from medicines that are not manufactured under license.

**Table 8b - Price components and cumulative mark-up for a locally produced medicine**

Component	% or Mark-up	Price - Cumulative %	Notes
Index price	-	100.00	Direct cost price
Indirect manufacturing costs	20%	120.00	
Administration costs	30%	156.00	
Marketing expenses	15%	179.40	Total unit cost; TUC
Research expenses	3%	184.78	
Scientific office	11.6%	206.22	
Royalty (if under license)	11.6%	230.14	Cost price
Manufacturer profit	20%	276.17	ex-factory price
Cash - Advance	4.5%	288.59	
Distributor price	-	309.59	7.86% of ex-factory
Pharmacy profit	25%	386.99	
Sales tax		400.80	5% of ex-factory
Medical Profession Stamp	1%	404.81	1% of public price
Total Add-ons		304.81	

However, the problem with this percent-based scheme is that it's *cumulative*. For example the calculated 4.6% mark-up for the combined sales tax and the medical profession stamp in table 8b *effectively* add 17.82% increase to the pharmacy price, 128.64% increase of the ex-factory price, and 304.81% increase to cost price. Similar conclusions can be deduced from the price composition scheme for imported medicines. The questionnaire on the national pharmaceutical sector indicates that there is no policy of tax exemption for essential medicines.

The main difference between sectors is the size and distribution of mark-ups. The mark-ups for the distributor and the pharmacy are much higher in case of locally produced products, with the intention to encourage their *sales*. In effect, it does exactly the opposite, as in this scheme the manufacturer would receive EGP 46.03 in profits versus EGP 77.40 for the pharmacy; a 1.7 fold what the manufacturer get. Again, this is due to the mathematically cumulative nature of such schemes.

## Discussion

Our survey of medicines prices in Egypt shows large differences in the prices of the same generic substance between the governmental and the private for-profit sectors and between innovator brand products and their generic equivalents. This is a common finding in poor countries with unregulated or poorly regulated pharmaceutical sectors. The differences in price between innovator brand products and generic equivalents were found to be as high as 3 times; one item was found to be as high as 67 times that of the international reference price. Prices in the

governmental sector are consistently lower than in the private sector. The low availability of medicines in the governmental sector is not uncommon in developing countries, but is still unacceptable; since this is the sector where poor people would hope that some, if not all, of the costs would be covered. Can this be explained by inefficiency in the governmental sector or a lack of funding?

Measured in terms of affordability, the cost to the patient would vary considerably: there is, for example, a double-fold difference between the price of the most sold generic in the private sector and the most sold generic equivalent in the governmental sector for the antibiotic amoxicillin and another double fold for the antidiabetic glibenclamide.

Egypt has a small and fragmented NGO and other governmental medical insurance sectors that we decided not to monitor. We are of the opinion that this will only marginally affect the results.

One limitation to medicine price studies, such as the present one, is the quality of the products surveyed. In the present study, all products were registered in Egypt so we assume they were of acceptable quality. However, since no quality control testing was performed, we cannot say whether any of the products were substandard. If the quality of medicines is considered a possible problem, it could be addressed in any follow up to the study.

The pharmaceutical sector is a difficult sector to manage in many countries. In contrast to other markets, the pharmaceutical sector will be different because the person prescribing the treatment is different from the payer. The payer, who in developing countries is often the patient, therefore depends on decisions made by people who are either not interested in prices or are interested in making as much money as possible. This is why most countries regulate the sector through laws and regulations and ensure enforcement through such mechanisms as inspections.

## **5. Conclusions and recommendations**

The principal conclusions of the study are as follows.

- Egypt's governmental health sector is efficient in procurement and charges reasonably low prices to patients.
- Prices are considerably higher in the private sector and innovator brands are possibly used more extensively as there are no incentives to prescribe and sell generic equivalents, resulting in treatment being unaffordable for most people.
- The prices of innovator brands are considerably higher than the prices of their generic equivalents
- The prices of generic medicines also vary and the cheapest generic equivalent is not always the most sold.
- The current medicines policy is taxing the poor. The taxes, tariffs and mark-ups are relatively high and contribute to making many medicines unaffordable for the majority of patients.

On the basis of the findings of the study, the following recommendations are made to the government of Egypt.

1. The findings of this study should be used to adjust the national drug policy.
2. An in-depth study of the private sector should be initiated to investigate prescribing practice, including whether innovator brands are more frequently prescribed than the most sold generic equivalents.
3. Steps should be taken to reduce the burden of duties, taxes and mark-ups on medicines. Policy options include:
  - Replacing an uncontrolled, cumulative, percentage mark-up scheme with a fixed fee and a fixed, lower mark-up, or relating all percentages to a single base *figure* that is the total cost of the unit or the ex-factory price. This will effectively eliminate any mark-ups accumulation
4. A policy favoring the use of generic medicines should be introduced. Policy options include:
  - Promoting generic prescribing
  - Introducing incentives for pharmacists to comply with a generics policy by replacing some of the percentage mark-up with a dispensing fee
  - Increasing consumer awareness and acceptance of the availability of generic medicines as prescription only medicines
5. High manufacturers' prices in the private sector should be reduced. Policy options include making the Central Medical Stores a wholesaler of essential medicines for the private sector as well as the governmental sector: for example, by transforming it into an autonomous state wholesaler.
6. The impact of policy changes should be measured by regular surveys of medicine prices.

Such a study using basic indicators cannot give a complete picture of the pharmaceutical sector in Egypt. However, it is the hope of the CAPA that the findings and recommendations of this report will be studied and form the basis for an in-depth examination of the pharmaceutical sector in Egypt in order to improve access to and affordability of medicines for all.