

Medicine Prices, Affordability, Availability and Component Costs in Syria

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1. Acknowledgments

Permission to undertake this survey was given by the Ministry of Health. Thank you to all who participated in the collection, entry and analysis of the data. Special thanks to all the pharmacists who so willingly provided the data.

The survey was funded by the Pharmaceutical Drugs Study Directorate of the Ministry of Health.

2. Abbreviations and Acronyms

GDP	Gross Domestic Product
HAI	Health Action International
IB	Innovator brand
IRP	International reference price
LPG	Lowest price generic equivalent
MPR	Median price ratio
MSH	Management Sciences for Health
MSP	Manufacturer's selling price
SP	Syrian Pound
WHO	World Health Organization

3. Executive Summary

In late 2003 the Ministry of Health (Directorate of Pharmaceutical Studies) conducted a field study to measure the prices, availability, affordability and component costs of some important medicines in Syria using the World Health Organization/Health Action International price measurement methodology.

The prices of 27 medicines were collected in the public sector (procurement prices) private sector (patient prices in private retail pharmacies) and the price paid by private inpatients in public hospitals (termed the 'other' sector) in the capital, Damascus, and in country regions of Damascus, Aleppo, and Latakia. For each medicine, prices were collected and analysed for the innovator brand (product identified centrally) and the lowest price generic equivalent (product identified at each facility sampled). The price of the most sold product (innovator or generic) was also collected. The affordability of eight standard treatments was assessed as the number of days the lowest paid unskilled government worker would have to work to purchase the treatment. Component costs (mark-ups etc) were also assessed.

The results showed that the availability of medicines surveyed was very good in both sectors. In the private retail pharmacies surveyed, the median availability was 98% for generics, and 95% for the innovator brands known to be on the market. If innovator brands for all medicines had been surveyed the median availability would have been 0%. In the public hospitals surveyed, the availability was also very good for generics (93%) and no innovator brands were found

Prices of the lowest priced generics (government procurement prices and patient prices) were generally acceptable in comparison to the international reference prices, but were high for some individual medicines including diazepam, diclofenac, and paracetamol. In the private sector, innovator brands were very expensive; about three times the price of the lowest priced generics. Prices did not vary across pharmacies surveyed and the most sold product was usually the lowest priced generic. For a number of medicines, the public sector is purchasing expensive innovator brands as well as lower priced generics

The survey showed that some treatments are not affordable to low-paid Syrians e.g. the lowest paid unskilled government worker has to work over 3 days to pay for a course of aciclovir to treat a viral infection

Costs in addition to raw materials, manufacturing and packaging include 20% mark-up as profit for the manufacturer, 8% for propaganda, and 8% for the wholesale. Pharmacy mark-ups are applied regressively, and range from 30% to 8% but the amount is not applied across the total procurement price

:On the basis of the evidence, the following recommendations are made

- Medicine prices should be regularly monitored
- Transparency is needed so that price comparisons are possible
- Where prices of specific medicines are very high (MPR of 10 or more), investigation should occur to identify means to reduce these specific prices.
- Apply the pharmacy markup for the total procurement price.
- Consider abolishing the propaganda payment to pharmaceutical companies.
- An in-depth investigation should be undertaken on policies to lower medicines prices and make medicines more affordable, including a review of the fixed pricing formula and price regulations in other countries.

4. Syrian Health Sector

Syria has a population of 18 million. The gross domestic product (GDP) per capita is \$1216 USD. Health expenditure per capita is \$ 55.46 USD, 4.56% of the GDP. Government expenditure per capita on medicines is \$27.25, 2.25% of GDP.

Public hospitals in Syria are run by the Ministry of Health, universities or the military. Medicines are procured through tenders. Private hospitals procure through private pharmacies.

There are no public sector health facilities in Syria and in public hospitals patients receive medicines free-of-charge. There is no public health insurance scheme. However, private patients in public hospitals have to pay for their medicines. There is

no public health insurance – patients pay the full price of medicines in the private sector. The patient price is fixed by the Ministry of Health using a standard formula, and is printed on the packet. Some prescription medicines can be purchased without a prescription, for example, beta-blockers. Others require a prescription.

Syria has a National Medicines List containing approximately 5000 medicines. Approximately 10% of these medicines are imported (mainly vaccines) and 90% are locally manufactured in 54 factories. Manufacturing is limited in Syria; prescription medicines are permitted to be manufactured in a maximum of 7 factories (innovator brands and generic equivalents) and over-the-counter medicines in a maximum of 10 factories.

All medicines on the National Medicines List are assessed and registered by the Syrian Drug Committee. The Committee, consisting of 13 members and headed by the Ministry of Health, is responsible for all pharmaceutical matters in Syria. Syria has an Essential Medicines List – all the surveyed medicines are on the EML. A national medicines policy is under development.

At the time of the survey, patent law did not apply in Syria. Generic substitution does not generally occur – only if the innovator brand is not available. Doctors are not permitted to dispense medicines.

Factories are certified for Good Manufacturing Practice (GMP). Ministry of Health laboratories undertake quality assessments. Samples from the first and second batch are tested then samples from each tenth batch are tested for critical products such as injections and eye preparations. In addition, random samples are tested from private pharmacies.

Objectives .5

The goal of the study was to document and compare the price and availability of medicines in different sectors in Syria, and to compare prices with those in other countries.

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

- 1- What price do the people of Syria pay for a selection of medicines in private pharmacies, and how do these retail prices compare with government procurement prices?
- 2- What is the difference in the prices of innovator brand products and generic equivalents, and how do these prices compare with international reference prices?
- 3- How available are these medicines?
- 4- How affordable are standard treatments to low-income people in Syria ?
- 5- What 'add-on' costs (e.g. taxes, mark-ups) are applied to medicines in Syria?
- 6- How do Syrian prices compare to other countries?

6. Methodology

The survey was undertaken during the months of November and December 2003. It was based on a methodology developed by the World Health Organization and Health Action International (WHO/HAI 2003).

6.1 Medicines surveyed

The Ministry of Health in Syria surveyed the price of a number of medicines in the public sector (procurement price), private pharmacies (patient price), and the price paid by private patients in public hospitals (termed the ‘other’ sector). Data was collected for 28 medicines, however, data for one medicine was not included in the analysis as there was no international reference price.

Of the 27 medicines, 22 medicines were from the WHO/HAI ‘core’ list of medicines (selected so that international comparisons were possible) and 5 were included as a supplementary list (see Annex 1 for a list of all medicines in the analysis). Eight medicines from the WHO/HAI core list were not surveyed as they are not available in Syria, namely, nevirapine, indinavir, zidovudine, hydrochlorothiazide, nifedipine retard, fluphenzine, artesunate, and sulfadoxine/pyrimethamine.

For each medicine, one pre-selected strength and dose form was surveyed, and three product types:

- Innovator brand (IB) – product identified centrally
- Most sold product – product determined in each facility
- Lower price generic equivalent (LPG) – product determined in each facility

However, the innovator brands of the following medicines were not surveyed as they are not on the market in Syria: amoxicillin, beclometasone inhaler, ceftriaxone injection, ciprofloxacin, fluconazole, losartan, furosemide, fluoxetine, glibenclamide, omeprazole, metformin, and salbutamol inhaler. Data for the innovator brands of phenytoin and diltiazem were collected but subsequently deleted when it was determined the products were generics and not the innovator brands.

Note: At the time of the survey, the WHO/HAI methodology recommended surveying the most sold *generic* equivalent of each medicine (with the product identified centrally).¹ In this survey, data for the most sold product was collected – whether generic or innovator brand. Therefore, the analysis in this report does not generally include data on the most sold product.

6.2 Sectors and regions surveyed

Three sectors were surveyed – public, private retail pharmacies, and an ‘other’ sector, that is, prices paid by private patients in public hospitals.

WHO and HAI no longer recommend surveying the most sold generic equivalent due to difficulties¹ identifying the product and confusion with the most sold product

The survey measured the following:

	Public sector	Private private retail) (pharmacies	Other private patients in) (public hospitals
Procurement price	✓		
Price to the patient		✓	✓
Availability of medicines		✓	✓
Affordability of standard treatments		✓	✓

Four regions were surveyed. In accordance with the WHO/HAI methodology, the capital Damascus was chosen, and three country regions – Damascus, Aleppo, Latakia. The three country regions were randomly chosen.

6.3 Data collection and data entry

Patient prices and availability

Data on the price and availability of medicines were collected from 57 private pharmacies and 43 public hospitals. This was substantially more than the 20 private pharmacies and 20 public facilities recommended in the WHO/HAI manual.

A standardized data collection form was used and data collectors were trained at a workshop prior to data collection. All data collection was completed in one month.

The data was collected by staff from the Drugs Directorate (pharmacists and pharmacy technicians).

Procurement prices

Tender prices were collected at six major hospitals run by the Ministry of Health or universities.

All data was double entered in the computerised workbook provided with the manual. The data was imported into a newer version of the workbook that had inbuilt error checking programmes which were subsequently used to ‘check’ the data. The final workbook as subject to external technical review by the HAI project director.

6.4 Data analysis

Only price data for medicines found in 4 or more pharmacies, or public hospitals in the ‘other sector’, were included in the analysis. Procurement data was based on a minimum of 1 tender. Availability data was based on all facilities surveyed.

Affordability was automatically calculated based on 8 pre-selected treatment regimens in the workbook. The daily salary of the lowest paid unskilled government worker was entered in the workbook (100 SP, about \$2 USD

6.5 International reference prices and median price ratios

International reference prices are used in the WHO/HAI methodology to facilitate national and international price comparisons. Management Sciences for Health (MSH) 2002 median supplier unit prices were used as the reference for this survey (see MSH International Price Guide Indicator on <http://erc.msh.org>). Where no supplier prices were available, median agency unit prices were used. MSH prices represent recent procurement prices offered by predominantly not-for-profit suppliers to developing countries for multisource medicines. These suppliers sell in large quantities to governments and NGOs so the prices tend to be low.

The data from the survey are not presented in Syrian Pounds but as median price ratios (MPRs) calculated using the international reference prices. The median price ratio is the median local cost (in Syrian Pounds) divided by the reference median unit price (converted to Syrian Pounds using the exchange rate on the first day of data collection i.e. 1 USD = 51.5 SP).

The ratio describes how much greater or less the local medicine price is to the international reference price e.g. an MPR of 5 means that the local medicine price is five times that of the international reference price; a MPR of 1 means the local price is the same as the reference price. WHO and HAI consider an $MPR \leq 1$ is efficient for public sector procurement and an $MPR \leq 2.5$ is acceptable in the private sector. Larger price ratios are considered excessive.

7. Results

7.1 Medicine prices in private retail pharmacies

As shown in Table 1, in private retail pharmacies the innovator brand products were found to be priced at 9.6 times the international reference prices. Fifty percent of the innovator brand medicines surveyed were in the range of 3.94 to 14.89 times the international reference prices.

The median of the median price ratios for the lowest price generic equivalents was 2.51 times the international reference prices, with 50% of the medicines ranged from 1.56 to 3.36 times the reference prices.

Table 1: Median MPR (median price ratios), private retail pharmacies

	No. of medicines	Median MPR	25 th percentile	75 th percentile
Innovator brand	10	9.6	3.94	14.89
Lowest price generic equivalent	27	2.51	1.56	3.36

Table 2 shows the data for the 10 medicines where both the innovator brand and generic were found. The innovator brands were nearly three times the price of the lowest priced generics.

Table 2: Median MPR (median price ratios), private retail pharmacies

	No. of medicines in paired analysis	Median MPR	25 th percentile	75 th percentile
Innovator brand	10	9.6	3.94	14.89
Lowest price generic equivalent	10	3.36	1.93	5.89

Table 3 lists median price ratios and percentile data for some individual medicines in private retail pharmacies. No price variation was seen across the pharmacies. Of particular note are the very high prices being paid by patients for paracetamol, diclofenac, diazepam, and atenolol.

Table 3: Examples of individual medicine price ratios, private retail pharmacies

Medicine	Type	Median price ratio	25 th percentile	75 th percentile
Aciclovir 200mg tab	Innovator brand	12.11	12.11	12.11
	Lowest price generic	3.33	3.33	3.33
Atenolol 50mg tab	Innovator brand	14.38	14.38	14.38
	Lowest price generic	4.97	4.97	4.97
Carbamazepine 200 mg tab	Innovator brand	7.09	7.09	7.09
	Lowest price generic	2.87	2.87	2.87
Diazepam 5mg tab	Innovator brand	15.07	15.07	15.07
	Lowest price generic	6.36	6.36	6.36
Diclofenac 25 mg tab	Innovator brand	23.71	23.71	23.71
	Lowest price generic	6.32	6.32	6.32
Furosemide 40mg tab	Innovator brand	not surveyed		
	Lowest price generic	4.47	4.47	4.47
Omeprazole 20mg tab	Innovator brand	not surveyed		
	Lowest price generic	1.49	1.49	1.49
Paracetamol 500mg tab	Innovator brand	22.65	22.65	22.65
	Lowest price generic	6.47	6.47	6.47
Ranitidine 150mg tab	Innovator brand	2.58	2.58	2.58
	Lowest price generic	0.92	0.92	0.92
Salbutamol 0.1mg/dose inhaler	Innovator brand	not surveyed		
	Lowest price generic	1.17	1.17	1.17

7.2 Medicine prices for private inpatients in public hospitals

None of the 13 innovator brands surveyed were found in this sector so no median price ratios were calculated for innovator products. As shown in Table 4, the median of the median price ratios for the lowest priced generics was 1.9, with 50% of the

prices between 1.26 and 2.67 times the reference price. Overall, medicines were cheaper in this ‘sector’ than in the private pharmacies.

Table 4: Median MPR (median price ratios), private patients in public hospitals

	No. of medicines	Median MPR	25 th percentile	75 th percentile
Innovator brand	0	-	-	-
Lowest price generic equivalent	27	1.9	1.26	2.67

Table 5 lists median price ratios and percentile data for some individual medicines purchased by private inpatients in public hospitals. As with the private sector, no price variations were seen across the public hospitals surveyed. Again, paracetamol, diclofenac and atenolol were high cost items compared to the international reference price.

Table 5: Examples of individual medicine price ratios, private patients in public hospitals

Medicine	Type	Median price ratio	25 th percentile	75 th percentile
Amitriptyline 25 mg tab	Lowest priced generic	2.91	2.91	2.91
Atenolol 50mg tab	Lowest priced generic	3.86	3.86	3.86
Beclometasone 0.05mg/dose inhaler	Lowest priced generic	0.79	0.79	0.79
Diclofenac 25mg tab	Lowest priced generic	4.74	4.74	4.74
Furosemide 40mg tab	Lowest priced generic	3.66	3.66	3.66
Glibenclamide 5mg tab	Lowest priced generic	1.90	1.90	1.90
Lovastatin 20mg tab	Lowest priced generic	1.61	1.61	1.61
Metronidazole 500mg tab	Lowest priced generic	2.52	2.52	2.52
Paracetamol 500mg tab	Lowest priced generic	5.03	5.03	5.03

7.3 Procurement prices in the public sector

As shown in table 7, the median of the median price ratios for the innovator brands procured by the government in the public sector was 6.99 (11 medicines) with 50% in the range of 2.98 to 12.73 times the reference price.

The median of the median price ratios for the lowest price generic equivalents was 1.54 times the international reference prices, with 50% of the medicines ranged from 1.05 to 2.37 times the reference prices.

Table 7: Median MPR (median price ratios), public sector procurement prices

	No. of medicines	Median MPR	25 th percentile	75 th percentile
Innovator brand	11	6.99	2.98	12.73
Lowest price generic equivalent	27	1.54	1.05	2.37

Table 8 shows the data for the 11 medicines where both the innovator brand and generic were found. As with the private sector patient prices, the innovator brands were nearly three times the price of the lowest priced generics.

Table 8: Median MPR (median price ratios), public sector procurement prices

	No. of medicines in paired analysis	Median MPR	25 th percentile	75 th percentile
Innovator brand	11	6.99	2.98	12.73
Lowest price generic equivalent	11	2.34	1.44	3.72

Table 9 lists median price ratios and percentile data for some individual medicines procured by the government.

Table 9: Examples of individual medicine price ratios, public sector procurement prices

Medicine	Type	Median price ratio	25 th percentile	75 th percentile
Aciclovir 200 mg tab	Innovator brand	10.23	10.23	10.23
	Lowest price generic	2.34	2.34	2.34
Ceftriaxone 1g injection	Innovator brand	not surveyed		
	Lowest price generic	0.72	0.72	0.72
Ciprofloxacin 500mg tab	Innovator brand	not surveyed		
	Lowest price generic	1.25	1.25	1.25
Co-trimoxazole paed susp 8+40mg/ml	Innovator brand	2.77	2.77	2.77
	Lowest price generic	0.97	0.97	0.97
Diclofenac 25 mg tab	Innovator brand	21.68	21.68	21.68
	Lowest price generic	4.52	4.52	4.52
Diltiazem 60mg tab	Innovator brand	not surveyed		
	Lowest price generic	2.40	2.40	2.40
Fluconazole 200mg tab	Innovator brand	not surveyed		
	Lowest price generic	1.67	1.67	1.67

Paracetamol 500mg tab	Innovator brand	18.77	18.77	18.77
	Lowest price generic	3.88	3.88	3.88
Salbutamol 0.1mg/dose inhaler	Innovator brand	not surveyed		
	Lowest price generic	0.69	0.69	0.69

7.5 Comparison of prices across sectors

For the 27 generic medicines in the analysis, private inpatients in public hospitals paid 23% more for these medicines than the government procurement price (1.9 compared to 1.54, as shown in table 10). Prices in private retail pharmacies were 62% more than government procurement prices for generics (2.51 compared to 1.54), and 11% for innovator brands (9.6 compared to 8.61).

Table 10: Median MPR (median price ratios), all sectors

Type	No. of meds	Sectors: median MPR		
		Public procurement	Private inpatients	Private retail pharmacies
Lowest price generic equiv.	27	1.54	1.9	2.51
Innovator brand	10	8.61	-	9.6

7.6 Comparison of prices for the most sold products and lowest priced generics

As shown in table 11, in private retail pharmacies the median of the median price ratios for the most sold product (innovator brand or generic, determined at each pharmacy) was 2.55 compared to 2.51 for the lowest priced generic. In the public sector (procurement prices), the median of the median price ratios for the most sold product was 1.67 compared to 1.54 for the lowest priced generics. In the private inpatient sector, the most sold product was the lowest priced generic.

Table 11: Median MPR (median price ratio), most sold product (innovator or generic) and lowest priced generic, in two sectors

Type	Private pharmacies		Public sector (procurement)	
	No. of meds in paired analysis	Median MPR	No. of meds in paired analysis	Median MPR
Most sold product	22	2.55	27	1.67
Lowest priced generic equivalent	22	2.51	27	1.54

7.7 Availability in private retail pharmacies and public hospitals for private inpatients

In the 57 private pharmacies surveyed, the median % availability of generics was 98.2%. For the 13 innovator brands surveyed, the median % availability was 94.7%. The lowest availability was 93% for salbutamol inhaler. The innovator brands of the

other 14 medicines were not surveyed as they were known to be unavailable. If they were included in the survey the median availability would have been 0%.

The median % availability of generics in the 43 public hospitals surveyed was 93%. No innovator brands were found in the public hospitals. The lowest availability was 81% for loratadine tablets. These availability figures are very good when compared with other surveys that have been undertaken.

7.8 Affordability of standard treatments

Table 12 illustrates the affordability of five standard treatments, two for acute conditions and three for chronic, when purchased by a lowest paid unskilled government worker from private retail pharmacies. A patient needing amoxicillin would have to work 0.6 days to pay for a weeks treatment with the lowest priced generic. Purchasing aciclovir to treat a viral infection would take 3.7 days wages for the lowest priced generic and over 13 days for the innovator brand. Diabetics needing metformin would have to pay 1.6 days wages to purchase a month's treatment in the private sector. Hypertensive patients on atenolol 50mg daily would have to work 0.6 days for the lowest priced generic and 1.8 days for the innovator brand. Depressed patients needing amitriptyline need to work over a day for a month's treatment.

Table 12 Affordability of standard treatments purchased from private retail pharmacies

Treatment	Type	Cost in Syrian Pounds	Days wages
Bacterial infection: Amoxicillin 250mg three times daily for 7 days	Innovator brand	not surveyed	
	Lowest priced generic equivalent	59.06	0.6
Viral infection: Aciclovir 200mg tablet five times daily for 5 days	Innovator brand	1331.25	13.3
	Lowest priced generic equivalent	366.25	3.7
Diabetes: Metformin 500mg three times daily for 30 days	Innovator brand	not surveyed	
	Lowest priced generic equivalent	163.8	1.6
:Hypertension Atenolol 50mg daily for 30 days	Innovator brand	182.14	1.8
	Lowest priced generic equivalent	63	0.6
:Depression Amitriptyline 25mg three times daily for 30 days	Innovator brand	-	-
	Lowest priced generic equivalent	126	1.3

The situation for a family is illustrated in table 13 where one parent is a diabetic on glibenclamide, one parent has an ulcer treated with ranitidine and their asthmatic child puffs a beclometasone inhaler. The parent, a lowest paid unskilled government worker, would have to work 4 days to afford the families treatment when purchasing lowest priced generics from private retail pharmacies.

Table 13 Affordability of standard treatments for a family situation, purchasing lowest priced generics from private retail pharmacies

Treatment	Cost in Syrian Pounds	Days wages
Diabetes: Glibenclamide twice daily for 30 days	37.98	0.4
Ulcer: Ranitidine 150mg twice daily for 30 days	204	2
Asthma Beclometasone inhaler 0.05mg/dose, 200 doses (1 inhaler)	160	1.6
Total		4 days

7.9 Price components

In Syria there is a fixed price system whose components are the cost price of raw materials, manufacturing and packaging, 20% mark-up as profit for the manufacturer, 8% markup for propaganda by the company, 8% wholesale mark-up and the pharmacists mark-up is applied regressively as described in table 14

While the pharmacy mark-up is being applied regressively, the amount is not applied across the total procurement price. For example, were a pharmacist buys a medicine for 75 Syrian Pounds, the mark-up is 30% for the first 40 SP, plus 20% for the remaining 35 SP

Table 14 Pharmacists mark-up

Pharmacists mark-up	Pharmacists procurement price in local price
30%	1-40
20%	41-80
15%	81-200
10%	201-500
8%	or more 501

Table 15 gives an example of actual mark-ups in the private sector (20 aciclovir 200mg tabs, locally manufactured). The wholesale mark-up was 8% for both the

innovator brand and generic, and the retail pharmacy mark-up was 11-12%. The cumulative mark-up was about 20%

Table 15 Price components, 20 aciclovir 200mg tabs, locally manufactured

Type of charge	Amount	Price of 20 tabs in Syrian Pounds	Cumulative % mark-up
<i>Innovator brand</i>			
Manufacturer's selling price		888	
Wholesaler mark-up	8%	960	8.1%
Retail mark-up	11%	1065	19.93%
<i>Lowest priced generic</i>			
Manufacturer's selling price		232	
Wholesaler mark-up	8%	250	7.9%
Retail mark-up	12%	280	20.85%

International price comparisons 7.10

Patient prices, private retail pharmacies

The prices of medicines in the private sector in Syria were compared with prices found on the HAI website for surveys also undertaken using the WHO/HAI methodology. The prices have all been adjusted to MSH 2002 as the reference price source

Figure 1 shows the patient price for aciclovir 200mg tablets, when purchased from private retail pharmacies, in eight countries. The median price for both the innovator brand and generic was less in Syria compared to the other three Middle East countries, and Malaysia and Morocco, but more expensive than Rajasthan India and Pakistan (generic). The Syrian prices were high – about 12 times the reference price for the innovator brand and over 3 times for the lowest priced generic

Figure 1 Median Price ratios, aciclovir 200mg tab, private retail pharmacies

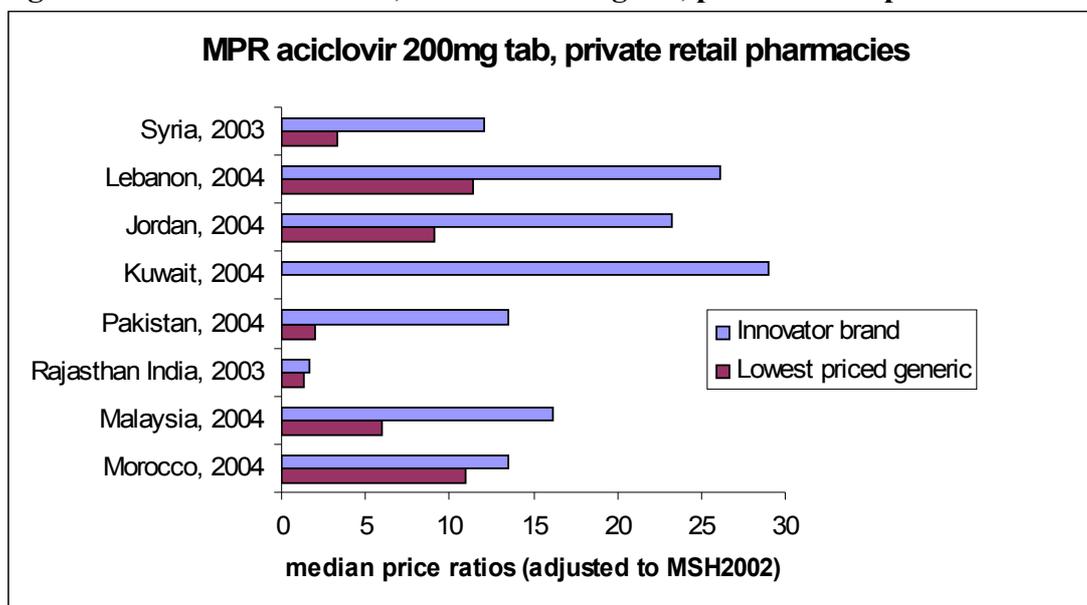
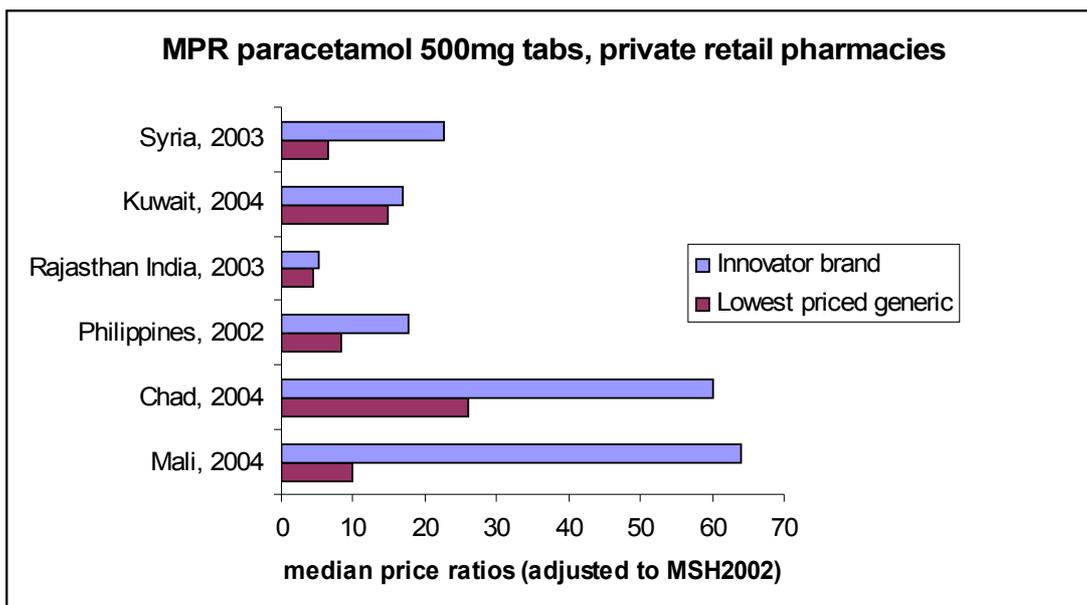


Figure 2 compares the patient price for paracetamol tablets purchased in the private sector. The price of the innovator was more expensive in Syria compared to all countries except the two African nations, Mali and Chad. However, all were extremely expensive compared to the reference price including Syria (MPR 22.65). Only Rajasthan in India had a cheaper generic price compared to Syria but both were high priced compared to the reference price.

Figure 2 Median Price ratios, paracetamol 500mg tab, private retail pharmacies



Public sector procurement prices

Figure 3 compares Syrian public sector procurement prices for aciclovir tablets with those of some other countries. The innovator price in Syria (MPR 10.23) was far greater than Jordan (MPR 0.31) and Morocco (MPR 8.8), and over 10 times the MSH reference price. The price of the generic version in Syria was greater than the other countries except Lebanon and Morocco, and over twice the reference price.

Figure 3 Median price ratios, aciclovir tabs, public sector procurement prices

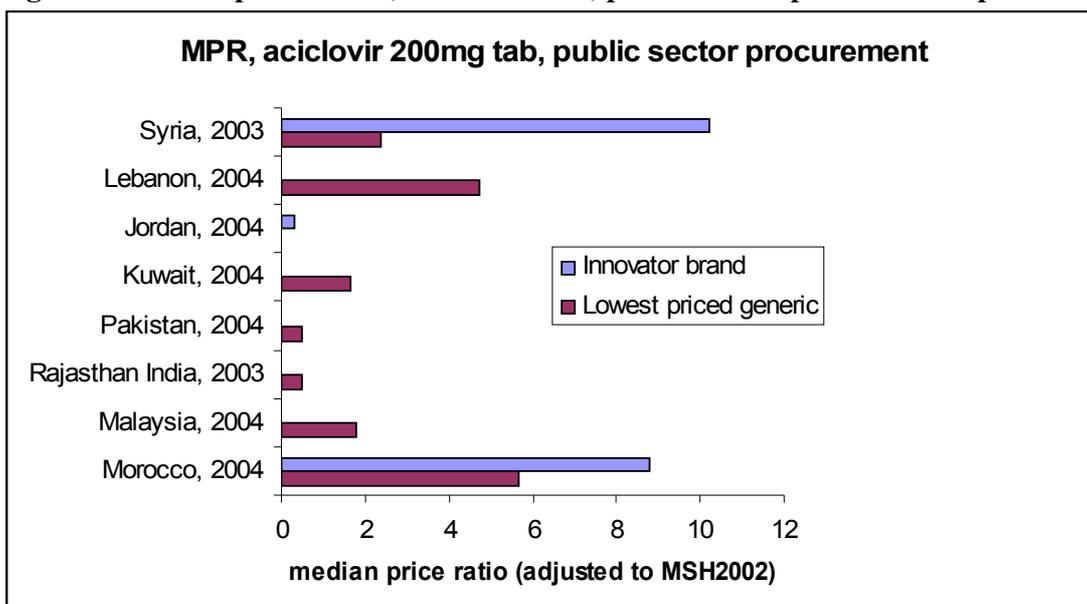
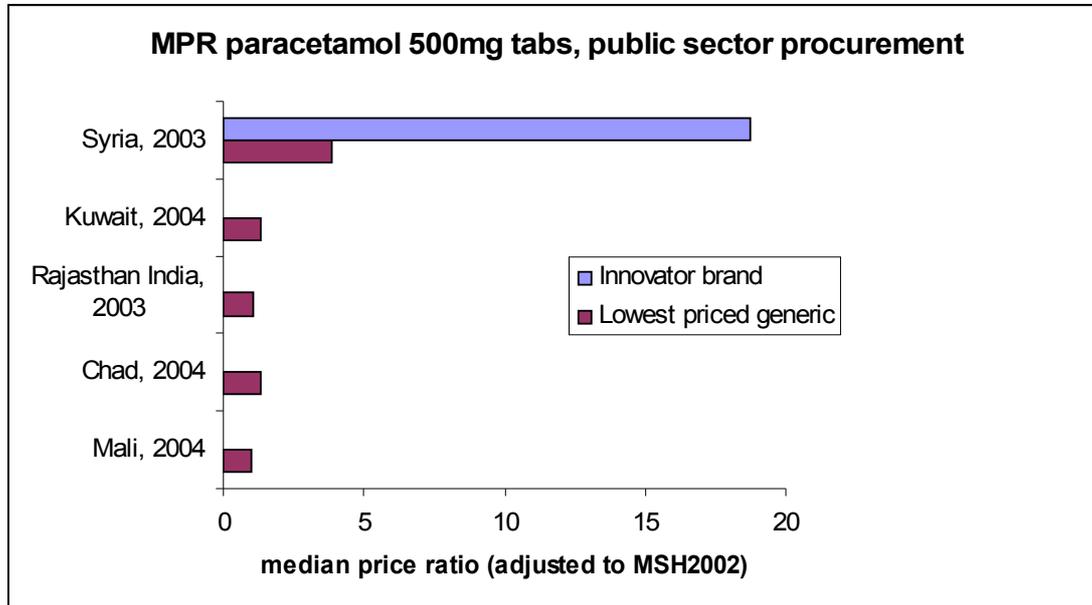


Figure 4 compares public sector procurement prices for paracetamol 500mg tabs across 5 countries. Syria was the only country purchasing the innovator brand; at a price of over 18 times the reference price. The generic version was also very .expensive at nearly 4 times the reference price; far higher than the other countries

Figure 4 Median price ratios, paracetamol tabs, public sector procurement price



Discussion .8

Availability in the private sector was very good for generics (98%), and innovator brands known to be on the market (95%). Availability was also very good for generics in the public hospitals surveyed (93%). No innovator brands were found but this is not of concern when generic availability is high

The survey results show that while prices in the Syrian private sector are generally acceptable for the lowest priced generics (median MPR 2.51), the price of some individual medicines are high, for example, diazepam (MPR 6.36), furosemide (MPR 4.47) and diclofenac (MPR 6.32). Overall innovator brands were very expensive (median MPR 9.6) in the private sector, and were nearly three times the price of the lowest priced generics. The price of some individual innovator brands were extremely high compared to reference prices, for example, atenolol (MPR 14.38) and diclofenac (MPR 23.71). Both forms of paracetamol, a commonly used analgesic, were expensive; innovator MPR 22.65 and lowest priced generic MPR 6.47. Prices did not vary across pharmacies and the most sold product was usually the lowest priced generic

Government procurement prices are reasonable for generics (median MPR 1.54) but some individual generics were high priced, for example, amitriptyline (MPR 2.77), atenolol (MPR 3.55), and diclofenac (MPR 4.52). As with the private sector, paracetamol was high priced; innovator MPR 18.77, lowest priced generic MPR 3.88. Syria was paying a higher procurement price for paracetamol than the four other countries where data was available (including Kuwait). For a number of medicines, high priced innovator brands are being purchased as well as lower priced generics, for example, aciclovir (innovator 10.23, generic 2.34), atenolol (innovator 12.08, generic 3.55) and diclofenac (innovator 21.68, generic 4.52). Savings could be made if only low cost generics were purchased

Private inpatients in public hospitals are paying 23% more than the procurement price for generics. The availability of the surveyed medicines in the hospitals was very good (median 93%). Both these indicators suggest that medicines management in hospitals is being efficiently managed

As the public sector only applies to hospital inpatients (where medicines are free), patients have to purchase medicines from private retail pharmacies. The survey showed that many standard treatments are barely affordable to low-paid Syrians. Such treatments included metformin for diabetes (1.6 days wages are needed by the lowest paid unskilled government worker to purchase 30 days treatment). Other treatments are not affordable such as aciclovir for viral infections (3.7 days) and fluconazole for candidiasis (5.8 days). The situation becomes even more difficult if other members of the family become ill and need treatment with medicines

Pharmacy mark-ups are being applied regressively but the amount is not applied across the total procurement price. For example, were a pharmacist buys a medicine for 75 Syrian Pounds, the mark-up is 30% for the first 40 SP, plus 20% for the remaining 35 SP. Consideration should be given to applying mark-ups to the whole amount rather than components (so in this example the mark-up would be 20% for the total 75 SP

To improve the affordability of treatments, consideration should be given to abolishing the 8% propaganda paid to pharmaceutical companies. Rather than paying drug companies to provide propaganda, the government could consider establishing an independent drug information centre that provides unbiased information to doctors, pharmacists and other health professionals

Steps need to be taken to make medicines more affordable in the private sector. All components is the fixed pricing formula should be reviewed, and an evaluation of the impact of fixed pricing verses market competition on the affordability of medicines especially for generic products. As raw material costs fall, savings must be passed on to patients so that treatments become more affordable. Treatments would also be more affordable if the government did not fund pharmaceutical company propaganda

Conclusions and recommendations .9

:Key conclusions of the survey include

- some private sector medicine prices are acceptable; but others are high
- the prices of innovator brands are three times higher than their generic equivalents
- some treatments are not affordable to low-paid Syrians
- there is no price variation across pharmacies
- availability of generics, both in private pharmacies and public hospitals, is very good
- the price of the most sold product is usually the same price as the lowest priced generic
- the government often purchases high priced innovator brands as well as lower priced generics
- patients pay 62% more for medicines (in the private sector) compared to what the government pays
- The price of some medicines is high in Syrian compared with other countries, including those in the Middle East.

On the basis of the evidence gathered in this study, the following recommendations are made to the Government of Syria

1. Medicine prices should be regularly monitored
2. Transparency is needed so that price comparisons are possible
3. Where prices of specific medicines are very high (MPR of 10 or more), investigation should occur to identify means to reduce these specific prices.
4. Apply the pharmacy markup for the total procurement price.
5. Consider abolishing the propaganda payment to pharmaceutical companies.
6. An in-depth investigation should be undertaken on policies to lower medicines prices and make medicines more affordable, including a review of the fixed pricing formula and price regulations in other countries.

10. References

Health Action International/World Health Organization. Medicine prices – a new approach to measurement. Geneva: WHO/HAI, 2003.

Annex 1

List of core and supplementary medicines surveyed

<i>Core medicines</i>		
Aciclovir	200 mg	cap/tab
Amitriptyline	25 mg	cap/tab
Amoxicillin	250 mg	cap/tab
Atenolol	50 mg	cap/tab
Beclometasone	0.05 mg/dose	inhaler
Captopril	25 mg	cap/tab
Carbamazepine	200 mg	cap/tab
Ceftriaxone	1 g/vial	injection
Ciprofloxacin	500 mg	cap/tab
Co-trimoxazole	8+40 mg/ml	suspension
Diazepam	5 mg	cap/tab
Diclofenac	25 mg	cap/tab
Fluconazole	200 mg	cap/tab
Fluoxetine	20 mg	cap/tab
Glibenclamide	5 mg	cap/tab
Losartan	50 mg	cap/tab
Lovastatin	20 mg	cap/tab
Metformin	500 mg	cap/tab
Omeprazole	20 mg	cap/tab
Phenytoin	100 mg	cap/tab
Ranitidine	150 mg	cap/tab
Salbutamol	0.1 mg/dose	inhaler
<i>Supplementary medicines</i>		
Diltiazem	60mg	cap/tab
Furosemide	40mg	cap/tab
Loratadine	10mg	cap/tab
Metronidazole	500mg	cap/tab
Paracetamol	500mg	cap/tab