

# Medicine prices, availability, affordability and price components

*A synthesis report of medicine price surveys  
undertaken in selected countries of the  
WHO Eastern Mediterranean Region*



World Health  
Organization

Regional Office for the Eastern Mediterranean





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## Foreword

Reliable and sustainable access to essential medicines remains a challenge for about one-third of the world's population, with the poorest and most vulnerable populations at highest risk of failing to secure access. The unaffordable price of medicines is the major barrier they face in obtaining the medicines they need. Lack of transparency about the component costs contributing to the price of a medicine at the level where the patient accesses it—including the manufacturer's selling price, the taxes, distributor and retail margins—has made it difficult to address this issue. Furthermore, even where governments have intervened in the form of medicine pricing regulations, the effects on access to essential medicines are not clear, especially where there may be conflicting policies to promote local pharmaceutical industry. The WHO Medicines Strategy recognized the need for greater information and openness on factors affecting access to medicines, including prices, and publications and links related to medicine prices have been collated on a dedicated page on the WHO website. In addition, medicine pricing is an integral part of the Global Strategy and Action Plan on Public Health Innovation and Intellectual Property recently adopted by the World Health Assembly.

In 2003, WHO and Health Action International, a nongovernmental organization specialized in policy advocacy, developed a standard methodology for surveying medicine prices and availability to address this situation and provide to evidence on which to base sound policy decisions. The WHO Regional Office for the Eastern Mediterranean was the early leader in using this methodology, being the first to conduct training for countries on the methodology and performing the first comprehensive surveys. More than 15 countries of the Eastern Mediterranean Region have been trained in the methodology, and 12 have conducted medicine pricing and availability surveys. The results are being made available on the Health Action International website.

Early in January 2007, the WHO Regional Office for the Eastern Mediterranean organized a follow-up workshop for countries in the Region which had or intended to conduct medicine price and availability surveys to share experiences and plan for the future. Public interest and advocacy groups, medicine regulators, World Bank representatives and other interested parties also participated. It was clear that some countries had taken action on the results of their surveys. For example, the Government of Lebanon had acted to reduce the prices of 1100 imported medicines and had introduced a new pricing structure. Jordan is also reviewing its medicine pricing regulations and policies in the light of the evidence derived from its survey and those of other countries in the Region. Ministers of health were made aware of the evidence building from this work at the meeting of the Regional Committee for the Eastern Mediterranean in October 2007 and agreed that action was needed. In this regard the Regional Office is developing a central online resource of public procurement prices from Member States and national price lists for comparison, with the aim of facilitating information sharing on medicine prices and policies within the Region to better inform pharmaceutical procurement and policy decisions. A "medicine prices policy package" is also under development to guide governments in initiating and revising their national health and medicine policies.

This report is one of two commissioned by the Regional Office to synthesize the results of existing surveys in the Region and to relate them to existing medicines policies with a view to better understanding the pricing and availability of medicines and the efficacy of policy interventions which are available to governments. This information is critical if we are to make essential medicines both accessible and affordable to those who need them.

Promoting and ensuring access to essential medicines is a part of right to health and it is a work in progress. The Regional Office will continue its efforts in this area as part of the work mandated by the WHO Constitution and requested by our Member States.



Hussein A. Gezairy MD FRCS  
WHO Regional Director for the Eastern Mediterranean



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## Acronyms

CIP	Cost, insurance, freight
CPI	Consumer price index
EU	European Union
FOB	Freight on board
GDP	Gross domestic product
HAI	Health Action International
OB	Originator brand medicine
INN	International Nonproprietary Name
IRP	International reference price
LPG	Lowest priced generic equivalent medicine
MPR	Median price ratio
MSH	Management Sciences for Health
NGO	Nongovernmental organization
PPP	Purchasing power parity
UNICEF	United Nations Children's Fund
VAT	Value added tax
WHO	World Health Organization
WHO-EMRO	World Health Organization Regional Office for the Eastern Mediterranean
WTO	World Trade Organization





# Executive summary

The data from medicine prices surveys conducted in 9 countries (Jordan, Kuwait, Lebanon, Morocco, Pakistan, Sudan [Khartoum State], Syrian Arab Republic, Tunisia and Yemen) of the Eastern Mediterranean Region and utilizing the WHO/HAI methodology are summarized in this report. These countries differ in demographic and economic indicators as well as health system structures and pharmaceutical policies. Within this diversity, the results are compared to investigate common elements and lessons for pharmaceutical policy review and implementation which can be learnt from sharing and comparing experiences. The key findings were as follows.

## Availability

Availability of medicines is lower in the public sector than in the private sector. It is unclear whether charging patients for medicines in the public sector leads to increased availability. Medicines available in the public sector are usually generics but, for those which are not available, the private sector is more likely to stock originator brands. The balance between availability of originator brand and generic medicines in the private sector varies between countries, probably reflecting differences in local prescribing habits, pharmaceutical policy and regulations and health system structure.

## Public sector procurement prices

Most countries procure a mix of originator and generic medicines for their public health sector. If the same medicine is obtained as originator and generic, the price is on average 2.9 times higher for the former. Some countries procure older, off-patent, wide therapeutic index ('easy to use') medicines such as diazepam and amitriptyline as originator brands when much cheaper generics versions are available. Among the countries in this report, Morocco and Syrian Arab Republic generally procured generic medicines at a higher price than other nations.

## Public health sector patient medicine prices

Not all countries charge patients for medicines in the public health sector. Where they do, the prices of generic medicines at public health facilities are generally above an acceptable level. Prices were high in Sudan in spite of very low procurement prices, suggesting that costs and profits in the public distribution system add substantially to the price of generic medicines at public health facilities. Prices were relatively low in Yemen but availability was poor, meaning patients would need to utilize private retail pharmacies to access their medicines.

## Private retail sector patient medicine prices

Medicine prices in private retail pharmacies are generally very high for both generic and originator medicines. Some individual medicines such as ciprofloxacin and diclofenac appear to have excessive private retail prices in the Region. Generic medicines are on average half the price of their originator except in Kuwait, Morocco, Pakistan and Tunisia, where pharmaceutical policies and pricing regulations result in only a small observed difference in their prices.

## Affordability of standard treatments

In those public health systems where patients pay for medicines (Jordan, Sudan, Yemen), most standard treatments with core medicines were affordable from public health facilities – but median availability was only 28%, 35% and 5% respectively, so patients would need to use the private sector to access their medicines. There was wide variation in the affordability of medicines in private retail pharmacies to low-wage public workers. Purchasing the treatment as a generic medicine would improve affordability through eliminating the brand premium, but generic medicines were observed to be not always available in practice.

## Medicine price components

Medicines are exempt from import duties in some countries, whereas others apply fixed or percentage-based fees of up to 11.5% of the landed price on medicines for sale in the private sector. Lebanon and Sudan include levies for pharmaceutical and physician associations. Levies for the Standards and Metrology Organization and Ministry of Defence were also applied in Sudan, while the Syrian Arab Republic had an allowance of 8% for pharmaceutical marketing. Mark-ups for importing agents and/or wholesalers were fixed percentages and were markedly higher in Kuwait than other countries. Retailer mark-ups were also percentage-based without payment of a fixed professional fee. The percentages were fixed, thereby promoting sale of more expensive medicines, except in Syrian Arab Republic and Tunisia where the percentage was reduced on higher cost items according to a sliding scale.

The key recommendation of this report is that national policy-makers and medicines regulators review their pharmaceutical pricing regulations within the framework of formal national medicines policies, establishing these where they do not exist, so as to optimize availability of and access to essential medicines, especially to the disadvantaged members of society. As a first step, sharing pricing information to increase transparency, implementing or reviewing medicine pricing policies and removing taxes and import duties from essential medicines should be implemented.





# 1. Introduction

About one-third of the global population lacks reliable access to needed medicines, with this proportion as high as 50% in some of the poorest countries of Africa and Asia [1]. One of the factors contributing to this lack of access is the price of medicines in countries. Whereas high-income industrialized countries often have health insurance systems, so that out-of-pocket payments for medicines are only required by 20% of the population, a lack of social insurance systems in developing nations contributes to the fact that up to 90% of people buy medicines through out-of-pocket payment [2].

Industrialized nations often have a medicine regulatory structure and price regulations, in contrast to many developing nations, who are also often under pressure to deregulate as part of market reform and structural adjustment programmes [3]. Due to the prevailing conditions in developing countries, often there are also high duties, taxes and mark-ups which contribute to the retail price the paid by consumers [4,5,6]. Intellectual property laws, domestic pharmaceutical production capacity and the degree of competition in the marketplace also affect medicine prices.

In spite of the role that medicine prices play in the access of poorer patients to medicines, relatively little is known about how prices are set by pharmaceutical companies, what contribution other charges make to the final price and how local medicines policies influence local medicine prices and affordability.

Sound information about medicine prices is needed upon which to base action. Previous studies have utilized a variety of methods, sometimes inadequate, which has made interpretation and comparison of results difficult [7]. To address this problem, Health Action International (HAI) and the World Health Organization (WHO) together with an expert group developed a standard methodology for surveying medicine prices in different countries which would allow for international comparison of medicine prices as well as contribute to the knowledge base at a local level. A summary of the methodology is provided in section 2. Following development and field-testing of the methodology, it was made available and promoted for government or interested groups to implement at national or local level.

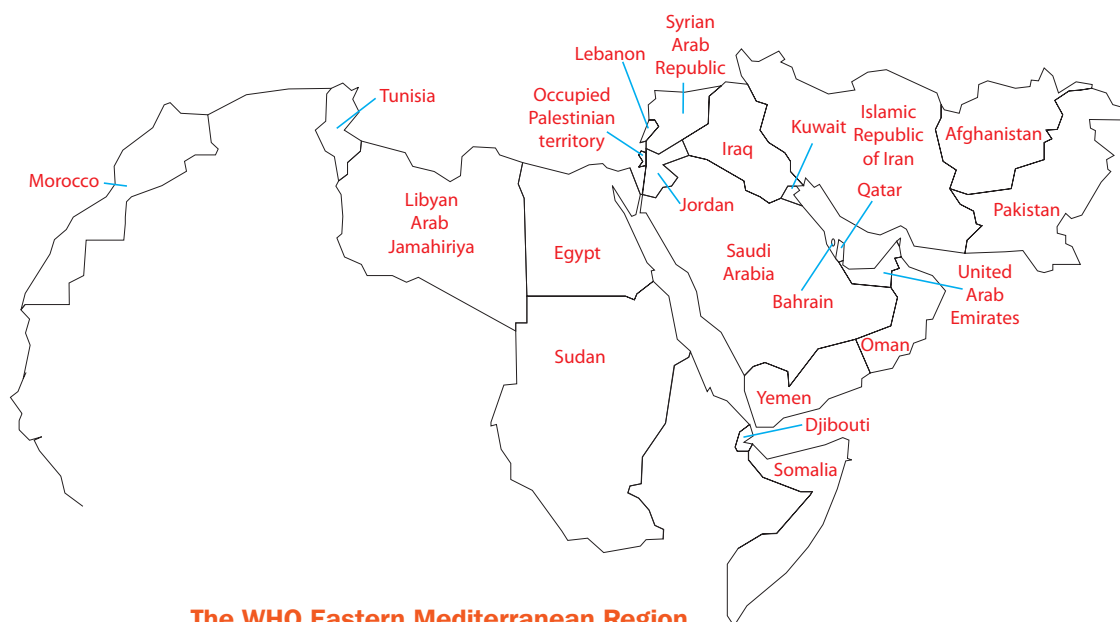
In October 2003, the first WHO/HAI regional pre-survey workshop on medicine price measurement using the WHO/HAI methodology was held by the WHO Eastern Mediterranean Regional Office (WHO-EMRO) in Cairo [8] and was attended by

selected participants from 10 countries in the Region. The purpose was to encourage the implementation of medicine price surveys using the WHO/HAI methodology and to train the participants in the methodology. Morocco and Tunisia also participated in a training workshop for francophone African countries held in Tunis in February 2004 and in a follow-up workshop held in Rabat, Morocco in July 2004 which Lebanon also attended. Since these workshops, in the WHO Eastern Mediterranean Region 13 medicine price surveys have been conducted utilizing the WHO/HAI methodology or are in the process of being completed in Jordan, Kuwait, Lebanon, Morocco, Pakistan, Sudan (4 surveys in separate states), Syrian Arab Republic, Tunisia, Yemen and the United Arab Emirates. In addition, two desk surveys based on the general methodology but using official medicine price lists have been performed in Egypt and in Abu Dhabi in the United Arab Emirates. Although the data and reports of the surveys are available on the HAI website ([www.haiweb.org](http://www.haiweb.org)) as part of the WHO/HAI Project on Medicine Prices and Availability, they have not as yet been systematically compared to determine what can be learned about medicine prices in the Eastern Mediterranean Region.

The purpose of this synthesis report is to bring together and describe the data from the various surveys conducted in the Region. As well as providing background and greater information about the pricing of medicines in the various countries, examination of the results should enable identification of issues which need to be addressed through further research, policy changes or other interventions at national and international level. A companion report is being prepared specifically examining national pharmaceutical policies that impinge on medicine prices. This report will not attempt to duplicate that effort, but some reference will be made to pharmaceutical policies where these were identified by local survey managers.

There are 22 countries in the Eastern Mediterranean Region, 11 of which have conducted or are conducting a medicines price survey using or based on the WHO/HAI methodology. Data from 9 of these studies (Jordan, Kuwait, Lebanon, Morocco, Pakistan, Sudan, Syrian Arab Republic, Tunisia and Yemen) are presented in this report. Key country demographic, economic and health indicators for these countries are shown in Table 1. An overview of their medicine price surveys is shown in Table 2 and information on their pharmaceutical sector taken from forms completed by the survey managers is presented in Annex 1. Two surveys conducted in Egypt and in the United Arab Emirates (Abu Dhabi) did not strictly follow the standardized methodology. Their data are included in Annex 2 for information purposes.




**Table 1. Country descriptive data and general health and health sector financing indicators**

Indicator	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Area (000 km <sup>2</sup> )	88.8	17.8	10.5	710.9	796.1	2506.0	185.2	154.6	555
Population (millions)	5.6	3.1	4.1	30.5	156.3	36.8	18.7	10.1	20.9
Urbanization (%)	83	100	85	56	34	36	54	65	26
Population growth rate (%)	2.3	8.4	1.5	1.4	1.9	2.5	2.5	1.1	3.0
Life expectancy (yrs)	71.5	77.5	71.3	70.8	64.0	58.0	72.0	73.5	62.9
GDP per capita (US\$)	2 050	22 739	5 756	1 613	614	605	1 241	2 828	674
Infant mortality rate (deaths per 1000 live births)	22.0	8.2	18.6	40.0	77.0	62.0	18.0	20.3	75.0
Maternal mortality ratio (deaths per 100 000 live births)	41	4	86	227	350	509	58	48	366
No. of doctors (per 10 000 population)	24.5	18.0	28.4	5.6	8.5	2.9	14.8	9.5	3.6
No. of nurses (per 10 000 population)	33.0	37.0	13.2	9.0	3.1	9.1	18.8	31.4	5.7

Indicator	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
No. of pharmacists (per 10 000 population)	12.0	2.0	13.8	2.3	0.9	0.1	6.5	2.0	1.0
MOH budget as % of government budget (%)	6.1	6.3	3.6	5.4	3.5 <sup>a</sup>	2.0	4.5	7.7	4.0
Total health expenditure per capita (US\$)	200	633	670	82	14	25	58	175	34
Total health expenditure as % of GDP (%)	9.8	2.8	11.6	5.1	2.2	4.1	4.7	6.2	5.0
General government expenditure on health (per capita) (US\$)	97	491	184	28	3	9	27	91	13
General government expenditure on health as % of total health expenditure (%)	48.4	77.6	27.4	34.3	19.6	35.4	47.4	52.1	38.3
Out-of-pocket expenditure as % of total health expenditure (%)	38.1	20.3	59.7	49.9	78.8	63.4	52.6	39.7	59.0

Source: *The Work of WHO in the Eastern Mediterranean Region: annual report of the Regional Director 2006*. Cairo, WHO Regional Office for the Eastern Mediterranean, 2006.

<sup>a</sup> 2004 data

**Table 2. Summaries of key characteristics of the medicine price surveys**

Country	Date of survey	No. of medicines surveyed (core medicines)	No. of procurement orders	No. of public health facilities	No. of private retail pharmacies	MSH reference prices used
Jordan	May 2004	29 (23)	1	18	20	2003
Kuwait	June 2004	29 <sup>a</sup> (21)	1	25	25	2002
Lebanon	February 2004	32 (26)	2	20	40	2002
Morocco	April 2004	34 (25)	2	20	20	2003
Pakistan	July 2004	29 (29)	2 <sup>b</sup>	30	48	2003
Sudan	June 2005	41 (22)	1	20	20	2004

Country	Date of survey	No. of medicines surveyed (core medicines)	No. of procurement orders	No. of public health facilities	No. of private retail pharmacies	MSH reference prices used
Syrian Arab Republic	December 2003	27 (22)	6	–	57	2002
Tunisia	March 2004	30 (20) <sup>c</sup>	1	21	41	2003
Yemen	July 2006	35 (27)	1	20	20	2005

MSH – Management Sciences for Health

<sup>a</sup> Six additional medicines were surveyed using other reference prices but these data are not included in this report.

<sup>b</sup> From tender documents in 2 of the 4 surveyed regions.

<sup>c</sup> Three supplementary medicines surveyed had no reference prices; only their availability is reported.

**Annex 1.** National pharmaceutical sector data submitted by survey managers

**Annex 2.** Egypt and the United Arab Emirates case studies

**Annex 3.** Secondary analysis calculations

**Annex 4.** Detailed availability data

**Annex 5.** Detailed median price ratio data

**Annex 6.** Affordability of various standard therapies with core medicines

**Annex 7.** Price component examples from the surveys (where available)



## 2. The WHO/HAI medicine price survey methodology

### 2.1 Overview

The standard WHO/HAI methodology for conducting a medicine price survey has been published as a manual [9] and should be consulted for full details of the approach. The key aspects of the methodology are as follows.

- Standard list of medicines for comparison. A list of 30 ‘core medicines’ of defined active ingredient, strength, dosage form and pack size is recommended to be surveyed in each country. In addition, each survey should incorporate additional ‘supplementary medicines’ that are judged particularly relevant to the country based on the disease burden and frequency of use. For each of the core and supplementary medicines, the original innovator brand product (referred to in this report as the originator brand, or OB) and the lowest priced generic equivalent (LPG) are targeted (branded generics are considered as generics). Public procurement prices are usually obtained centrally and the price and availability of the medicines to patients are surveyed in public health facilities and private retail pharmacies. Other sectors may also be included, e.g. religious or nongovernmental organizations.
- Systematic sampling process. The sampling procedure involves selecting at least four geographic areas in the country (or administrative areas in the region if subnational), one of which usually incorporates the major urban centre. In each area, the main public hospital is taken together with a random selection of four other lower level public health facilities to investigate the public sector. For the private retail pharmacy sector, the closest retail pharmacy to each of the selected public health facilities is taken. This provides a minimum sample of 20 public health centres and 20 private retail pharmacies that are surveyed by site visits to determine the availability and price of each of the survey medicines.
- Use of international reference prices. The local prices are compared to an international reference price (IRP), taken from the International drug price indicator guide produced by Management Sciences for Health [10]. These are the medians of recent bulk procurement or tender prices offered by profit and not-for-profit suppliers to developing countries for multisource products. Dividing the local unit price by the IRP provides a price ratio giving an indication of how

many times more expensive (or cheaper) the medicine is than the reference price. The median price ratio (MPR) is used as the summary measure. This facilitates national and international comparison of medicine prices.

- Affordability comparisons. The affordability of certain standard treatments to low wage earners are estimated by comparing their local costs to the daily wage of the lowest paid unskilled government worker. These numbers provide a measure of affordability since many patients will be earning less than this amount.
- Identification of the components making up the final price. The manufacturer’s selling price, taxes, mark-ups and other components contributing to the final patient prices of selected medicines are determined for a few medicines as examples.

The data collected in the surveys are collated in an electronic spreadsheet (Microsoft Excel) which automatically performs the calculation of the MPRs, availability and affordability. The workbook encompasses a dual entry of the data and a data checking function. Data cleaning, analysis and interpretation were supported by consultants to the WHO/HAI project. With the permission of survey managers, data are made available on the HAI website (<http://www.haiweb.org/medicineprices>) and can be searched using an extractor tool available from HAI on request.

### 2.2 Methodology of the secondary analysis

#### *Data selection*

Data from WHO/HAI medicine price surveys were extracted from the HAI database using a special extractor tool. Median price ratios were only calculated for public and private health facilities where a minimum of 4 facilities had the medicine available. Procurement data were based on a minimum of one order or tender. Availability was based on all facilities surveyed.

#### *Inclusion criteria*

This publication contains a summary of the results of medicine price surveys conducted in countries covered by the WHO Regional Office for the Eastern Mediterranean (WHO-EMRO). The surveys included are those which had been completed and their data verified by HAI and whose survey managers had given permission for their data to be publicly accessible by the time of data analysis (August 2007). Thus, the countries included are Jordan, Kuwait, Lebanon, Morocco, Pakistan, Sudan (Khartoum state), Syrian Arab Republic, Tunisia and Yemen.

Two other surveys conducted in Egypt and the United Arab Emirates (Abu Dhabi) were based on the WHO/HAI methodology but were 'desk surveys' using official price lists without site visits to confirm actual prices and availability. Data from these surveys are presented in Annex 2 for information, although the limitations of their methodology must be borne in mind.

*Note:* To assist readability, all surveys are referred to by the name of the country in which the survey was conducted. It should be noted that the Sudan survey was only conducted in Khartoum state (separate surveys are being undertaken in 3 other states).

### *Brand premiums*

The ratio of the OB price and the LPG price (the brand premium) was calculated for medicine pairs, i.e. where a medicine price was available for both OB and LPG. The median brand premium was determined for procurement and private sectors for each country and a summary median determined. The number of medicine pairs per country were (public procurement, private sector) Jordan (0, 24), Kuwait (0, 11), Lebanon (0, 22), Morocco (7, 18), Pakistan (2, 20), Sudan (0, 16), Syrian Arab Republic (11, 10), Tunisia (5, 11), Yemen (0, 24). Thus the procurement median brand premium was calculated over 25 medicine pairs (from 4 countries) and the private sector median brand premium calculated over 156 medicine pairs (9 countries).

### *Medicine selection*

Both core and supplementary medicines were used in the secondary analysis, thus maximizing the robustness of summary statistics. The methodology allows for core medicines not to be surveyed in cases where medicines are not available in the country or any of the facilities to be surveyed, e.g. many antimalarial and antiretroviral medicines would not be stocked by public health facilities in the Region and so were removed from survey lists. Not all countries surveyed all core medicines, with artesunate, fluconazole, indinavir, lovastatin, nevirapine, sulfadoxine-pyrimethamine and zidovudine included in fewer than half of the studies (Table 3). Supplementary medicines included in the surveys are listed in Table 4. There was great variety in the supplementary medicines chosen for the surveys, with very little overlap of medicines between surveys. The median number of supplementary medicines was 7 (range 0–19). Both the originator brand and lowest priced generic equivalent of each medicine were used. The originator brands of the core medicines are defined by the WHO/HAI methodology (although local marketing may result in a different brand name in some countries); the LPG is the lowest priced generic equivalent of each medicine found at each health facility during the site visits of the surveys. In the case of Morocco, data for originator brand of hydrochlorothiazide were changed to lowest priced generic since the study had used Esidrex as the originator brand as compared to Dichlotride as in all the other surveys. Brand names of core medicine OBs are listed in Table 3.

**Table 3. Core survey medicines, indicating those countries which excluded certain core medicines from their surveys**

No.	Medicine name, strength and form	Originator brand <sup>a</sup>	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
1	Aciclovir cap/tab 200 mg	Zovirax	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Amitriptyline cap/tab 25 mg	Tryptizol	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Amoxicillin cap/tab 250 mg	Amoxil	✓	✓	✓	✓	✓	✓	✓	×	✓
4	Artenusate cap/tab 100 mg	Arsumax	×	×	×	×	×	×	×	×	×
5	Atenolol cap/tab 50 mg	Tenormin	✓	✓	✓	×	✓	✓	✓	✓	✓
6	Beclometasone inhaler 0.05 mg/dose	Becotide	✓	✓	✓	✓	✓	×	✓	✓	✓
7	Captopril cap/tab 25 mg	Capoten	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	Carbamazepine cap/tab 200 mg	Tegretol	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	Ceftriaxone injection 1 g/vial	Rocephin	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Ciprofloxacin cap/tab 500 mg	Ciproxin	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	Co-trimoxazole susp. 8+40 mg/ml	Bactrim	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	Diazepam cap/tab 5 mg	Valium	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Diclofenac cap/tab 25 mg	Voltarol	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	Fluconazole cap/tab 200 mg	Diflucan	×	×	×	×	✓	×	✓	✓	✓

## Medicine prices, availability, affordability and price components

No.	Medicine name, strength and form	Originator brand <sup>a</sup>	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
15	Fluoxetine cap/tab 20 mg	Prozac	√	√	√	√	√	√	√	√	√
16	Fluphenazine injection 25 mg/ml	Modecate	√	×	√	√	√	×	×	×	√
17	Glibenclamide cap/tab 5 mg	Daonil	√	√	√	√	√	√	√	√	√
18	Hydrochlorothiazide cap/tab 25 mg	Dichlotride	√	√	√	√	√	√	×	×	√
19	Indinavir cap/tab 400 mg	Crixivan	×	×	√	√	√	×	×	×	×
20	Losartan cap/tab 50 mg	Cozaar	√	×	√	√	√	√	√	√	√
21	Lovastatin cap/tab 20 mg	Mevacor	×	×	×	×	√	×	√	×	√
22	Metformin cap/tab 500 mg	Glucophage	√	√	√	√	√	√	√	×	√
23	Nevirapine cap/tab 200 mg	Viramune	×	×	√	√	√	×	×	√	√
24	Nifedipine Retard tab 20 mg	Adalat Retard	√	√	√	√	√	√	√	√	√
25	Omeprazole cap/tab 20 mg	Losec	√	√	√	√	√	√	√	√	√
26	Phenytoin cap/tab 100 mg	Epanutin	√	√	√	√	√	√	√	√	√
27	Ranitidine cap/tab 150 mg	Zantac	√	√	√	√	√	√	√	√	√
28	Salbutamol inhaler 0.1 mg/dose	Ventoline	√	√	√	√	√	√	√	√	√

No.	Medicine name, strength and form	Originator brand <sup>a</sup>	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
29	Sulfadoxine-pyrimethamine cap/tab 500+25 mg	Fansidar	×	×	×	×	✓	✓	×	×	✓
30	Zidovudine cap/tab 100 mg	Retrovir	×	×	✓	✓	✓	×	×	×	×

✓ - was included in the survey; × - was excluded from the survey

<sup>a</sup> Originator brand names given as per WHO/HAI manual – local names could vary in some countries.

**Table 4. Supplementary medicines included in the surveys**

Country	Supplementary medicine (name, strength, form) <sup>a</sup>			
Jordan (n=6)	<b>Diltiazem 60mg tab.</b> Furosemide 40mg tab.	Enalapril 20mg tab. <b>Methyldopa 250mg tab.</b>	<b>Fluconazole 150mg cap</b> Simvastatin 20 mg tab.	
Kuwait <sup>b</sup> (n=8)	Acetylsalicylic acid 300mg tab. Human insulin neutral 100U inj. <b>Loratadine 10 mg tab.</b>	Cephalexin 250 mg cap. <b>Ibuprofen 200 mg tab.</b> <b>Paracetamol 500mg tab.</b>	Chlorpromazine 25mg tab. Lisinopril 10 mg tab.	
Lebanon (n=6)	Amiodarone 200mg tab. Ibuprofen 400mg tab.	<b>Amoxicillin 500mg cap./tab.</b> Isosorbide dinitrate 10mg tab.	Cephalexin 500mg tab./cap. Metronidazole 250mg tab.	
Morocco (n=9)	<b>Amoxicillin 500mg cap.</b> Benzathine penicillin inj 1.2MU/vial Pyrazinamide 500mg tab.	Amoxicillin 250mg/5ml susp Chloroquine 100mg tab. Streptomycin 1g inj	Atenolol 100mg tab./cap. <b>Fluconazole 150mg cap</b> Valproic acid 200mg tab.	
Pakistan (n=0)	None	None	None	
Sudan (n=19)	Carbamazole 5mg tab. Chlorphenamine 4mg tab. <b>Fluconazole 150mg cap.</b> Hyoscine 10mg tab. Loperamide 2mg tab./cap. Metronidazole 40mg/ml susp. Salbutamol 4mg tab.	Chloramphenicol 0.5% eye drops Doxycycline 100mg cap. <b>Furosemide 40mg tab.</b> <b>Ibuprofen 200mg tab.</b> <b>Mebendazole 100mg tab.</b> Nystatin 100 000U/ml oral susp.	Chloroquine 40mg/ml inj. Erythromycin 250mg tab. Gentamicin 40mg/ml inj. Indomethacin 25mg cap. <b>Methyldopa 250mg tab.</b> Promethazine 25mg tab.	
Syria (n=5)	<b>Diltiazem 60mg tab</b> Metronidazole 500mg tab	<b>Furosemide 40mg tab</b> <b>Paracetamol 500mg tab</b>	<b>Loratadine 10mg tab</b>	
Tunisia (n=10)	Amoxicillin 500mg tab/cap. Chlorothiazide 500mg cap/tab. <sup>c</sup> <b>Paracetamol 50mg cap/tab.</b> Theophylline retard 300mg cap/tab. <sup>c</sup>	Benzathine penicillin 1.2MU inj. Dexametasone 4mg inj. Pravastatin 20mg cap/tab. <sup>c</sup>	Chloroquine 100mg cap/tab. Metformin 850mg cap/tab. Simvastatin 20mg cap/tab.	
Yemen (n=8)	Co-amoxiclav 500+125mg tab Levothyroxine 0.1mg tab <b>Metronidazole 250mg tab</b>	Chloroquine phosphate 250mg tab <b>Lisinopril 10mg tab</b> Risperidone 2mg tab	Clarithromycin 250mg tab <b>Mebendazole 100mg tab</b>	

<sup>a</sup> Medicines included in at least 2 surveys are highlighted in bold.

<sup>b</sup> Kuwait also included 6 medicines for which there was no MSH reference price (Australian Pharmaceutical Benefits Scheme prices were used for these medicines): Carvedilol 6.25mg tab., Fluconazole 50 mg cap., Gemfibrozil 600 mg tab., Gliclazide 80 mg tab., Indapamide 2.5 mg tab., Simvastatin 10 mg tab.; the availability data for Kuwait in this report do not include these medicines.

<sup>c</sup> MSH reference prices were not available for these medicines in the Tunisian survey. Only their availability data are included.



In all countries except Jordan, Sudan and Yemen, patients in the public sector receive their medicines free. Therefore, only in these countries are public sector medicine MPRs calculated. Only Sudan and Tunisia examined medicine prices in sectors other than the public and private health sectors, and the Syrian Arab Republic measured prices in private wards of public hospitals. Due to the limited data, this has not been included in this analysis.

It should be noted that the original WHO/HAI survey methodology recommended surveying the prices of the originator brand, most sold generic equivalent (as determined at national level) and lowest priced generic equivalent (as found at each facility on the day of data collection) of each medicine [9]. The need to survey the most sold generic form was removed in a later modification of the methodology (little difference existed between median price ratios for most sold and lowest priced generics). Since not all surveys included data collection of the most sold generic equivalent, analysis was limited to originator brands and lowest priced generic equivalents.

### Affordability

As an indication of affordability, the number of days' wages it would take for the lowest paid unskilled government worker to purchase a selection of standard therapies was determined according to the WHO/HAI methodology. The standard treatments are shown in Table 5 and encompass two acute and six chronic disease scenarios. The standard treatments should not be taken as optimal therapy for all patients but as a guide to facilitate discussion. It must be noted that these costs relate only to the medicines part of the total costs of the treatment. The price of the consultation, diagnostic tests and other treatments can increase the cost for the patient considerably. In addition, it should be borne in mind that many people will be earning less than the salary used in the calculation. For the purposes of this report, medication treatments costing a day's wage or less were considered 'affordable'.

A more extensive report on affordability of medicines for chronic diseases based on data from international medicine price surveys using the WHO/HAI methodology has been published [11].

### Standardization and economic adjustments

Depending on when they are conducted, medicine price surveys may utilize MSH international reference prices (IRPs) from different years. Furthermore, while the methodology recommends the use of the MSH IRPs from the year prior to data collection, in the cases of Lebanon and Kuwait (both conducted in 2004), the MSH prices were from the 2002 MSH price list, 2 years prior to the survey. In addition, for international comparisons, adjustments need to be made to account for exchange rate fluctuations, national inflation rates and variations in purchasing power parities which could influence the interpretation of medicine prices across borders.

**Table 5. Standard treatments upon which affordability calculations are based for this report**

Condition	Standard therapy
<b>Acute</b>	
Upper respiratory infection (adult)	Amoxicillin 250mg 1 tablet/capsule 3 times a day for 7 days
Upper respiratory infection (child)	Cotrimoxazole suspension 5ml 2 times a day for 7 days
<b>Chronic</b>	
Arthritis	Diclofenac 25mg 1 tablet twice a day for 30 days
Asthma	Salbutamol 100mcg/dose 200dose inhaler (1 per month) Beclometasone 50mcg/dose 200 dose inhaler (1 per month)
Depression	Fluoxetine 20mg 2 capsules once a day for 30 days
Diabetes	Metformin 500mg 1 tablet 3 times daily for 30 days
Epilepsy	Carbamazepine 200mg 1 tablet 2 times daily for 30 days
Hypertension	Nifedipine Retard 20mg 1 tablet daily for 30 days
Peptic ulcer	Omeprazole 20mg 1 capsule daily for 30 days

To account for the variations in MSH IRPs, the surveys were standardized to year 2004, using MSH 2003 IRPs. For those countries which did not use MSH 2003 IRPs, some variation is introduced due to fluctuations in MSH prices. This is relatively small for most older multisource medicines, e.g. glibenclamide and salbutamol inhaler but can be marked for others, especially those which have few suppliers or come off patent, e.g. ranitidine, sulfadoxine+pyrimethamine [11,12] was chosen as the base year since 6 surveys were conducted in this year; this should minimize variation introduced during standardization and economic adjustments. One supplementary medicine was dropped from the

analysis due to lack of a MSH 2003 reference price (clarithromycin in Yemen), but the effect on the summary MPRs for this survey is negligible.

Two types of economic adjustment were performed:

1. Data were adjusted for inflation/deflation (using the consumer price index; CPI) and corrected for the exchange rates used in the surveys to standardize local prices to constant dollars. This manipulation did not cause significant changes to original data<sup>4</sup>. MPRs derived from this method are referred to as 'CPI-adjusted' in this report.
2. Data were corrected for inflation/deflation between the survey year and the base year and also for the purchasing power parity (PPP) of the national currency (thus also addressing exchange rate issues). The effect on some data was dramatic relative to the raw values. MPRs derived from this method are referred to as 'PPP-adjusted' in this report (although they also take the CPI into account).

The details of the calculations performed to standardize the data and make the economic adjustments can be found in Annex 3.

The CPI-adjusted MPR is used as the basic unit of comparison between the countries. It is focused on in tables and discussion relating to public sector procurement based on the assumption that medicines are internationally traded goods and most public sector procurement can be made through competitive international tenders in the global marketplace and thus should be able to achieve comparable purchase prices regardless of the purchasing power of the local currency i.e. a government in a developing country should be able to obtain quality generic aspirin at a similar price to one in a more developed nation and vice versa. While this is a simplification since it ignores fragmentation of the global medicine supply market, local regulations, distribution networks and other factors, it should be borne in mind that the MSH reference prices are actual prices offered by suppliers. The PPP-adjusted MPR is highlighted in the public sector patient prices and private retail sector in this report where the purchasing power of the patient is more of an issue and the non-tradable costs of operating health facilities and private retail pharmacies (and related procurement and distribution networks) differ across countries and are likely to impact upon the final price of the medicine, e.g. rental, overheads, salaries are likely to be higher in more affluent or developed countries. Thus, the PPP-adjustment takes into account the relative buying power of the national currency. PPP corrections can be controversial as the real value placed on the basket of goods upon which they are based may vary significantly between countries and their interpretation is not always clear. Due to these issues, both CPI-adjusted and PPP-adjusted MPRs are displayed in all figures and in tables for public sector and private

retail prices and are available in the annexes to this report for all individual medicine data.

### *Data interpretation*

In general, the data are interpreted through comparative analysis between survey results. In some cases, where individual country data is atypical, attempts are made to explain it based upon information available from the survey report, national pharmaceutical sector data supplied by the survey manager or national demographic or economic indicators. A separate report is being prepared specifically examining the effect of pharmaceutical pricing policies and regulations on the prices of medicines in the Region and which will be based on wider information and official documents than were available in the surveys alone [13].

## 3. Results

### 3.1 General

To provide a basis for comparison and discussion, the following criteria for availability and price (MPR) have been taken:

- a) Ideally availability of essential medicines should be 100%. However, it is not known which of the surveyed medicines are on the individual country essential medicines list (where one exists) and this should be borne in mind in interpreting the data. Availability only refers to the particular medicines surveyed in their specific strength and dosage form on the day of the survey. Other strengths or dosage forms may be available or the health system may make use of alternative medicines.
- b) There are no definite guidelines on what represents an acceptable MPR although some suggestions have been made [11,14]. For this report, in line with current knowledge and discussion, it is taken that public sector procurement prices should have an  $MPR \leq 1$  (CPI-adjusted) since this would represent a price equivalent to those offered by existing bulk suppliers. Public sector patient prices should not be much greater than this. The level of an 'acceptable' private retail pharmacy patient price (for a generic medicine or an originator brand) is subject to active debate. Due consideration of the medicine and the country pharmaceutical market should always be taken when interpreting local MPRs.

<sup>4</sup> The Syrian Arab Republic employs a multiple exchange rate policy. The parallel market exchange rate used in the survey (SYP 51.5 = USD 1) is not the same as the official rate used in International Monetary Fund (IMF) transactions and publications (SYP 11.225 = USD 1 for 2004). To have used the IMF exchange rate would have increased Syrian MPRs by a factor of around 4.5 which is not in keeping with the small effect this adjustment had on other countries' data. Therefore, Syrian data were not adjusted to international dollars to correct for exchange rate differences. The data were corrected only for inflation. This issue does not directly effect the PPP adjustments.

### 3.2 Availability of medicines in the public and private sectors

#### Public sector availability

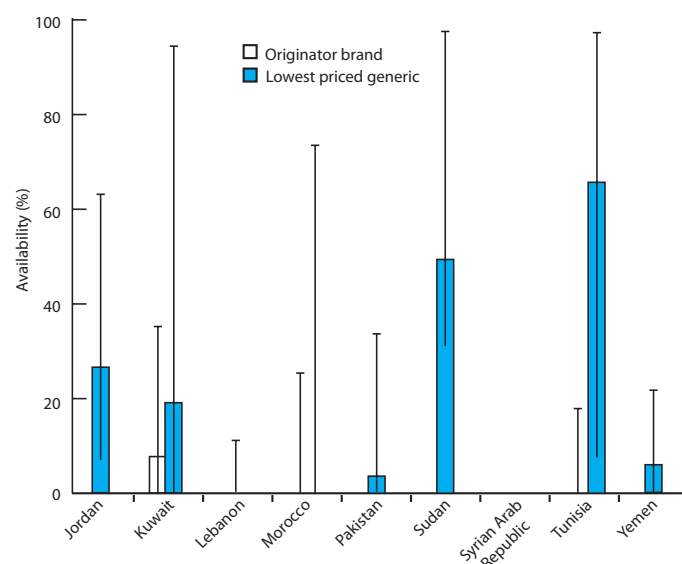
From the eight studies with data about the availability of medicines in the public sector, OB medicines were generally not available in the public health facilities and even availability of generics was poor with the highest median availability seen in Tunisia (60%) (Figure 1, Table 6). Median availability of the survey medicines was 0% in Lebanon and Morocco. It should be noted that this represents only the specific dosage form and strength of the medicines on one particular day, and other dosage forms and/or strengths or alternative medicines may have been available. For example, in Kuwait only certain designated health facilities stock antidiabetic medicines and these were under-represented in the sample. However, some key medicines which one would expect to be present were often poorly available, e.g. amitriptyline, amoxicillin, hydrochlorothiazide (Table 6) (the complete list of availability of individual medicines is presented in Annex 4). The results are therefore suggestive of a problem of low availability of medicines in public sector facilities across the Region particularly when viewed against private sector availability. Two of the countries in which patients had to pay directly for medicines in the public sector (Jordan, Sudan) showed a non-significant tendency to have higher availability than those which did not. However, their availability was still relatively low ( $\leq 50\%$ ; Figure 1). In Yemen, where patients also pay in the public sector, very poor availability was observed in the public sector, although this may be more a reflection of general underfunding of public procurement. Therefore it is not possible to conclude that the patient charges are related to the higher availability in public health facilities.

#### Private sector availability

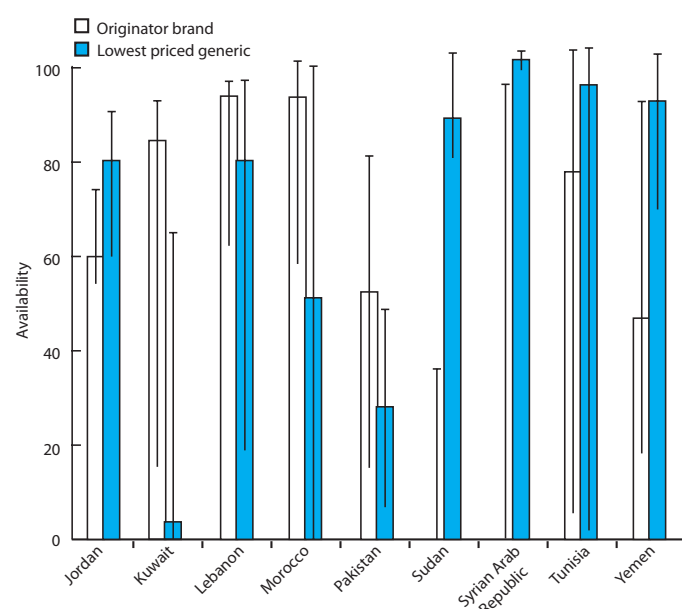
In private retail pharmacies, median availability was relatively high ( $\geq 80\%$ ) in 3 countries for OB medicines, and in 5 countries for LPGs (Figure 2). Many medicines not available in public health facilities were available in the private sector, often as the originator product (Tables 6 and 7). In the Syrian Arab Republic, LPG availability was high but OB availability was very low (median 0%). The opposite was true in Kuwait where retail pharmacies tended to keep more OB medicines than generics. Availability of OBs also exceeded that of LPGs in Lebanon, Morocco and Pakistan, with the converse in Jordan, Sudan, Tunisia and Yemen. These variations in availability are likely to reflect the pharmaceutical and health sectors in each country.

It is worth comparing private sector availability according to national income classification as given by the World Bank since one would expect countries with low economic indicators to show higher availability of generic products compared to OB medicines (indicating patients' wealth). Of the three low income countries, Sudan and Yemen show this pattern. However, Pakistan had higher

availability of OBs possibly indicating local factors such as public lack of trust in quality of generics or pharmaceutical promotion, leading to over-reliance on originator products.



**Figure 1. Median availability (and interquartile range) of medicines in public health facilities**



**Figure 2. Median availability (and interquartile range) of medicines in private sector retail pharmacies**

**Table 6. Median availability of selected medicines<sup>a</sup> in public health facilities**

Medicine name	Availability (%)								
	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Amitriptyline	11	40 <sup>OB</sup>	5	20 <sup>OB</sup>	27	30	*	91	5
Amoxicillin	78	100	0	0	67	100	*	*	20
Captopril	61	96	15	30 <sup>OB</sup>	57	30	*	95	30
Carbamazepine	67	80 <sup>OB</sup>	10	50 <sup>OB</sup>	0	30	*	100	5
Co-trimoxazole susp.	83	100	75	100	30	100	*	67	20
Diclofenac	0	88	0	0	33	40	*	10	10
Glibenclamide	78	72	10	100	40	100	*	100	5
Hydrochlorothiazide	6	16 <sup>OB</sup>	0	0	0	0	*	*	0
Ranitidine	50	96	5	0	3	35	*	0	20
Salbutamol inhaler	6	88 <sup>OB</sup>	10	95	3	35	*	91	0

<sup>a</sup> Availability of generic medicines is shown except where exceeded by originator brand availability (indicated by <sup>OB</sup>)

\* Availability of medicine in the public sector not measured in the survey

**Table 7. Median availability of selected medicines<sup>a</sup> in private retail pharmacies**

Medicine name	Availability (%)								
	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Amitriptyline	80	16 <sup>OB</sup>	98 <sup>OB</sup>	95 <sup>OB</sup>	15 <sup>OB</sup>	85	100	100 <sup>OB</sup>	70
Amoxicillin	70	36 <sup>OB</sup>	0	50	96 <sup>OB</sup>	100	95	*	75
Diclofenac	75	84 <sup>OB</sup>	100	100	81 <sup>OB</sup>	95	100	95	95
Glibenclamide	95	100 <sup>OB</sup>	100 <sup>OB</sup>	100	96 <sup>OB</sup>	100	98	98	100
Hydrochlorothiazide	40	0	85	95	0	55	*	*	0

<sup>a</sup> Availability of generic medicines is shown except where exceeded by originator brand availability (indicated by <sup>OB</sup>)

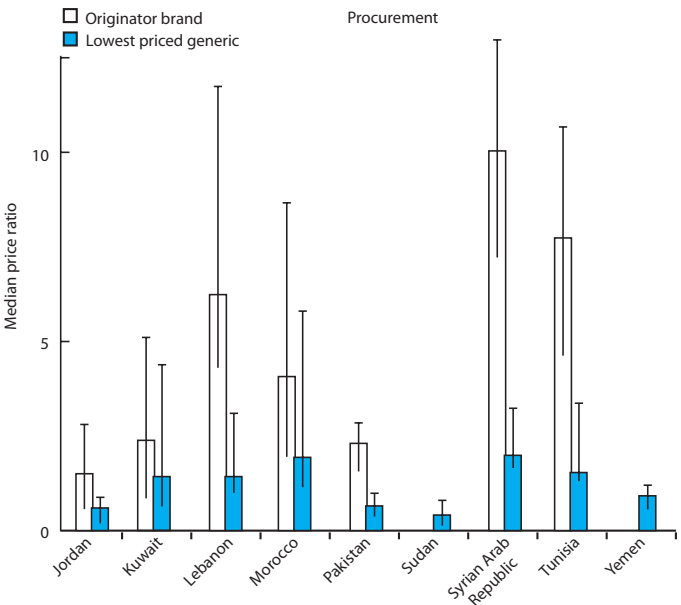
\* Availability not measured in the survey

Of the lower-middle-income countries, Jordan, Syrian Arab Republic and Tunisia showed higher generic than brand availability while Morocco showed the converse. The predominance of branded medicines in Morocco may relate to the medicine price regulatory framework which is biased towards supply of higher priced items [15] while the very low OB availability in the Syrian Arab Republic is likely to be related to the strong local industry which is protected by regulation. Lebanon, an upper-middle-income country showed generally good availability of both branded and generic medicines in retail pharmacies. In Lebanon, the private health sector has grown to address the decline in public services which resulted from the civil war [16,17]. Kuwait is a high-income country and its low availability of generic medicines probably reflects brand consciousness of patients and the universal public health insurance, causing private retail pharmacies to act as a reservoir for branded medicines not available within public facilities [18].

Key points

- Public sector availability of medicines is relatively poor (median 0% originator brands; 12.5% generics)
- Generally mostly generic medicines are available in the public sector
- Availability of medicines is lower in the public sector than in the private sector
- Medicines not available in the public sector are likely to be available in private retail pharmacies
- Relative availability of branded and generic medicines in the private sector is affected by local regulations and health systems

(a) CPI-adjusted MPR



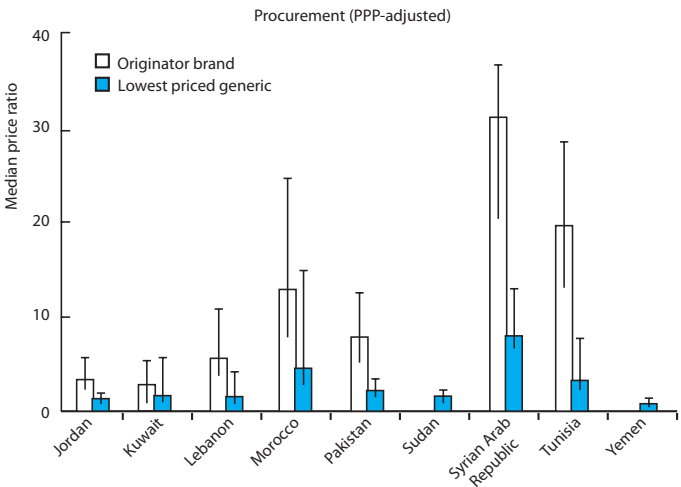
Note: Syrian Arab Republic data used the survey exchange rate (see methodology).

3.3 Public sector procurement prices

All countries except Sudan and Yemen procured both originator brand and generic medicines in the public sector (Figure 3, Table 8). As might be expected, OB public procurement MPRs were higher than those for LPGs. On average (median), procuring an OB incurred a premium of 2.9, i.e. if an OB was procured instead of a generic, a country can expect to pay around 3 times more for the medicine, although this varied from 1.7 in Morocco to 7.0 in Pakistan (many of the core medicines in the WHO/HAI survey are available internationally as generics, while some are still subject to patents). In the case of generic medicines, acceptable procurement MPRs (CPI-adjusted MPR≤1.0) were observed in Sudan (0.4), Yemen (0.6), Pakistan (0.6) and Jordan (0.6). Other countries' data varied between 1 and 2. Using the PPP-adjusted MPR, only Yemen had a value lower than 1, but the significance of this finding is uncertain and considering the CPI-adjusted MPR is of more value.

It was common across countries for phenytoin, an antiepileptic medication with a low therapeutic index (narrow range between safe and toxic blood levels making substitution between multisource products more tricky) to be procured as the OB, but strangely amitriptyline, an old off-patent medicine with a wide therapeutic index, was also commonly obtained as the OB. Other examples of older, off-patent wide therapeutic index medicines which were being procured as branded rather than generic medicines included atenolol (Syrian Arab Republic), captopril (Pakistan), co-trimoxazole suspension (Syrian Arab Republic), diazepam (Jordan, Morocco, Syrian Arab Republic), paracetamol (Syrian Arab Republic) and ranitidine (Syrian Arab Republic).

(b) PPP-adjusted MPR



Error bars represent interquartile range.

Figure 3. Median price ratios (MPRs) of public sector procurement prices



**Table 8. Examples of public procurement MPRs for medicines which were procured as either originator brand or generic products**

Medicine name	Median price ratio (CPI-adjusted MPR)*								
	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
<b>Originator brands</b>									
Amitriptyline	3.42	–	4.45	6.74	–	–	2.88	2.47	–
Carbamazepine	–	4.09	–	6.31	–	–	6.96	–	–
Diazepam	2.46	–	–	10.88	–	–	11.38	7.99	–
Nifedipine Retard	–	5.50	–	18.99	–	–	–	–	–
Phenytoin	6.54	5.26	5.81	–	–	–	–	4.46	–
Salbutamol inh.	–	1.02	–	2.32	–	–	–	0.69	–
<b>Generics</b>									
Beclometasone inhaler	1.37	0.50	0.57	0.73	–	–	0.59	0.66	0.54
Captopril	0.22	0.26	1.13	12.75	0.32	–	1.58	1.19	–
Ciprofloxacin	0.66	0.85	–	25.35	1.08	0.09	1.44	4.98	–
Co-trimoxazole susp.	2.35	0.61	1.27	1.96	0.47	0.07	1.16	1.07	–
Glibenclamide	0.69	4.96	1.45	1.12	0.78	–	1.56	0.96	0.41
Ranitidine	0.33	0.40	3.29	–	0.53	–	1.68	–	–
Salbutamol inh.	0.57	–	1.06	1.54	–	–	0.62	1.05	–

\* MPRs have been corrected for inflation, exchange rates and standardized to MSH 2003 reference prices, but have not been adjusted for purchasing power parity. MPR is shown without interquartile range.

The Syrian Arab Republic, Morocco and Jordan all procured a wide range of medicines as originator brands and could potentially reduce their public medicine spending without affecting patient care simply by greater use of generic medicines. There is substantial variation in the prices at which countries are able to procure the same medicine (Table 8). Extreme examples include generic captopril with procurement (CPI-adjusted) MPRs varying from 0.22 to 12.75, a 58-fold difference, while those of generic diazepam vary from 0.26 to 18.4 (70-fold) and a 316-fold difference was observed for generic ciprofloxacin procurement MPRs (range 0.09 to 25.4). Note that while these are the same medicine, they are not exactly

the same product but, while some variation would be expected due to production and transportation costs, this indicates that some countries are inefficient in their procurement of these medicines. Morocco and the Syrian Arab Republic in particular appear to procure generic medicines at higher prices than other countries in the Region. Examination of their procurement procedures and pharmaceutical policies is required to determine the reason for this. Other countries also need to examine their procurement performance for individual medicines compared to regional partners to determine those areas in which they need to improve, e.g. Jordan procures generic beclometasone at a MPR of 1.4 and

co-trimoxazole at a MPR of 2.4, higher than all other countries in the Region. Kuwait performed relatively well in procuring generic medicines, no doubt assisted by the Gulf Cooperation Council's bulk procurement mechanism. However, it performed poorly (as defined by observed MPR) on items such as generic glibenclamide (MPR 4.2) and diazepam (22.2) compared to other countries which raised its median MPR for procurement. Since it is not known which of the medicines were procured through the bulk procurement scheme, it is not possible to fully assess the benefits or efficiency of this mechanism. In the case of Yemen it should be noted that while procurement prices were low, relatively few medicines were procured in the public sector. This limits the benefit to patients who end up having to purchase medicines from the private sector at much higher prices.

### Key points

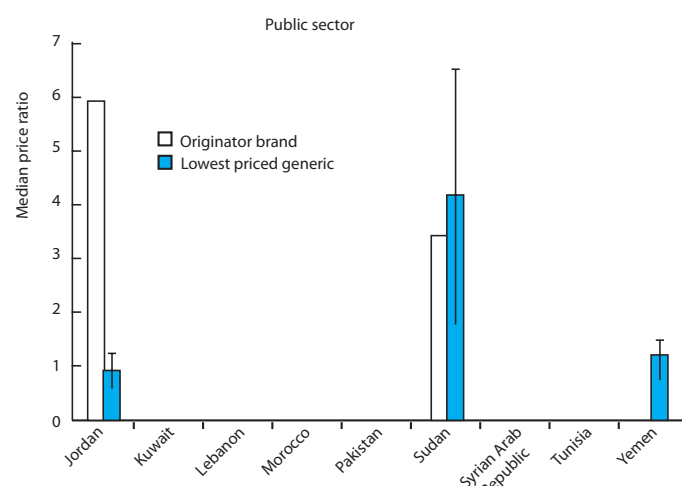
- When medicines are procured as originator brands, the price is on average 2.9 times that when they are procured as generics.
- Some national procurement agencies procure old, off-patent wide therapeutic index medicines as originator brands when much cheaper generics versions are available.
- There can be substantial variability in the regional procurement prices for the same medicine.
- Morocco and the Syrian Arab Republic generally procure generic medicines at a higher price than other countries.

## 3.4 Public sector medicine prices

Few data were available for public sector patient prices-6 of the countries provide medicines free to patients in their public health sector. In Jordan, Sudan and Yemen, where patients paid for medicines in the public sector, mostly generic medicines were available with very few originator brands present (Figure 1). The price ratios for OB medicines are therefore not representative across all survey medicines but are mentioned for completeness: Jordan (OB PPP-adjusted MPR 13.67; n=1 medicine found in at least 4 facilities), Sudan (OB PPP-adjusted MPR 11.45; n=1), Yemen (no OB procured).

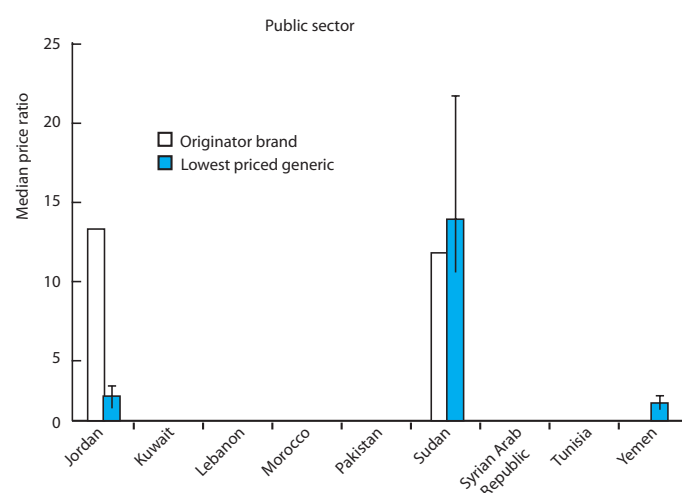
The data for generic products indicate that in Jordan and Yemen prices were higher than would be considered 'acceptable' (PPP-adjusted MPR 2.08 and 1.10 respectively), and in Sudan prices were high (PPP-adjusted MPR 14.17) (Figure 4). Table 9 provides some examples of the MPRs for individual medicines in the three countries. Note that PPP-adjusted MPRs have been reported since these are prices which patients have to pay for. However, there may be some link between procurement price and patient price depending on the national procurement model, therefore consulting CPI-adjusted MPRs may also be of value in interpretation (Figure 4 and Annex 5).

### (a) CPI-adjusted MPR



**Note.** Medicines are provided free of charge at public sector health facilities in Kuwait, Lebanon, Pakistan, Syrian Arab Republic and Tunisia.

### (b) PPP-adjusted MPR



Error bars represent interquartile range.

**Figure 4. Median price ratios (MPRs) for lowest priced generic medicines in public sector facilities**

**Table 9. Examples of public sector MPRs for lowest price generic medicines**

Medicine name	Median price ratio (CPI-adjusted MPR)*			Median price ratio (PPP-adjusted MPR)*		
	Jordan	Sudan	Yemen	Jordan	Sudan	Yemen
Amoxicillin	1.13	2.31	1.24	2.61	7.46	1.22
Captopril	0.29	4.51	0.55	0.67	14.58	0.55
Carbamazepine	0.85	4.19	–	1.97	13.55	–
Diazepam	2.41	5.66	–	5.57	18.32	–
Glibenclamide	0.84	6.13	–	2.17	19.83	–
Salbutamol inhaler	–	0.92	–	–	2.99	–

\* MPRs have been corrected for inflation, exchange rates and standardized to MSH 2003 reference prices. MPR is shown without interquartile range.

#### *Patient/procurement price ratio*

The ratio of public sector patient price MPR (the price that the patient pays at the health facility) to public procurement MPR (procurement price) was calculated when both were available for the same medicine and the median ratio determined (using CPI-adjusted MPRs in both cases). This provides a measure of additional costs and profits, e.g. administration and transport, which are added to the procurement price before the medicine is provided to the patient. Note that the procurement orders in the surveys do not necessarily reflect those orders which provided the medicines available in the facilities, adding some variability into the calculation. There were insufficient medicine pairs for originator products to allow this analysis, therefore only ratios relating to generic medicines are presented (Table 10). In Jordan, the median ratio was 1.3, suggesting that for most medicines there is a modest increase in price of around 30% on average. In Sudan the patient price was 8.79 times greater than the public procurement price, indicating substantial add-on costs in the public distribution system for those medicines which were available. This may also be explained by the fact that the public sector facilities in Khartoum state, Sudan belong to a revolving drug facility and tend to base their prices more according to their competition (private retail pharmacies) than as a simple mark-up on the procurement price. There were no matching data for Yemen to allow comparisons.

**Table 10. Ratios of the prices patients pay in public health facilities to the public procurement price for medicines with data available in both cases**

Country (no. of medicine pairs)	Public health facility price / procurement price ratio			
	Median	Interquartile range	Minimum	Maximum
Jordan (9)	1.3	1.0–1.4	0.5	1.9
Sudan (19)	8.8	4.9–16.2	2.8	152.0
Yemen (0)	–	–	–	–

#### *Key points*

- The prices of generic medicines when purchased at public health facilities are generally above an acceptable level.
- Costs in the public distribution system in Sudan add substantially to the price of generic medicines to patients at public health facilities.

### 3.5 Private retail medicine prices

In the private retail sector, summary MPRs were substantially higher than those observed in public sector procurement and public health facilities across the region. PPP-adjusted MPRs for OBs were greater than 1 in all countries, and ranged from 1.5 to 570.0, while for LPGs the PPP-adjusted MPRs ranged from 0.2 to 218.7 (Figure 5).

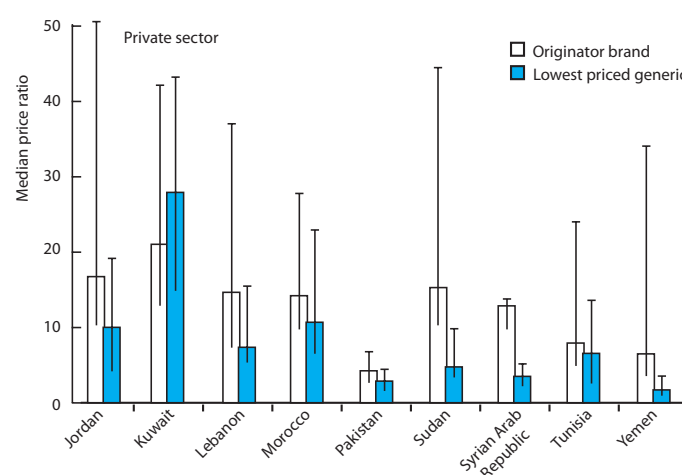
It is worth comparing how the pattern of MPRs between countries varies depending on whether one is using CPI-adjusted or PPP-adjusted MPRs (Figure 5a and 5b). If one focuses on generic medicines, the CPI-adjusted MPR clearly depicts Kuwait as having the most expensive LPG medicines on a direct comparison basis. However, correcting for PPP brings Jordan and Morocco on to a par with Kuwait, and shows a substantially higher (PPP-adjusted) price for LPG in Pakistan compared to other countries. These changes are a reflection of the various purchasing powers of the local currencies and underlines how, while considering the MPR in isolation can identify gross pricing issues requiring further investigation or action, due attention should also be paid to affordability data (see later).

There is little price differential between originator brand and LPG medicines in Kuwait, which is a result of the pricing regulations in force [18]; the similarity in prices actually resulted in the summary MPR for LPG being higher than OB although for the majority of medicines the opposite was the case (this ‘anomaly’ was not evident in the raw data for this survey but was present after the data were standardized to 2003 MSH reference prices). Modification of the pricing regulatory structure and availability of more generics could provide patients with greater financial benefits from the use of generic medicines in Kuwait. Such a differential is evident in the other countries except Morocco. In Morocco, many originator medicines may be exempt from import duties and value-added tax (VAT), whereas the price of locally made generic medicines can be inflated by import duties for raw materials and VAT in addition to wholesaler and retailer mark-ups, the latter of which are biased towards sale of more expensive products [15].

In general, medicine prices in private retail facilities are ‘excessive’ in the Region. For particular medicines, this is unquestionable (Table 11). For example, median PPP-adjusted MPRs (across all the surveys) of 40 or more are seen for originator brand atenolol (40), ciprofloxacin (108), diclofenac (66), fluoxetine (100) and glibenclamide (58) (CPI-adjusted MPRs range from 6 to 130 for these medicines). The LPG versions also show excessive pricing with PPP-adjusted MPRs of 20 or greater for: atenolol (21), ciprofloxacin (30), diclofenac (34), fluoxetine (21) and glibenclamide (20) (CPI-adjusted MPRs range from 1 to 112). It is also worth noting generic hydrochlorothiazide which was

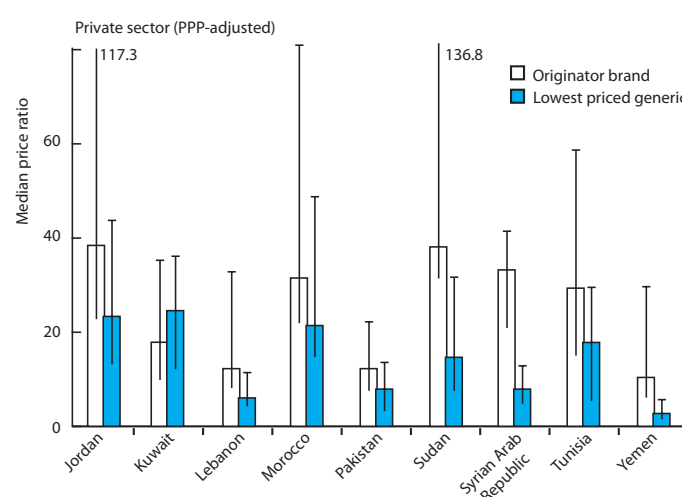
present in four countries with a median PPP-adjusted MPR of 122. Further examples can be found in the detailed data appended to this report (Annex 5). If patients are unable to access medicines in the public sector due to low availability (see Availability above), they will be forced to seek them in the private sector and to pay these high prices – something which no-wage and low-wage earners may find unaffordable (see Affordability below) – or they may forgo them altogether.

#### (a) CPI-adjusted MPR



Error bars represent interquartile range.

#### (b) PPP-adjusted MPR



Error bars represent interquartile range.

**Figure 5. Median price ratios (MPRs) for medicines in private sector retail pharmacies**

Table 11(a). Private retail sector MPRs (CPI-adjusted) for selected medicines

Medicine name	Median price ratio (CPI-adjusted MPR)*								
	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
<b>Originator brands</b>									
Atenolol	45.8	44.3	42.0	15.9	11.2	49.9	13.0	–	25.5
Carbamazepine	11.7	15.1	10.0	9.2	2.5	14.9	7.1	–	8.1
Diclofenac	63.6	76.3	42.9	26.1	15.8	46.7	20.5	24.1	42.6
Glibenclamide	38.4	66.3	34.8	39.6	6.1	–	–	27.7	46.2
Phenytoin	9.3	8.6	10.1	10.2	–	–	–	5.7	10.4
Ranitidine	24.3	53.9	36.3	34.0	6.1	–	7.6	26.7	10.2
Salbutamol inhaler	2.6	6.9	3.0	3.3	0.8	3.5	–	0.9	2.1
<b>Generics</b>									
Captopril	8.3	16.0	4.8	13.1	2.9	4.5	2.6	6.7	2.2
Ciprofloxacin	22.1	112.4	32.7	82.4	7.3	8.9	2.3	21.8	4.2
Co-trimoxazole suspension	4.7	17.1	10.3	5.8	1.2	2.8	1.9	6.3	2.2
Fluoxetine	20.6	–	27.2	23.4	4.7	3.0	1.8	31.2	2.4
Glibenclamide	18.5	60.7	7.1	16.6	3.7	7.3	3.1	6.9	7.8
Omeprazole	5.6	14.8	5.1	2.8	0.9	1.3	1.4	6.7	0.5
Salbutamol inhaler	1.1	–	2.3	2.9	0.8	1.6	1.1	–	0.8

\* MPRs have been corrected for inflation, exchange rates and standardized to MSH 2003 reference prices, but have not been adjusted for purchasing power parity. MPR is shown without interquartile range.

Lack of data precluded comparison of OB or LPG public health facility data with private retail MPRs. However, the median ratio of private retail prices to public procurement prices for LPGs was calculated where medicines were available in both sectors (the ratio was determined using CPI-adjusted MPRs in both sectors since to compare a CPI-adjusted MPR to a PPP-adjusted MPR would not be valid). The countries tended to fall into one of two groups: those with a lower median ratio (Lebanon 3.2, Morocco 2.9, Pakistan 4.0, Syrian Arab Republic 1.4, Tunisia 3.3, Yemen 3.4) or those with a higher ratio (Jordan 23.5, Kuwait 12.7, Sudan 13.0). Lower ratios, where the private sector price is not many times greater

than the public procurement price, indicate countries with either relatively efficient procurement and/or relatively low private sector prices (Pakistan, Syrian Arab Republic, Yemen) or those with relatively high procurement prices coupled with high private sector prices (Lebanon, Morocco, Tunisia). Higher ratios result from low procurement prices coupled with high private sector prices (Jordan, Kuwait, Sudan). Where efficient public procurement mechanisms are in place, it may be possible to introduce options to supply essential medicines to private facilities which could lower medicine prices in the latter, especially for chronic disease medication such as insulin or asthma inhalers.



**Table 11(b). Private retail sector MPRs (PPP-adjusted) for selected medicines**

Medicine name	Median price ratio (CPI-adjusted MPR)*								
	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
<b>Originator brands</b>									
Atenolol	105.8	38.4	38.9	42.3	41.0	161.4	39.0	–	25.1
Carbamazepine	27.0	13.1	9.3	24.4	9.0	48.1	21.1	–	8.0
Glibenclamide	88.7	57.5	32.3	104.9	22.5	–	–	78.4	45.5
Diclofenac	146.9	66.2	39.8	69.3	57.9	151.0	61.4	68.2	41.9
Phenytoin	21.5	7.5	9.4	27.1	–	–	–	16.2	10.2
Ranitidine	56.2	46.7	33.7	90.1	22.2	–	22.8	75.5	10.0
Salbutamol inhaler	6.0	6.0	2.8	8.6	2.7	11.5	–	2.4	2.0
<b>Generics</b>									
Captopril	19.1	13.9	4.5	34.7	10.5	14.6	7.9	19.0	2.2
Ciprofloxacin	51.0	97.4	30.4	218.7	26.7	28.8	6.8	61.7	4.1
Co-trimoxazole suspension	10.8	14.8	9.6	15.3	4.4	8.9	5.8	17.9	2.2
Fluoxetine	47.6	–	25.2	62.1	17.0	9.8	5.5	88.4	2.4
Glibenclamide	42.7	52.6	6.6	44.0	13.7	23.5	9.2	19.5	7.7
Omeprazole	12.9	12.8	4.7	7.5	3.2	4.2	4.3	19.0	0.5
Salbutamol inhaler	2.5	–	2.2	7.7	2.7	5.2	3.2	–	0.8

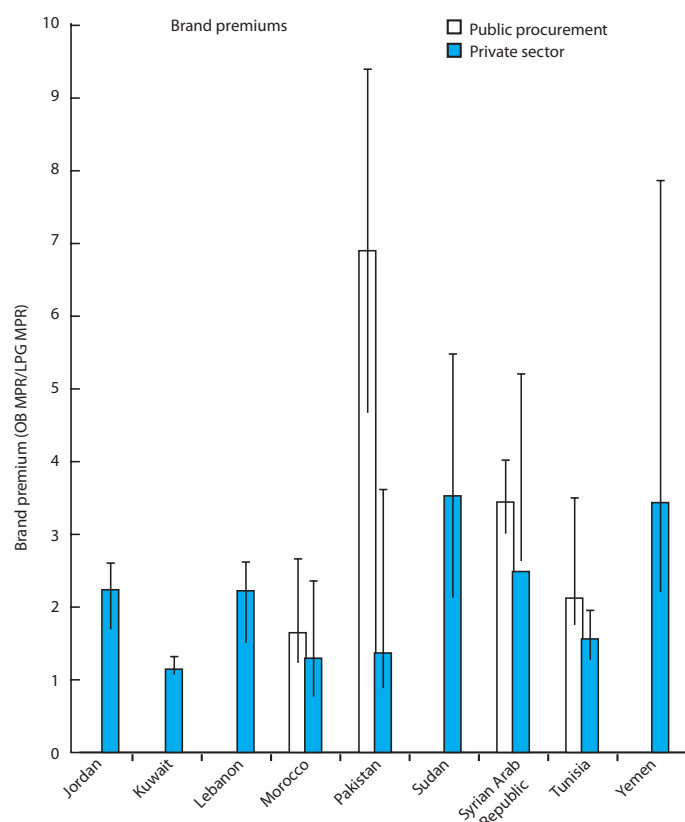
\* MPRs have been corrected for inflation, exchange rates and standardized to MSH 2003 reference prices, but have not been adjusted for purchasing power parity. MPR is shown without interquartile range.

#### Key points

- Medicine prices in private retail pharmacies are generally very high
- Pharmaceutical policies and pricing regulations in Kuwait and Morocco contribute to little difference in the price between OB and LPG medicines
- Specific medicines suffer from excessive private retail prices across the Region

#### 3.6 Brand premiums

By comparing the price of both originator brand and its generic equivalent within the same sector, it is possible to determine how much extra the branded medicine costs – the brand premium. The brand premium was calculated for procurement and private retail pharmacy prices (insufficient data were available for public sector prices) (Figure 6).



**Note:** for the number of medicine pairs used in each calculation, please refer to methodology. Values represent how many times more the originator costs than its matched generic equivalent. Error bars represent interquartile range.

**Figure 6. Median brand premiums in public procurement orders and private sector retail prices calculated using matching brand and generic medicine pairs**

**Procurement prices.** This was alluded to in the earlier section on public procurement (section 3.2). Four countries had matching medicine pairs that had been procured both as OB and LPG – Morocco (median brand premium 1.7), Pakistan (7.0), Syrian Arab Republic (3.7) and Tunisia (2.1) – yielding a median of 2.9 (calculated using all available medicine pairs).

**Public patient prices.** There were no matching medicine pairs upon which to base the calculation.

**Private retail patient prices.** It was fairly consistent that a patient purchasing OB medicine would be paying about twice the price of the equivalent LPG (median 2.3 times). Yemen (3.9) and Sudan (3.7) had the largest brand premiums meaning that the originator price was more than 3½ times the generic price on average. In Kuwait, the median brand premium was only 1.1, i.e. there is only a 10% price differential between OB and LPG medicines. For example, the PPP-adjusted MPRs for originator and lowest priced generic products respectively in Kuwait were 38.4 and 36.2 for atenolol, and 107.3 and 97.4 for ciprofloxacin. This provides

little incentive for patients to use generic medicines. This contrasts with Lebanon where patients could save more than 50% off the price of the OB by purchasing a generic e.g. MPRs for OB and LPG atenolol were 38.9 (OB) and 8.0 (LPG) and for ciprofloxacin were 107.9 (OB) and 30.4 (LPG). The low brand premium in Kuwait appears to be a result of pricing regulations which provide no incentive or requirement for marketers of generic medicines to price them much lower than the OB [18]. This would not be important if OBs had low prices, but it has been observed that OB products in Kuwait have the highest summary MPR in the Region and this results in excessively priced generic products.

Morocco, which was seen to have similar MPRs for OB and LPG medicines in the private sector (vide supra), Pakistan and Tunisia were the only other countries with a brand premium less than 2 suggesting that the financial advantages of generic medicines are not being suitably realized in these countries, although in the case of Pakistan originator brand prices are relatively low.

#### Key points

- Branded medicines in the private sector on average cost approximately twice that of their generic equivalents.
- Patients in Morocco, Pakistan and Kuwait are not benefiting from the advantages that should be present through the use of generic medicines.

### 3.7 Affordability

As an indication of affordability, the number of days' wages it would take for the lowest paid unskilled government worker to purchase a selection of standard therapies was determined. Standard treatments for 9 conditions (2 acute infections and 7 chronic diseases) are shown, while calculations for a wider range of core medicines are provided in Annex 6. The affordability to persons suffering from multiple conditions or to families where there is a single breadwinner but more than one ill family member can be derived by simple addition of the appropriate number of days' wages. As an arbitrary threshold, a treatment requiring more than 1 days' wage will be considered "unaffordable".

#### Public sector affordability

In most countries, medicines are provided free to patients in the public health sector. Table 12 and Figure 7 shows the number of days' wages needed to afford the standard treatments in those countries that charge for public health medicines (only generic medicines are shown since OB medicines were usually not available).

All standard treatments shown were affordable at public health facilities in Jordan. Low-wage earners in Sudan would find some of the treatments unaffordable. To afford one month's supply

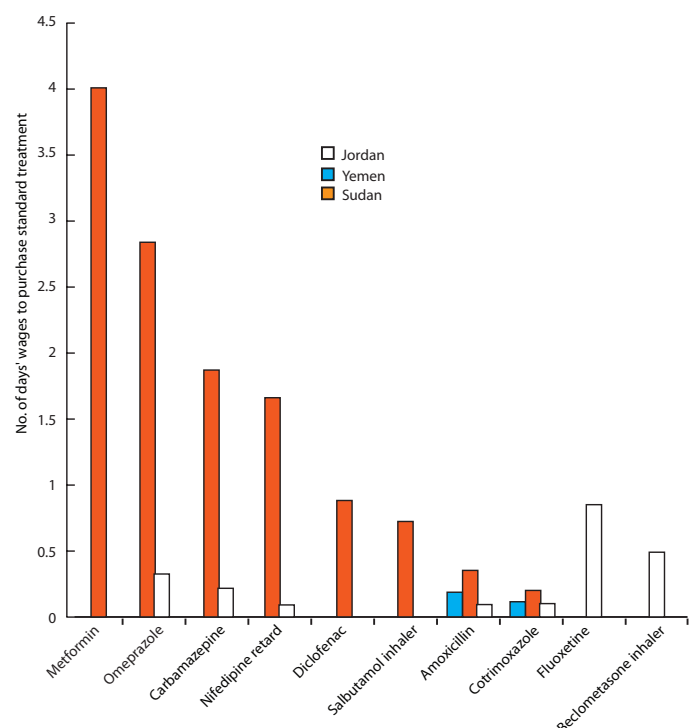
of metformin would require 4.0 days' wages of the lowest paid government worker in Sudan, while peptic ulcer therapy with omeprazole in Sudan (2.9) was also particularly unaffordable. A therapeutic alternative, ranitidine, was also unaffordable (2.5 days; see Annex 6). While acute respiratory infection treatments were affordable in Yemen, availability of other medicines was limited. These numbers are only indicative given that there will be many persons earning less than the designated government worker.

### Private sector retail pharmacies

Given the problems of availability of many medicines in the public health sector as suggested by the data from the survey, patients may be forced to seek their supply from private retail pharmacies. Affordability calculations are shown in Table 13.

**Acute respiratory infection (amoxicillin).** A week of amoxicillin was affordable in all countries when purchased as the lowest priced generic (range 0.2–1.0 days' wages). Originator brand would be unaffordable in Jordan (2.3 days' wages) and Kuwait (2.4) (no generic was available in Kuwait) but affordable in Morocco (1.0) and Pakistan (1.0).

**Acute respiratory infection (co-trimoxazole).** A week's treatment with co-trimoxazole suspension for a child was affordable in all countries as a generic (range 0.2–1.0 days' wages) and branded (range 0.3–1.4 days' wages) medicine except for the originator product in Sudan (1.4)



**Figure 7. Affordability of standard treatments with generic medicines at public health facilities**

**Table 12. Number of days' wages needed to pay for standard treatment in the public sector**

Standard treatment	Type	Affordability (no. of days' wages)		
		Jordan	Sudan	Yemen
Acute infections				
Amoxicillin 250mg 1 capsule 3 times/day for 7 days	LPG	0.1	0.3	0.2
Co-trimoxazole suspension 5ml 2 times/day for 7 days	LPG	0.1	0.2	0.1
Arthritis				
Diclofenac 25mg 1 tablet 2 times a day for 30 days	LPG	–	0.9	–
Asthma				
Salbutamol inhaler (1 inhaler over 30 days)	LPG	–	0.7	–
Beclometasone inhaler (1 inhaler over 30 days)	LPG	0.5	–	–
Depression				
Fluoxetine 20mg 2 capsules once a day for 30 days	LPG	0.7	–	–
Diabetes				
Metformin 500mg 1 tablet 3 times daily for 30 days	LPG	–	4.0	–
Epilepsy				
Carbamazepine 200mg 1 tablet 2 times daily for 30 days	LPG	0.2	1.9	–
Hypertension				
Nifedipine Retard 20mg 1 tablet daily for 30 days	LPG	0.1	1.6	–
Peptic ulcer				
Omeprazole 20mg 1 capsule daily for 30 days	LPG	0.3	2.9	–

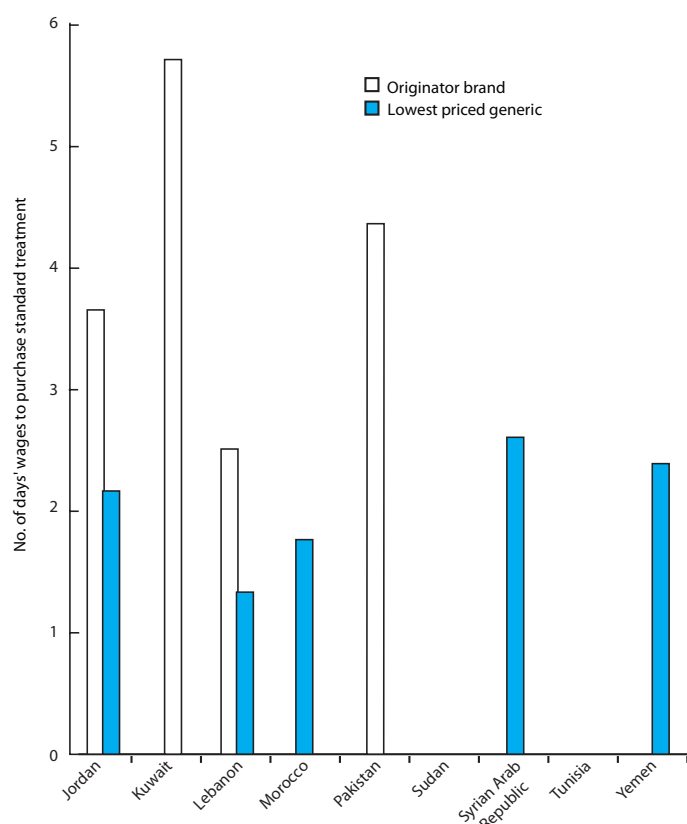
LPG – lowest priced generic medicine

**Table 13. Affordability of standard treatments based on the wage of the lowest paid unskilled government worker and local prices of the medicine in private retail pharmacies**

Standard treatment	Type	Affordability (no. of days' wages)								
		Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acute respiratory infection										
Amoxicillin 250mg 1 capsule 3 times/day for 7 days	OB	2.3	2.4	-	1.0	1.0	-	-	-	-
	LPG	0.9	-	-	0.8	1.0	0.4	0.6	-	0.2
Acute respiratory infection (child)										
Co-trimoxazole suspension 5ml 2 times/day for 7 days	OB	0.9	-	0.6	0.3	0.4	1.4	0.5	0.3	0.8
	LPG	0.3	1.0	0.4	0.2	0.3	0.3	0.2	0.3	0.2
Arthritis										
Diclofenac 25mg 1 tablet 2 times a day for 30 days	OB	4.6	5.2	2.0	1.1	4.5	5.4	3.2	1.3	5.0
	LPG	2.1	3.5	1.7	0.8	1.7	0.9	0.8	0.7	0.6
Beclometasone inhaler (1 inhaler over 30 days)	OB	2.4	2.7	1.6	-	3.1	-	-	-	-
	LPG	1.6	-	0.7	1.0	-	-	1.6	0.4	1.8
Depression										
Fluoxetine 200mg 2 capsules once a day for 30 days	OB	21.6	34.3	15.9	14.6	36.4	-	-	13.5	-
	LPG	8.6	-	7.2	5.9	7.7	2.0	1.6	9.8	1.6
Diabetes										
Metformin 500mg 1 tablet 3 times daily for 30 days	OB	2.5	1.8	-	0.6	1.9	6.4	-	1.1	3.6
	LPG	1.2	1.6	2.9	0.6	1.6	2.7	1.6	0.8	1.4
Epilepsy										
Carbamazepine 200mg 1 tablet 2 times daily for 30 days	OB	3.3	4.0	1.8	1.6	2.7	6.7	4.2	-	3.7
	LPG	1.6	-	0.9	-	1.8	1.8	1.7	0.4	1.1
Hypertension										
Nifedipine Retard 20mg 1 tablet daily for 30 days	OB	-	4.2	2.1	2.9	2.4	-	-	1.3	8.6
	LPG	1.7	-	0.9	1.2	-	1.7	-	0.2	1.0
Peptic ulcer										
Omeprazole 20mg 1 capsule daily for 30 days	OB	19.9	22.0	14.6	10.6	23.7	-	-	-	13.5
	LPG	7.7	19.3	4.5	2.3	4.8	2.9	4.3	7.0	1.1

OB: Originator brand medicine

LPG: lowest priced generic medicine



**Note:** Data only shown where both products were available as originator brand or lowest priced generic

**Figure 8. Affordability of asthma treatment (one salbutamol inhaler plus one beclometasone inhaler) from private sector retail pharmacies**

**Arthritis (diclofenac):** One month's treatment with the generic ranged from 0.6 (Yemen) to 3.5 (Kuwait) days' wages. Treatment with the originator product would be unaffordable in all countries (range 1.1–5.4 days' wages).

**Asthma (salbutamol, beclometasone):** A salbutamol inhaler was generally affordable as a generic (range 0.5–1.4 days' wages) except in Pakistan (1.4) and Sudan (1.2). The originator brand was unaffordable in all countries except Lebanon and Morocco. Beclometasone inhaler was only affordable when purchased as the generic in Lebanon, Morocco and Tunisia). A patient who would need both a salbutamol inhaler and a beclometasone inhaler (1 each per month) would always need to pay more than 1 days' wage for the two medicines together except in Tunisia (using OB salbutamol and LPG beclometasone) (Figure 8, Annex 6).

**Depression (fluoxetine):** A low-wage government employed patient prescribed fluoxetine would need to work for between 1.6 (Syrian Arab Republic; Yemen) and 8.6 (Jordan) days to afford a month's treatment of the generic version. The originator product

would be extremely unaffordable in all cases (range 13.5–36.4 days' wages).

**Diabetes (metformin):** A low-wage government employed diabetic patient requiring metformin, would earn enough to pay for a month's supply after 0.6 days in Morocco (generic and originator). The patient would find it unaffordable in Sudan (2.7 and 6.4 days' wages for generic and originator respectively) where it is also unaffordable at public health centres (vide supra). Originator brand metformin would be unaffordable in all countries except Morocco.

**Epilepsy (carbamazepine):** Although most figures were not extreme, a month's supply of carbamazepine would generally be unaffordable, requiring a range of 0.4–1.8 days' wages for the generic and 1.6–6.7 days' wages for the originator product.

**Hypertension (nifedipine retard):** Generic nifedipine was affordable in Tunisia (0.2), Lebanon (0.9) and Yemen (1.0) but unaffordable in other countries where available (maximum 1.7) (Figure 9). Affordability of the originator product ranged from 1.3 (Tunisia) to 8.6 (Yemen) days' wages.

**Peptic ulcer (omeprazole):** One month's treatment with omeprazole would be very unaffordable to a low-wage government worker whether purchased as the generic (1.1–19.3 days' wages) or the originator brand (10.6–23.7 days' wages) (Figure 10).

**Summary:** Overall, only a small number of medicines would be affordable to low-wage government workers across the Region if purchased as generic products. The majority of standard treatments would be unaffordable. Should a generic equivalent not be locally available, as was occasionally the case—particularly in Kuwait and Morocco—then medicines were largely unaffordable as the originator brand. There was a wide variability in affordability across the countries and, in some cases medicines were extremely unaffordable, e.g. a whole month's salary would be required to purchase a month's standard treatment of omeprazole in Pakistan or fluoxetine in Kuwait with the originator product. While there are important implications for securing availability of affordable medicines from public health centres, appropriate prescribing must also be ensured, e.g. a low-wage unskilled government workers in Jordan might be able to afford a month's supply of amitriptyline from a private pharmacy (1.4 days' wages for generic) if it were not available at a public health centre, but if he/she was prescribed fluoxetine the treatment would become totally unaffordable (8.6 days' wages for generic, 21.6 days' wages for brand).

#### Key points

- Most standard treatments with core medicines would be free or affordable from public health facilities when the medicines are available.

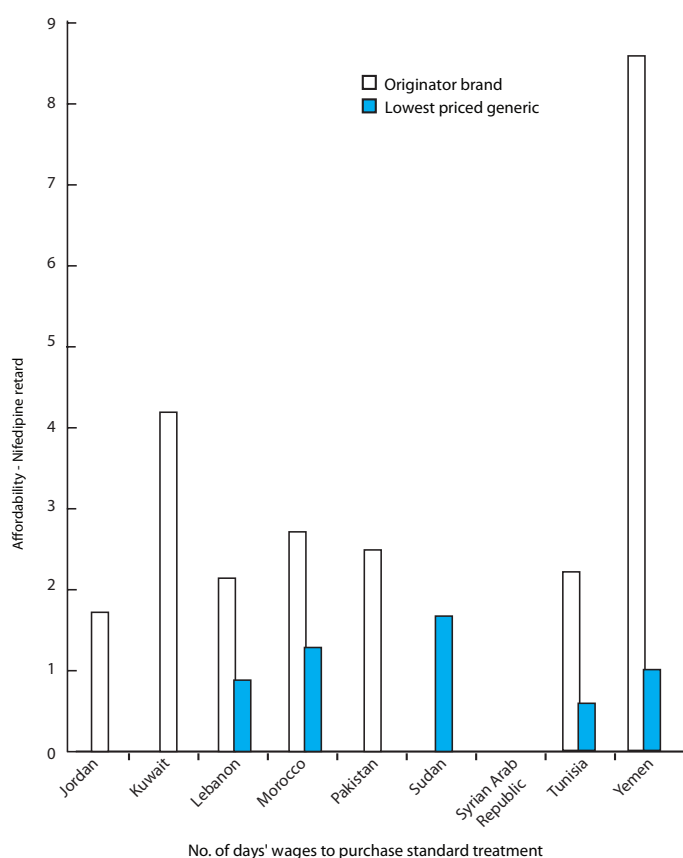


- There is wide variability in the affordability of medicines in private retail pharmacies to low-wage government workers.
- Obtaining medicines as generics rather than originator brands can increase affordability; however, generics are not always available.

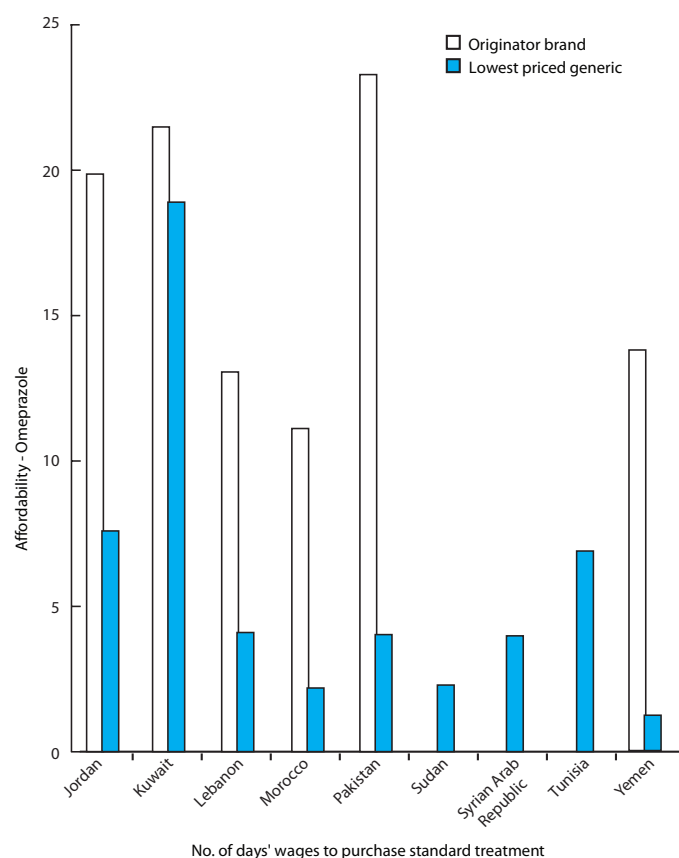
### 3.8 Individual medicine prices

Summary MPRs do not provide a complete picture of the medicine price situation in a country. They are by nature a composite measure which may reflect high prices for some medicines and low prices for others and, due to variations in availability and supplementary medicines, may reflect slightly different baskets of medicines. In addition, the relative price relationship between one medicine and other or between originator brand and generic may differ between countries. The summary measures need to be interpreted in this light and caution exercised when comparing them. However, comparison of data from medicine pairs suggests that the summary observations are a good reflection of the

differences at individual medicine level. This can also be seen in Table 14 which compares a selection of medicines across countries, and in the various examples given in each section which provide a sense of the data on which the summary MPRs are based. It would appear that the standard medicine basket employed in the WHO/HAI methodology is robust at this level. While market size and volume, prescribing patterns, product age and other factors may impinge on the prices of individual medicines, and will need to be taken into account depending on the purpose of the international medicine price comparison, the composite values provided by the WHO/HAI survey appear to provide a suitable descriptor for the situations in their respective countries. However, in making cross-country comparisons, reference should always be made to individual medicine data. To assist in this, detailed data of individual medicine MPRs are presented as an annex to the report with both CPI-adjusted and PPP-adjusted MPRs (Annex 5).



**Figure 9. Affordability of nifedipine retard from private sector retail pharmacies**



**Figure 10. Affordability of omeprazole from private sector retail pharmacies**

**Table 14. Examples of private sector MPRs for individual medicines compared to overall summary MPRs**

Country	Type	Ciprofloxacin	Glibenclamide	Nifedipine retard	Ranitidine	Summary MPR	Summary availability
Jordan	Brand	232.0	88.7	–	56.2	39.4	60%
	Generic	51.0	42.7	24.9	30.3	24.3	80%
Kuwait	Brand	107.3	57.5	25.1	46.7	18.7	84%
	Generic	97.4	52.6	–	35.0	24.3	4%
Lebanon	Brand	107.9	32.3	20.2	33.7	14.1	95%
	Generic	30.4	6.6	8.2	4.9	6.5	84%
Morocco	Brand	344.5	104.9	83.0	90.1	32.7	95%
	Generic	218.7	44.02	34.6	32.7	25.8	50%
Pakistan	Brand	99.5	22.5	14.4	22.2	12.8	54%
	Generic	26.7	13.7	–	16.9	8.6	31%
Sudan	Brand	–	–	–	–	50.9	0%
	Generic	28.8	23.5	22.2	11.9	14.6	90%
Syrian Arab Republic	Brand	–	–	–	22.8	38.7	0%
	Generic	6.8	9.2	–	8.1	8.5	98%
Tunisia	Brand	–	78.4	33.1	75.5	33.1	77%
	Generic	61.7	19.5	6.0	48.3	19.0	95%
Yemen	Brand	99.7	45.5	34.5	10.0	10.0	50%
	Generic	4.1	7.7	3.9	0.9	2.4	90%

Note. MPRs shown are PPP-adjusted MPRs.

### 3.9 Price components of medicines in the private sector

Since the introduction of the WHO/HAI medicine price survey methodology, there has been a revision in the collection and classification of medicine price components. However, in this report, the older version of recording price components is used, in keeping with the format in use at the time of the surveys and the data entered in the workbooks. It should also be noted that some detail is lost by condensing the data, which may also be outdated if tax or duty levels or regulated mark-ups have changed since the country survey was conducted. In addition, it should be borne in mind that many of the surveys did not verify their data but relied on official or theoretical calculations. The data are summarized in Table 15 with the detailed information of the examples shown in Annex 7.

Port and clearance charges were variable. They were not levied (or at least specified) in some countries, and were set as a fixed

fee in Morocco and a substantial percentage in Lebanon (for imported medicines only) and Sudan (includes customs duty). Other fees, duties and/or taxes were levied on locally produced and imported medicines in Morocco and Sudan adding up to 10% on the price. Local manufacturers in the Syrian Arab Republic received a regulated profit margin of 20% plus an 8% allowance for ‘propaganda’ (marketing costs).

Mark-ups or profit margins for importing agents or wholesalers, and retailers were regulated in all settings (see Box 1). Wholesaler margins varied from 2% (Pakistan) to 35% (Kuwait) while retailer margins usually exceeded wholesaler margins (except in Kuwait), ranging from 8% to 30%. It is worth noting that the retailer margin in the Syrian Arab Republic was on a sliding scale with more expensive items attracting a smaller percentage profit (see Box 2). A similar policy is applied in Tunisia, with retailer mark-ups of 31.6%, 35.1%, 38.9% and 42.9% depending on the item cost.

**Table 15. Price component summary for medicines in the private sector**

Country	Port and clearance	Other fees/ duties	Tax	Importer/ Wholesaler mark-up (%)	Retailer mark-up (%)	Example from survey	Total cumulative mark-up
Jordan (OB/LPG imported)	3.5%	0.2%	4%	19%	26%	Amoxicillin cap 250mg	61.8%
Kuwait (OB/LPG imported)	–	–	–	35%	26%	Beclometasone inhaler	70.1%
Lebanon (LPG imported) <sup>a</sup>	11.5%	–	–	10%	30%	Atenolol tab 50mg	59.5%
Lebanon (LPG imported) <sup>a</sup>	11.5%	–	–	10%	30%	Atenolol tab 50mg	59.5%
Morocco (OB imported)	Fixed fee <sup>b</sup>	–	7%	10%	30%	Amitriptyline tab 25mg	53.4%
Morocco (LPG local)	– <sup>c</sup>	–	–	10%	30%	Atenolol tab 100mg	80.9%
Pakistan (OB local)	–	1%	–	12% <sup>d</sup>	15%	Amoxicillin cap 250mg	35.0%
Pakistan (LPG local)	–	1%	–	7% <sup>d</sup>	15%	Amoxicillin cap 250mg	28.0%
Sudan (OB imported)	11.53%	8%	–	15%	20%	Atenolol tab 50mg	66.7%
Syria (OB local)	–	8%	–	8%	11% <sup>e</sup>	Aciclovir tab 200mg	19.9%
Tunisia (OB imported)	–	–	6%	8.7%	31.6% <sup>e</sup>	Ranitidine tab 150mg	51.6%
Yemen (LPG imported)	6%	7%	5%	10%	20%	Aciclovir tab 200mg	57.4%

<sup>a</sup> 7.5% added on to FOB cost.

<sup>b</sup> Other charges may be levied depending on origin of import

<sup>c</sup> Royalties (5%) and packaging allowance added to ex-factory price

<sup>d</sup> Includes local distribution

<sup>e</sup> Sliding scale for retailer mark-ups

The additional charges added substantially to the landed or ex-factory price of medicines in most of the countries. A beclometasone inhaler in Kuwait would be sold at a price 70% greater than the landed CIF (cost, insurance, freight) price from the manufacturer. In Morocco, imported originator brand amitriptyline tablets incurred a cumulative mark-up of 53% while that for locally produced generic atenolol (100mg) tablets was 81%

The mark-ups on medicines in Sudan include levies for the standards association, pharmacy education/career and the Ministry of Defence, with atenolol tablets incurring a cumulative mark-up of 67% (in Lebanon a levy for the Lebanese Orders of Pharmacists and Physicians is also payable by importers although this is not reflected in the price component breakdown [16]). In Yemen, storage and transportation was applied as a percentage mark-up and public sector add-ons included allowance for supplementing

### Box 1. Regulated wholesaler and retailer mark-ups in the Region

Type of mark-up	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Wholesaler	19%	35%	10%	10%	7%*	15%	8%	8.7%	10%
Retailer	26%	26%	30%	30%	15%	20%	8%–30%	31.6%–42.9%	20%

\* includes 5% local distribution costs

Box 2. Sliding scale of retail mark-ups applied progressively in the Syrian Arab Republic [19]

Percentage mark-up to retail price	Wholesale price (Syrian pounds)
30%	1–40
20%	41–80
15%	81–200
10%	201–500
8%	≥501

the benefits of workers in the public medicine distribution system. Taken in the light of the poor affordability of many medicines and the fact that it is those members of society in ill health who have to pay these mark-ups, examination of the types and levels of taxes, duties and mark-ups is essential to determine whether they are justified. While public sector medicines may be exempt from many of these charges, if availability is poor in the public sector, patients will have to access medicines in the private sector, and it is usually those with the least disposable income who incur the largest out-of-pocket health expenditure [2].

Where wholesaler and retailer mark-ups are a fixed percentage of the medicine price, a larger profit is made on higher value items. This creates an incentive to sell more expensive products, including selling originator brands rather than generic equivalents where there is a significant price difference. The sliding scale system used for retail margins in the Syrian Arab Republic and Tunisia reduces the profit made on higher priced products and thereby can reduce the overall cost of these products to the patient.

Key points

- Some but not all countries charge customs clearing and excise duties on medicines for sale in the private sector.
- Pre-wholesale charges on medicines in Sudan include levies for standards, pharmacy and defence.
- Wholesale mark-ups are fixed percentages and appear excessive in Kuwait.
- Most retail mark-ups are fixed percentages which promote sale of more expensive medicines.

4. Conclusions

The WHO Eastern Mediterranean Region covers 22 countries. Data from 9 of these countries which have undertaken a medicines price survey utilizing the WHO/HAI methodology are summarized in this report. The countries differ significantly

Summary of conclusions

Availability

- Availability of medicines in public health facilities is generally suboptimal and needs improvement

Procurement

- Procurement prices are excessive in some countries, e.g. Morocco whereas others are obtaining acceptable prices
- There is over-reliance on originator brands of old, off-patent wide therapeutic index medicines when much cheaper generic equivalents exist

Public sector

- Prices of generic medicines in public health facilities are not always low
- Costs in the public distribution system in Sudan in particular add substantially to the price patients pay for generic medicines in public health facilities

Private sector

- Medicine prices in private retail pharmacies are generally excessive for both generic and originator medicines
- Pharmaceutical policies and pricing regulations result in only a small difference in the price of originator brand and generic medicines in Kuwait and Morocco

Affordability

- While standard treatments may be affordable to low wage earners from public health facilities when the medicines were available, prices from private retail pharmacies are excessive

Price components

- Taxes, levies and mark-ups add considerably to the manufacturer’s price for a medicine and are sometimes unrelated to the medicines distribution chain
- The largest component of the final patient price in most cases is the manufacturer’s selling price
- Fixed percentage-based mark-ups provide incentives to wholesalers and retailers to sell the more expensive medicines

in demographic and economic indicators. They also have varied health system structures, ranging from a largely private sector oriented system encountered in Lebanon to a well-developed public health system with universal health insurance in Kuwait. As might be expected, these factors will influence the availability and price of medicines for patients. However, within this diversity there are common difficulties which have to be faced and there are undoubtedly lessons which can be learnt from sharing and comparing experiences. From the data presented in this report it is possible to draw the following conclusions.

### *Availability*

Keeping in mind the limitations of the data which were raised earlier, it is clear that availability of core medicines is lower in the public sector than in the private sector. Availability of medicines on existing national essential medicines lists in particular needs to be quantified. Medicines available in the public sector are usually generics, but for those which are not available, the private sector is more likely to stock originator brands. The balance between availability of brand and generic medicines in the private sector varies between countries, probably reflecting differences in local pharmaceutical policy and regulations and health system structure.

### *Procurement prices*

Most countries procure a mix of originator and generic medicines for their public health sector. If the same medicine is obtained as originator and generic, the price is on average 2.9 times higher for the former. Some countries procure old medicines with a wide therapeutic index ('easy to substitute') such as diazepam and amitriptyline as originator brands when much cheaper generic versions are available. This increases costs both to the government and, where patients pay for medicines, to the end user. Public procurement lists should be examined with this in mind. Among the countries in this report, Morocco and the Syrian Arab Republic generally procured generic medicines at a higher price than other countries and should be able to improve their performance in this area. Kuwait shows some benefit from the Gulf Cooperation Council bulk procurement scheme, but not all medicines are procured through bulk procurement. Very few medicines were procured by the government in Yemen. Thus, even though they obtained low prices for those items, the actual benefit to patients is limited.

### *Public health sector medicine prices*

Not all countries charge patients for medicines in the public health sector. Where they do (Jordan, Sudan, Yemen), even the prices of generic medicines at public health facilities are above an acceptable level. Prices were high in Sudan despite very low procurement

prices, suggesting that costs in the public distribution system add substantially to the price of generic medicines at public health facilities. This is something which needs further examination. Prices were relatively low in Yemen but availability was very poor.

### *Private retail sector medicine prices*

Medicine prices in private retail pharmacies are generally very high for both generic and originator medicines. Some individual medicines such as ciprofloxacin and diclofenac appear to have excessive private retail prices in the Region. Generic medicines are on average half the price of their originator brand except in Kuwait and Morocco, where pharmaceutical policies and pricing regulations result in only a small observed difference in their prices, meaning that patients are not benefiting as much as they should from the use of generic medicines.

### *Affordability of standard treatments*

In those public health systems where patients pay for medicines, most standard treatments with core medicines would be affordable from public health facilities when available. However, availability was generally poor in public health facilities, meaning that patients would have to seek their pharmaceuticals from private retail outlets. The affordability from private retail pharmacies was in contrast to that from public health facilities, with wide variation in the affordability of medicines to low-wage earners. Purchasing the treatment as a generic medicine would improve affordability through eliminating the brand premium, but generic medicines were observed to be not always available, since private outlets often concentrated on originator brand products.

### *Medicine price components*

Medicines are exempt from import duties in some countries, whereas others apply fixed or percentage-based fees up to 11.5% of the landed price on medicines for sale in the private sector. Lebanon and Sudan include levies for pharmaceutical and physician associations, and these may be present in other countries. Levies for the Standards and Metrology Organization and Ministry of Defence were also applied in Sudan while the Syrian Arab Republic included an 8% allowance for pharmaceutical marketing activities. Mark-ups for importing agents and/or wholesalers were fixed percentages and were markedly higher in Kuwait than other countries. Retailer mark-ups were also percentage-based without payment of a professional fee. The percentages were fixed, thereby promoting sale of more expensive medicines, except in the Syrian Arab Republic and Tunisia where the percentage was reduced on higher cost items according to a sliding scale.

From these observation-based conclusions, it is possible to extract key issues relating to the pricing, availability and affordability of medicines in the Region which impinge on pharmaceutical policy and planning.

**Need for a health system approach.** A coordinated and comprehensive sector-wide approach towards pharmaceutical policy is required to address concerns of medicine pricing and access. While the medicine price surveys were limited in scope, it is clear that broader issues related to health systems and social protection and development policies are important. Good governance, developed and effective regulatory authorities and an appropriate level of financing for provision of essential medicines are necessary. Even where prices of medicines are at an acceptable level, social insurance schemes may be necessary to protect the indigent. National medicines policies can help provide the framework for a holistic approach to the issue of access to essential medicines.

**Inefficient procurement practices.** Implementing efficient public procurement practices has the potential to increase the coverage of existing medicine budgets through reduced corruption, decreased reliance on expensive originator brand medicines where suitable generic versions exist and obtaining multisource medicines at a low price through appropriate competitive tendering procedures.

**Non-availability of essential medicines in public health facilities.** Actions to address procurement and pricing of medicines in the public sector are of little consequence if medicines are not available at the point of dispensing. A reliable medicine supply system, incorporating an appropriate level of trained human resources, is vital for access to essential medicines to be ensured.

**“Excessive” prices in the private sector.** While there may be a tendency to think that the private health sector serves a more affluent sector of society and therefore higher medicine prices in retail pharmacies are acceptable, the surveys have shown that many poor patients cannot access their medicines from public health facilities and then have to resort to private pharmacies, where excessive prices may lead them to forgo their treatment altogether. Due cognisance needs to be taken of the place private pharmacies have in supplying the health needs of the poor.

**Price components and mark-ups.** Various mark-ups, additions and taxes may be placed on a medicine by governments to support the health sector or even other activities. However, these charges are ultimately paid by the ill, who may already have their income threatened or reduced as a result of the illness, and every effort should be made to minimize them, especially on essential medicines. Regressive mark-ups or flat dispensing fees can also be used to reduce the incentive to dispense expensive medicines when cheaper medicines or generic equivalents would be as effective.

## 5. Recommendations

In the national reports, many recommendations were made based on local findings and, in the intervening period between the surveys and the writing of this report, a number of actions have taken place, for example Lebanon has reduced FOB prices and introduced regressive mark-ups, the United Arab Emirates revised its pricing formula and Kuwait made a statement of intent to rescind its ‘Kuwaiti-only drug list’. The major recommendations from the survey reports are shown in Table 16. On the basis of the observations in this report and incorporating suggestions from the national medicine price survey reports, the following actions are recommended, bearing in mind aware that not all recommendations apply to all countries covered by this report.

### General

- Support good governance in the medicine procurement and supply system, ensuring transparency and accountability especially in public sector procurement and medicine pricing decisions.
- Strengthen national medicine regulatory authorities including capacity building in pharmacoeconomic analysis and medicine price regulation, developing collaborative regional centres of excellence where appropriate.
- Formulate and implement national medicines policies such that the pricing of medicines is seen within a comprehensive pharmaceutical policy framework which protects access and affordability for patients as well as national strategic interests.
- Invest in and develop supply and distribution networks, including appropriately trained human resources, to improve availability of medicines in public health facilities.
- Share local medicine price information systematically and establish a mechanism for regional medicine price comparisons and medicine price monitoring Regional and/or international reference pricing could be introduced as an integral part of pricing regulations.
- In those countries where a medicines price survey has not already been performed, undertake a price survey using the WHO/HAI tool to increase the evidence base for policy action and facilitate international comparisons of national data. In addition, where price components have not been verified, a full price components survey should be performed.
- Establish prepayment or other health insurance mechanisms to protect the poor from catastrophic health expenditure and facilitate their access to essential medicines.
- Inform and consult the public and civil society groups on the findings of medicine price surveys, price monitoring mechanisms and policy initiatives related to medicine prices as part of a transparent and inclusive process. All data should



be made publicly accessible. Where fixed or regulated prices exist, these should also be published in a media that is commonly used and accessible to the population.

### Strengthen public sector procurement

- Implement Good Procurement Practice to ensure efficient and transparent medicine supply.
- Increase financing for public procurement so as to cover all essential medicines, the need for which should be reliably quantified based on an essential medicines list or national formulary.
- Consider and, where appropriate, employ pooled procurement strategies and mechanisms to achieve economies of scale and enhance bargaining power, strengthening and expanding these where they already exist.
- Refer to published international reference prices, e.g. MSH prices, and share past procurement price data between countries to make better informed procurement decisions, improve self-audit and enhance bargaining power especially in the case of single-source medicines.
- Examine existing pricing regulations and pharmaceutical policies to ensure that the potential cost savings of generic medicines to the national budget and to patients are realized. As part of this strategy, public procurement lists should be scrutinized to determine whether they contain medicines of extensive market age and predictable pharmacology which are being procured unnecessarily as originator brands.

**Table 16. Major recommendations of local medicine price survey reports<sup>a</sup>**

Country	Major recommendations
Kuwait	Maintain and enhance efficiency of public procurement. Establish reference pricing mechanism for private sector prices. Promote the concept of a national formulary and prescribing and use of generic medicines. Ensure all essential medicines are made available to both nationals and expatriates. Conduct regular medicine price surveys to assess impact of policies.
Lebanon	Distribute and promote use of the essential medicines list. Unify and streamline public procurement mechanisms. Allocate adequate funding for public procurement of essential medicines. Enforce existing pharmaceutical import legislation. Review medicine pricing regulations and margins.
Morocco	Conduct a study into the poor availability of medicines in the public sector. Perform in-depth study into high public procurement prices of medicines. Investigate private sector prescribing practices. Reduce burden of medicine taxes and mark-ups and reduce high prices in the private sector. Promote prescribing and use of generic medicines. Conduct regular medicine price surveys to assess impact of policies.
Pakistan	Review and strengthen public procurement procedures. Increase direct or indirect financing for essential medicines. Improve affordability and access to medicines in the private sector. Revise and/or introduce pharmaceutical pricing and promotion legislation. Promote prescribing and use of generic medicines. Make medicine price information publicly available and establish a price monitoring mechanism.
Syrian Arab Republic	Implement monitoring of medicine prices. Increase transparency in medicine prices and investigate medicines of high MPR (>10). Apply regulated mark-ups and abolish 'propaganda' payment to pharmaceutical companies. Revise pricing policies to improve affordability, including price comparisons with other countries.
Tunisia	Sensitize prescribers to rational medicine use, particularly use of generic names in prescribing. Encourage and harmonize generic substitution through legal reinforcement. Involve pharmacists more in encouraging generic substitution.
Yemen	Enhance public sector medicine coverage and update national essential medicines list. Increase and rationalize national funding of pharmaceuticals in the public sector. Develop a comprehensive medicine pricing strategy which considers affordability by the poor. Institute international medicine price comparisons and pharmacoeconomic analysis. Revise and update the registration of CIF prices of imported medicines. Encourage generic prescribing.

<sup>a</sup> Reports were not available from Jordan and Sudan at the time of preparing this synthesis paper.

### *Improve availability and reduce prices in the public sector*

- Establish regional collaboration with regard to medicine pricing and pricing regulations. This could be coordinated through WHO-EMRO and/or existing regional bodies. Where such collaboration already exists, e.g. Gulf Cooperation Council, the scope should be extended beyond near neighbours to maximize the benefit.
- Investigate in detail local availability of essential medicines in public health facilities and medicine supply systems to determine the reasons for the lower availability compared to private sector facilities and take measures to address this.
- Institute monitoring mechanisms for medicine prices and availability as part of the national health information system.
- Perform further research into the pricing of medicines and factors influencing the access and affordability of medicines should be encouraged, where possible linked to policy objectives.

### *Rationalize prices in the private sector*

- Consider issues such as the therapeutic value of medicines in price regulations so as to maintain better control of generic medicine prices.
- Separate strategies to control the prices of medicines which are only available as originator brand and those for which generic (multisource) options are available. Consideration should be given to reduced or modified regulation of the prices of generic medicines in such a way as to allow them to compete against each other in terms of price rather than simply setting a price ceiling.
- Investigate the possibility of using public procurement mechanisms to supply specified essential medicines to the private sector as a means of increasing bargaining power and reducing medicine prices of these essential medicines in the private sector.
- Introduce pharmaceutical policies, as part of a national medicines policy, which encourage prescription, dispensing and use of generic medicines where appropriate, including due consideration of incentives and disincentives for prescribers and dispensers such as mark-ups with a declining rather than fixed percentage or fixed dispensing fees. The aim of these measures is to move the incentive of sale away from high priced products and towards more rational dispensing.
- Monitor the prices and availability of essential medicines in the private sector.

### *Review price components*

- Conduct an in-depth analysis of medicine price components, including assessing the impact of manufacturer and wholesaler discount and bonus schemes.
- Remove customs duties, levies and other taxes on essential medicines in the light that these are essentially taxes on the sick, elderly and most vulnerable in society. Alternative mechanisms should be explored to replace the revenue which will be lost through this intervention.
- Review the mark-up allowances for wholesaler agents and retailers, introducing regressive mark-ups where appropriate and, as part of wider appraisal of the pharmaceutical sector.

Following on from these country recommendations, specific activities can be envisaged for the WHO Regional Office for the Eastern Mediterranean with regard to medicine prices.

- In cooperation and with the approval of Member States, establish a central online resource of national procurement prices, including GCC bulk procurement prices.
- Publicize and make available, online or otherwise, existing sources international reference prices such as the MSH International Drug Price Indicator Guide.
- Support and encourage further medicine price surveys among Member States to develop the evidence base and establish a baseline which can be used for monitoring the impact of pharmaceutical policy interventions.
- Support and encourage in-depth studies of medicine price component analysis.
- Develop a framework or package of policy options for medicine prices which can be shared with Member States which wish to review their existing policies or address identified areas of concern.

The key recommendation of this report, which synthesizes data from 9 medicine price survey reports in the Eastern Mediterranean Region, is that national policy-makers and medicines regulators review their pharmaceutical pricing regulations within the framework of formal national medicines policies, establishing these where they do not exist, so as to optimize availability of and access to essential medicines, especially for the disadvantaged members of society. As a first step, countries should begin sharing pricing information to increase transparency and should remove import duties from essential medicines. It is strongly recommended that countries of the Region that have not conducted a medicine price survey using the WHO/HAI methodology undertake such a study to add their data and experience into the knowledge base and to make the data more representative of the Region as a whole.

## References

1. 'Who Pays for Health Systems?', in World Health Report 2000. WHO, Geneva, 2000. Available at: <http://www.who.int/whr/>. [Accessed 22 August 2006]
2. WHO/WTO [World Health Organization/World Trade Organization Secretariats] Report of the Workshop on Differential Pricing and Financing of Essential Drugs. Norwegian Foreign Affairs Ministry, Global Health Council. 8–11 April 2001, 2001, Høsbjør, Norway. Available at: [http://www.wto.org/english/tratop\\_e/trips\\_e/hosbjor\\_report\\_e.pdf](http://www.wto.org/english/tratop_e/trips_e/hosbjor_report_e.pdf). [Accessed 22 August 2006]
3. Logie DE, Woodroffe J. Structural adjustment: the wrong prescription for Africa? *British medical journal*, 1993, 307(6895): 41–4.
4. Bale HE Jr. Consumption and trade in off-patented medicines. CMH Working Paper Series. Paper no WG 4:3. May 2001. Available at: [http://www.cmhealth.org/docs/wg4\\_paper3.pdf](http://www.cmhealth.org/docs/wg4_paper3.pdf). [Accessed 22 August 2006]
5. *Duties and taxes on essential medicines used in the treatment of the major communicable diseases*. Brussels European Commission, Directorate-General for Trade, 2003. Available at: [http://ec.europa.eu/comm/trade/issues/global/medecine/docs/wtosub\\_100303.pdf](http://ec.europa.eu/comm/trade/issues/global/medecine/docs/wtosub_100303.pdf). [Accessed 22 August 2006]
6. Levison L, Laing R. The hidden costs of essential medicines. *WHO Essential drugs monitor*, 2003, 33:20–1. Available at: [http://mednet2.who.int/edmonitor/33/edm33\\_en.pdf](http://mednet2.who.int/edmonitor/33/edm33_en.pdf). [Accessed 22 August 2006]
7. Danzon P, Kim JD. International price comparisons for pharmaceuticals. Measurement and policy issues. *Pharmacoeconomics*, 1998, 14 Suppl 1:115–28.
8. *Report on the WHO regional training workshop on medicine prices*. Cairo, Egypt, 20–22 October 2003. [Document WHO-EM/EDB/042/E]
9. WHO/HAI [Health action international/World Health Organization] *Medicine prices: a new approach to measurement*. 2003 Ed. Geneva, World Health Organization and Health Action International, 2003. [Document WHO/EDM/PAR/2003.2]
10. *International drug price indicator guide*. Washington DC, Management Sciences for Health, 2006. Available at: <http://erc.msh.org>
11. *Price, availability and affordability: an international comparison of chronic disease medicines*. Cairo, WHO/HAI, 2006. [Document WHO-EM/EDB/068/E]
12. Flori YA, unpublished data, 2004.
13. Saad S, unpublished data, 2007.
14. *Comparing price data from different surveys*. Health Action International, 2006. Available at: <http://www.haiweb.org/medicineprices/manual/comparing.html> [Accessed 22 August 2006]
15. *Enquête sur les prix des médicaments – Maroc, Avril 2004*. Available at: [http://www.haiweb.org/medicineprices/surveys/200404MA/survey\\_report.pdf](http://www.haiweb.org/medicineprices/surveys/200404MA/survey_report.pdf) [Accessed 17 November 2006]
16. Karam R. *Survey report: prices of medicines in Lebanon*. 2005. Available at: [http://www.haiweb.org/medicineprices/surveys/200403LB/survey\\_report.pdf](http://www.haiweb.org/medicineprices/surveys/200403LB/survey_report.pdf) [Accessed 22 August 2006]
17. Sibai A-M, Sen K Can Lebanon conjure a public health phoenix from the ashes? *British medical journal*, 2006, 333: 848.
18. Ball DE, Tisocki K, Al-Saffar N. *Medicine prices in the State of Kuwait*. Report of a survey on medicine prices in Kuwait. March 2005. Available at: [http://www.haiweb.org/medicineprices/surveys/200407KW/survey\\_report.pdf](http://www.haiweb.org/medicineprices/surveys/200407KW/survey_report.pdf) [Accessed 22 August 2006]
19. Sallouta R, Ali R, Sijari AN. *Medicine prices, affordability, availability and component costs in the Syrian Arab Republic*. 2004. Available at: [http://www.haiweb.org/medicineprices/surveys/200312SY/survey\\_report.pdf](http://www.haiweb.org/medicineprices/surveys/200312SY/survey_report.pdf) [Accessed 30 August 2007]

## Annex 1. National pharmaceutical sector data

The information in this table is taken national pharmaceutical sector forms completed by survey managers and the reports they submitted upon completion of the medicine price surveys. Not all managers completed and submitted these forms/reports. The information may differ from official or other sources of the information and it may have changed since the time of submission.

Attribute	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Date of survey	May 2004	June 2004	February 2004	May 2004	September 2005	June 2005	December 2003	March 2004	July 2006
Population (millions)	–	2.2	4	30	158	–	18	9.9	19.7
'Buy rate' to US\$ at start of survey	0.7100 dinars	0.2948 dinars	1500 pounds	8834 dirhams	60 rupees	248,800 dinars	51,500 pounds	1,225 dinars	555 rials
General information of the pharmaceutical sector									
NMP for both private and public sectors	–	N	–	Y	Y	Y	–	–	Y
Essential medicines list (EML)	–	Y	–	Y	Y	Y	Y	–	Y
No. of medicines on EML	–	2800	–	270	452	565	–	–	321
Year of last revision	–	–	–	2004	2003	2005	–	–	2005
Generic prescribing or substitution policy	–	N	N	N	N	N	–	–	Y
Incentives for generic prescribing or substitution	–	N	N	N	N	N	–	–	N
Public procurement									
Public procurement uses a limited list	–	Y	Y	Y	N	Y	–	–	Y
International, competitive tender	–	Y	Y	Y	–	Y	–	–	Y
National, competitive tender	–	Y	–	Y	Y	Y	–	–	Y

	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
<b>Public procurement</b>									
Negotiation/ direct purchasing	–	Y	–	Y	Y	–	–	–	Y
Procured medicines must be registered	–	Y	–	Y	Y	N	–	–	Y
Local preference	–	N	–	Y	Y	N	–	–	Y
Donor–assisted programmes providing medicines	–	N	Y	Y	Y	Y	–	–	Y
<b>Distribution</b>									
Public sector distribution warehouse	–	Y	Y	Y	Y	Y	–	–	Y
Levels of warehouse	–	Central	Central	Central	Provincial, federal	Central, regional	–	–	Central, regional
Not-for-profit distribution centres	–	N	Y	N	Y	Y	–	–	Y
No. of licensed wholesalers	–	32	118	–	–	114	–	–	450
<b>Retail</b>									
No. of inhabitants per pharmacy	–	10 000	2515	2400	–	23 697	–	–	4260
No. of inhabitants per qualified pharmacist	–	1800	–	2400	19 500	–	–	–	7685

## Medicine prices, availability, affordability and price components

	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
<b>Retail</b>									
No. of pharmacies with qualified pharmacists	–	218	–	–	–	1477	–	–	225
<b>Private sector</b>									
No. of independent pharmacies	–	178	1590	7000	(Y)	1423	–	–	–
No. of chain pharmacies	–	40	–	–	(N)	54	–	–	–
Dispensing doctors (%)	–	0	–	N	80–90	N	–	–	N
Pharmacies in health facilities	–	Y	–	N	Y	Y	–	–	Y
<b>Government price policy</b>									
Medicines Regulatory Authority	–	Y	Y	Y	Y	Y	–	–	Y
Medicine prices regulated	–	Y	Y	Y	Y	Y	–	–	Y
Pricing is part of market authorization/ registration	–	N	–	Y	Y	Y	–	–	Y
Registration fees differ between brand and generic equivalents	–	N	–	N	Y	N	–	–	Y
Registration fees differ between imported and locally produced medicines	–	N	–	N	Y	N	–	–	N



	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
<b>Public sector</b>									
Margins/mark-ups in the distribution chain	–	N	N	N	N	Y	–	–	Y
Other fees or levies	–	N	N	N	N	Y	–	–	N
<b>Private retail sector</b>									
Maximum profit margins	–	Y	Y	Y	Y	Y	–	–	Y
Wholesale (%)	–	35	10	10	2	15	–	–	10
Retail (%)	–	35	30	30	15	20	–	–	20
Maximum retail price	–	Y	Y	N	Y	N	–	–	N
Professional dispensing fee	–	N	–	N	N	N	–	–	N
<b>Insurance, risk-sharing or prepayment schemes</b>									
Any health insurance, risk-sharing or prepayment schemes or revolving medicine funds	–	Y	Y	Y	Y	Y	–	–	N
All medicines covered	–	N	N	N	–	N	–	–	–
Excluded patient groups	–	Y	Y	–	–	N	–	–	–
Estimated population covered (%)	–	100		16	–	–	–	–	–

## Medicine prices, availability, affordability and price components

	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Official policy to supply all medicines free at primary health care level	–	Y	Y	N	Y	N	–	–	Y
User charges/ co-payments/ fees	–	–	–	N	–	Y	–	–	–
Medicines supplied free at hospitals	–	All	–	Some	–	Some	–	–	N

## Annex 2. Egypt and United Arab Emirates (Emirate of Abu Dhabi) case studies

### Medicine prices in Egypt and in Abu Dhabi, United Arab Emirates

#### Background and methodology

Two countries in the Eastern Mediterranean Region, Egypt and the United Arab Emirates (Emirate of Abu Dhabi), have undertaken surveys based on the WHO/HAI methodology. For both surveys, public procurement prices were collected but official price lists for retail pharmacies were used rather than actual field visits. Thus there was no confirmation of the price the patient would pay or robust determination of the availability of the medicines (if a medicine is unavailable, the price is irrelevant in terms of patient access to medicines). However, the results are presented in this annex to make them available for comparison to the other surveys with the considerations noted above. Country information for Egypt and the United Arab Emirates is shown in Table A1. The surveys were undertaken in July and August 2004 for Egypt and Abu Dhabi respectively. Both used MSH 2003 international reference prices. Egypt surveyed 34 medicines (30 core), and Abu Dhabi 29 (19). Supplementary medicines are shown in Table A2. MPR data are presented raw (not adjusted for year of survey or purchasing power parity) so caution must be exercised if making comparisons between countries, especially for patient prices.

#### Results

No availability data are presented since site visits were not conducted.

#### Public procurement

Egypt displayed relatively efficient public procurement with a MPR of 1.07 for lowest priced generics (LPGs). Originator brands (OBs) were not procured. In Abu Dhabi, public procurement MPRs for OBs and LPGs were 4.97 and 0.68 respectively. The efficient procurement of generics may be a reflection of the Gulf Cooperation Council's bulk procurement mechanism. Examples of procurement MPR data are given in Table A3.

#### Public sector

Public sector prices in Egypt were the same as procurement prices (based on official pricing policies). In the United Arab Emirates, nationals receive medicines free in the public sector whereas non-citizens need to obtain them from the private sector).

Table A1. Sociodemographic information

Indicator	Egypt	United Arab Emirates
Area (000 km <sup>2</sup> )	1001.5	83.6
Population (millions)	70.7	4.2
Population growth rate (%)	1.9	5.9
Urbanization (%)	43	79
Life expectancy (yrs)	71.4	72.6
GNP per capita (US\$)	1258	19 800
GDP per capita (US\$)	952	19 947
Infant mortality rate (deaths per 1000 live births)	20.5	8.1
Maternal mortality ratio (deaths per 100 000 live births)	62.7	1.0
No. of doctors (per 10 000 population)	24.3	16.9
No. of nurses (per 10 000 population)	33.5	35.2
No. of pharmacists (per 10 000 population)	12.5	4.1
Ministry of Health budget as % of government budget (%)	3.8	7.7
Total health expenditure per capita (US\$)	55	661
Total health expenditure as % of GDP (%)	5.8	3.3
General government expenditure on health (per capita) (US\$)	24	493
General government expenditure on health as % of total health expenditure (%)	42.6	74.7
Out-of-pocket expenditure as % of total health expenditure (%)	53.5	17.8

**Table A2. Supplementary medicines**

Egypt	United Arab Emirates
Atorvastatin 20 mg tab.,	Atorvastatin 20mg tab,
Cefotaxime 1 g inj.,	Amoxicillin+clavulate 250mg+125mg cap,
Ceftriaxone 0.5 g inj.,	Betamethasone val. 0.1% cream,
Enalapril 20 mg tab.,	Cephalexin 250mg tab/cap,
	Ciprofloxacin 250mg tab,
	Diclofenac 50mg tab,
	Fluconazole 150mg cap,
	Haloperidol 5mg tab,
	Miconazole nitrate 2% cream,
	Promethazine 25mg tab.

**Table A3. Procurement MPRs**

Medicine	Egypt	United Arab Emirates (Abu Dhabi)
<b>Originator brand</b>		
Amitriptyline	–	3.15
Carbamazepine	–	4.12
Diazepam	–	28.57
Nifedipine Retard	–	5.37
Phenytoin	–	4.97
<b>Generics</b>		
Beclometasone inh.	–	0.53
Captopril	0.41	0.30
Ciprofloxacin	1.71	-
Co-trimoxazole susp.	0.57	0.58
Glibenclamide	1.52	1.42
Ranitidine	0.74	0.36

### Private sector

Summary MPRs for OBs and LPGs in Egypt's private retail pharmacies were 2.88 and 1.82 respectively. The corresponding MPRs from Abu Dhabi study were 16.61 and 9.13. These differences probably relate to the large manufacturing base and (probable) wider use of generic medicines in Egypt, as well as to the size of the local private retail markets and local pricing regulations and policies. Examples of private retail MPR data are given in Table A4.

### Affordability

Based on the Egypt data, most standard treatments would be affordable from private retail pharmacies to a low-wage government worker if purchased as the lowest priced generic product, with the notable exceptions of fluoxetine treatment and omeprazole treatment (Table A5). Affordability would be improved if the medicines were sourced from public health facilities, assuming that the medicines were available (this was not assessed in these surveys). Most standard treatments would cost more than one days' wage in Abu Dhabi, which has relevance for non-citizens who have to purchase all outpatient medicines from private pharmacies.

### Discussion

From these data, both countries appear to have relatively efficient public procurement, although in Egypt some common generics have high procurement prices and the United Arab Emirates also procures expensive originator brands. Should generic medicines be available in the public or private sector in Egypt, their prices are generally acceptable and most standard treatments would be affordable to low-wage government workers. Non-citizens of the United Arab Emirates may find affordability a barrier to access to medicines since they are not able to access them through public health facilities and private pharmacy prices are often exorbitant, especially for generic medicines. Introduction of universal health insurance would help to provide essential medicines to disadvantaged groups (this is in the process of implementation) and examination of pricing policies may identify areas for improvement in the regulation of medicine prices in the private sector.

It would be beneficial if both countries could undertake a complete WHO/HAI medicines price survey so as to provide more robust baseline data; one is currently being finalized in the United Arab Emirates.

Table A4. Private sector MPRs

Medicine	Egypt	United Arab Emirates (Abu Dhabi)
<b>Originator brand</b>		
Atenolol	8.11	40.18
Carbamazepine	2.26	12.97
Ceftriaxone injection	2.88	10.63
Diclofenac	11.76	-
Phenytoin	2.25	7.85
Ranitidine	6.43	43.38
Salbutamol inhaler	0.82	6.30
<b>Generics</b>		
Captopril	1.82	8.92
Ciprofloxacin	11.32	-
Co-trimoxazole susp	0.72	6.04
Fluoxetine	3.54	46.98
Glibenclamide	2.44	32.01
Omeprazole	1.92	6.78

Table A5. Affordability of standard treatments in private retail pharmacies

Standard treatment	Affordability (no. of days' wages)		
	Type	Egypt	United Arab Emirates (Abu Dhabi)
<b>Arthritis</b>			
Diclofenac 25mg 1 tablet 2 times a day for 30 days	OB	2.3	-
	LPG	0.8	-
<b>Asthma</b>			
Salbutamol inhaler (1 inhaler over 30 days)	OB	1.0	2.7
	LPG	0.7	0.9
<b>Depression</b>			
Fluoxetine 200mg 2 capsules once a day for 30 days	OB	25.3	30.7
	LPG	3.9	18.4
<b>Diabetes</b>			
Metformin 500mg 1 tablet 3 times daily for 30 days	OB	0.5	1.6
	LPG	0.5	1.0
<b>Epilepsy</b>			
Carbamazepine 200mg 1 tablet 2 times daily for 30 days	OB	1.7	3.4
	LPG	1.1	1.6
<b>Hypertension</b>			
Nifedipine Retard 20mg 1 tablet daily for 30 days	OB	1.0	3.5
	LPG	0.8	2.2
<b>Peptic ulcer</b>			
Omeprazole 20mg 1 capsule daily for 30 days	OB	28.6	18.0
	LPG	7.1	8.8

## Annex 3. Secondary analysis calculations to standardize data

The work of Brenda Waning, Sumit Raybardhan and Bill MacLeod of Boston School of Public Health and Charu Garg of the Health Systems and Services Cluster of WHO in the development of these calculations is gratefully acknowledged.

### a) CPI-adjusted MPR: Correcting only for MSH reference year, exchange rate and inflation/deflation

#### 1. Pick a base year for comparison

2004 was chosen as the base year since most surveys were conducted in this year.

#### 2. Convert MPR back to country-specific prices

a. The MPR was multiplied by the survey year MSH reference price to get the price in US\$.

b. (2a) was multiplied by the currency exchange rate used in the survey to obtain the local currency unit price.

#### 3. Convert local currency to US dollars

The local currency value from (2b) was divided by the relevant country-specific IMF official exchange rate<sup>1</sup> for US dollars in the year the country survey was conducted. The period average exchange rate for the relevant survey year was used except in Yemen, where this was unavailable and the end of period exchange rate was used. [Please see the footnote in Section 2.1 regarding exchange rates in the Syrian Arab Republic and standardization of Syria data.]

#### 4. Adjust for inflation/deflation

If the US consumer price index<sup>2</sup> (CPI) in the survey year was inflated (higher) compared to that of the base year, then the medicine prices were deflated to base year prices (using a1 below). If the US CPI in the survey year was deflated (lower) compared to that of the base year, then the medicine prices were inflated to base year prices (using a2 below).

$$a1. \text{ Deflation factor} = \left[ 1 - \left( \frac{\text{SurveyYearCPI} - \text{BaseYearCPI}}{\text{BaseYearCPI}} \right) \right]$$

$$a2. \text{ Inflation factor} = \left[ 1 + \left( \frac{\text{BaseYearCPI} - \text{SurveyYearCPI}}{\text{BaseYearCPI}} \right) \right]$$

b. (4a1) or (4a2) was multiplied by the price from (3) above. This step had no effect on surveys performed in 2004.

### 5. Recalculate MPR

The adjusted country prices from (4) were divided by the MSH reference price from the year prior to the base year (2003) in keeping with the WHO/HAI methodology.

#### Notes

1. Source of national official exchange rate data: International Monetary Fund (IMF). International financial statistics (<http://ifs.apdi.net/imf>)

2. United States CPI used since all values in US dollars. Source of national CPI data: IMF. World economic outlook database <http://www.imf.org/external/pubs/ft/weo/2007/01/data/index.aspx>

### b) PPP-adjusted MPR: Standardized currency conversion plus purchasing power parity (PPP)

#### 1. Pick a base year for comparison

2004 was chosen as the base year since most surveys were conducted in this year and it would minimize variations introduced through these secondary calculations.

#### 2. Convert MPR back to country-specific prices

a. The MPR was multiplied by the appropriate MSH reference price to get the price in US dollars.

b. (2a) was multiplied by the currency exchange rate used in the survey to obtain the local currency unit price.

#### 3. Adjust for inflation/deflation

If the country consumer price index<sup>1</sup> (CPI) in the survey year was inflated (higher) compared to that of the base year, then the medicine prices were deflated to base year prices (using factor 3a1). If the country CPI in the survey year was deflated compared to that of the base year, then the medicine prices were inflated to base year prices (using factor 3a2).



$$\text{a1. Deflation factor} = \left[ 1 - \left( \frac{\text{SurveyYearCPI} - \text{BaseYearCPI}}{\text{BaseYearCPI}} \right) \right]$$

$$\text{a2. Inflation factor} = \left[ 1 + \left( \frac{\text{BaseYearCPI} - \text{SurveyYearCPI}}{\text{BaseYearCPI}} \right) \right]$$

b. (3a1) or (3a2) was multiplied by the price from (2) above

#### 4. Adjust for country wealth in international dollars (using PPP)

The price in local currency from (3) above was divided by the relevant country specific “Implied Purchasing Power Parity” (PPP) conversion rate<sup>2</sup> in the base year.

#### 5. Recalculate MPR

The adjusted country prices from (4) were divided by the MSH reference price from the year prior to the base year (in keeping with WHO/HAI methodology).

#### Notes

1. National CPI data used since working in national currencies. Source of national CPI data: IMF. World economic outlook database <http://www.imf.org/external/pubs/ft/weo/2007/01/data/index.aspx>

2. Source of PPP data: IMF. World economic outlook database <http://www.imf.org/external/pubs/ft/weo/2007/01/data/index.aspx>

## Annex 4. Availability data for individual medicines

(a) Public sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Acetylsalicylic acid	300 mg	cap/tab	–	4%	–	–	–	–	–	–
Aciclovir	200 mg	cap/tab	0%	4%	0%	5%	0%	0%	–	10%
Amiodarone	200 mg	cap/tab	–	–	0%	–	–	–	–	–
Amitriptyline	25 mg	cap/tab	6%	40%	0%	20%	0%	–	–	5%
Amoxicillin	250 mg	cap/tab	0%	12%	0%	0%	0%	–	–	0%
Amoxicillin	250 mg/5ml	suspension	–	–	–	0%	–	–	–	–
Amoxicillin	500 mg	cap/tab	–	–	0%	0%	–	–	–	0%
Atenolol	100 mg	cap/tab	–	–	–	0%	–	–	–	–
Atenolol	50 mg	cap/tab	0%	4%	0%	–	0%	15%	–	0%
Beclometasone	0.05 mg/dose	inhaler	6%	4%	0%	25%	0%	–	–	0%
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	5%	–	–	–	0%
Captopril	25 mg	cap/tab	0%	0%	0%	30%	0%	0%	–	0%
Carbamazepine	200 mg	cap/tab	6%	80%	0%	50%	0%	10%	–	0%
Carbimazole	5 mg	cap/tab	–	–	–	–	–	15%	–	–
Ceftriaxone	1 g/vial	injection	0%	12%	0%	50%	0%	0%	–	5%
Cephalexin	250 mg	cap/tab	–	0%	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	0%	–	–	–	–	–
Chloroquine	100 mg	cap/tab	–	–	–	0%	–	–	–	67%
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	0%
Chloroquine	40 mg/ml	injection	–	–	–	–	–	0%	–	–
Chlorpromazine	25 mg	cap/tab	–	12%	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	0%	0%	0%	30%	0%	–	–	0%
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	0%
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	5%
Co-trimoxazole	8+40 mg/ml	suspension	0%	4%	0%	0%	0%	0%	–	0%
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	–	0%
Diazepam	5 mg	cap/tab	0%	20%	0%	60%	0%	0%	–	24%

(a) Public sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Diclofenac	25 mg	cap/tab	0%	0%	0%	0%	0%	5%	–	0%
Diltiazem	60 mg	cap/tab	0%	–	–	–	–	–	–	–
Enalapril	20 mg	cap/tab	0%	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	0%	–	–
Fluconazole	150 mg	cap/tab	0%	–	–	15%	–	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	0%	–	–	0%
Fluoxetine	20 mg	cap/tab	0%	8%	0%	0%	0%	0%	–	0%
Fluphenazine	25 mg/ml	injection	0%	–	0%	80%	0%	–	–	0%
Furosemide	40 mg	cap/tab	0%	–	–	–	–	0%	–	–
Glibenclamide	5 mg	cap/tab	0%	4%	0%	0%	0%	0%	–	0%
Hydrochlorothiazide	25 mg	cap/tab	0%	0%	0%	–	0%	–	–	0%
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	5%	–	–
Ibuprofen	200 mg	cap/tab	–	0%	–	–	–	–	–	–
Ibuprofen	400 mg	cap/tab	–	–	0%	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	0%	0%	0%	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	0%	–	–
Insulin neutral	100 U/mL	injection	–	100%	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	0%	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	0%
Lisinopril	10 mg	cap/tab	–	72%	–	–	–	–	–	0%
Loperamide	2 mg	cap/tab	–	–	–	–	–	10%	–	–
Loratadine	10 mg	cap/tab	–	8%	–	–	–	–	–	–
Losartan	50 mg	cap/tab	0%	–	0%	0%	0%	–	–	0%
Lovastatin	20 mg	cap/tab	–	–	–	–	0%	–	–	0%
Mebendazole	100 mg	cap/tab	–	–	–	–	–	0%	–	5%
Metformin	500 mg	cap/tab	0%	52%	0%	25%	0%	0%	–	0%
Metformin	850 mg	cap/tab	–	–	–	–	–	–	–	0%

(a) Public sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Methyldopa	250 mg	cap/tab	0%	–	–	–	–	0%	–	–
Metronidazole	250 mg	cap/tab	–	–	0%	–	–	–	–	0%
Metronidazole	40 mg/ml	suspension	–	–	–	–	–	0%	–	–
Metronidazole	500 mg	cap/tab	–	–	–	–	–	–	–	–
Nevirapine	200 mg	cap/tab	–	–	0%	0%	0%	–	–	0%
Nifedipine Retard	20 mg	tab	0%	80%	0%	75%	0%	0%	–	19%
Omeprazole	20 mg	cap/tab	0%	0%	0%	0%	0%	0%	–	0%
Paracetamol	500 mg	cap/tab	–	0%	–	–	–	–	–	0%
Phenytoin	100 mg	cap/tab	28%	36%	0%	0%	0%	–	–	62%
Pravastatin	20 mg	cap/tab	–	–	–	–	–	–	–	0%
Promethazine	25 mg	cap/tab	–	–	–	–	–	0%	–	–
Pyrazinamide	500 mg	cap/tab	–	–	–	0%	–	–	–	–
Ranitidine	150 mg	cap/tab	0%	24%	0%	0%	0%	0%	–	0%
Risperidone	2 mg	cap/tab	–	–	–	–	–	–	–	0%
Salbutamol	0.1 mg/dose	inhaler	0%	88%	0%	10%	0%	20%	–	29%
Simvastatin	20 mg	cap/tab	6%	–	–	–	–	–	–	0%
Streptomycin	1 g/vial	injection	–	–	–	0%	–	–	–	–
Sulfadoxine + Pyrimethamine	500+25 mg	cap/tab	–	–	–	–	0%	5%	–	0%
Valproic Acid	200 mg	cap/tab	–	–	–	15%	–	–	–	–
Zidovudine	100 mg	cap/tab	–	–	0%	0%	0%	–	–	–

(b) Public sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Acetylsalicylic acid	300 mg	cap/tab	–	60%	–	–	–	–	–	–
Aciclovir	200 mg	cap/tab	28%	28%	0%	20%	3%	5%	–	0%
Amiodarone	200 mg	cap/tab	–	–	10%	–	–	–	–	–
Amitriptyline	25 mg	cap/tab	11%	0%	5%	0%	27%	30%	–	5%
Amoxicillin	250 mg	cap/tab	78%	100%	0%	0%	67%	100%	–	20%
Amoxicillin	250 mg/5ml	suspension	–	–	–	100%	–	–	–	–
Amoxicillin	500 mg	cap/tab	–	–	20%	100%	–	–	–	–
Atenolol	100 mg	cap/tab	–	–	–	0%	–	–	–	–
Atenolol	50 mg	cap/tab	17%	92%	10%	–	67%	35%	–	0%
Beclometasone	0.05 mg/dose	inhaler	28%	92%	45%	65%	0%	–	–	0%
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	95%	–	–	–	–
Captopril	25 mg	cap/tab	61%	96%	15%	0%	57%	30%	–	30%
Carbamazepine	200 mg	cap/tab	67%	0%	10%	25%	0%	30%	–	5%
Carbimazole	5 mg	cap/tab	–	–	–	–	–	30%	–	–
Ceftriaxone	1 g/vial	injection	11%	8%	0%	50%	17%	30%	–	25%
Cephalexin	250 mg	cap/tab	–	100%	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	20%	–	–	–	–	–
Chloramphenicol	0.5 %	eye drops	–	–	–	–	–	45%	–	–
Chloroquine	100 mg	cap/tab	–	–	–	0%	–	–	–	–
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	70%
Chloroquine	40 mg/ml	injection	–	–	–	–	–	90%	–	–
Chlorothiazide	500 mg	cap/tab	–	–	–	–	–	–	–	48%
Chlorphenamine	4 mg	cap/tab	–	–	–	–	–	90%	–	–
Chlorpromazine	25 mg	cap/tab	–	0%	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	78%	12%	0%	75%	50%	55%	–	15%
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	5%
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	10%

(b) Public sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Co-trimoxazole	8+40 mg/ml	suspension	83%	100%	75%	100%	30%	100%	–	20%
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	100%	–
Diazepam	5 mg	cap/tab	56%	0%	0%	0%	60%	95%	–	15%
Diclofenac	25 mg	cap/tab	0%	88%	0%	0%	33%	40%	–	10%
Diltiazem	60 mg	cap/tab	44%	–	–	–	–	–	–	–
Doxycycline	100 mg	cap/tab	–	–	–	–	–	100%	–	–
Enalapril	20 mg	cap/tab	6%	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	100%	–	–
Fluconazole	150 mg	cap/tab	17%	–	–	0%	–	25%	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	3%	–	–	5%
Fluoxetine	20 mg	cap/tab	22%	12%	0%	0%	7%	0%	–	0%
Fluphenazine	25 mg/ml	injection	0%	–	0%	0%	3%	–	–	0%
Furosemide	40 mg	cap/tab	72%	–	–	–	–	90%	–	–
Gentamicin	40 mg/ml	injection	–	–	–	–	–	50%	–	–
Glibenclamide	5 mg	cap/tab	78%	72%	10%	100%	40%	100%	–	5%
Hydrochlorothiazide	25 mg	cap/tab	6%	16%	0%	0%	0%	0%	–	0%
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	100%	–	–
Ibuprofen	200 mg	cap/tab	–	16%	–	–	–	100%	–	–
Ibuprofen	400 mg	cap/tab	–	–	30%	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	0%	0%	0%	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	75%	–	–
Insulin neutral	100 U/mL	injection	–	0%	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	0%	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	0%
Lisinopril	10 mg	cap/tab	–	0%	–	–	–	–	–	0%
Loperamide	2 mg	cap/tab	–	–	–	–	–	50%	–	–
Loratadine	10 mg	cap/tab	–	52%	–	–	–	–	–	–



(b) Public sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Losartan	50 mg	cap/tab	0%	–	0%	0%	0%	15%	–	0%
Lovastatin	20 mg	cap/tab	–	–	–	–	0%	–	–	0%
Mebendazole	100 mg	cap/tab	–	–	–	–	–	85%	–	0%
Metformin	500 mg	cap/tab	0%	36%	0%	5%	73%	25%	–	0%
Metformin	850 mg	cap/tab	–	–	–	–	–	–	100%	–
Methyldopa	250 mg	cap/tab	89%	–	–	–	–	95%	–	–
Metronidazole	250 mg	cap/tab	–	–	45%	–	–	–	–	15%
Metronidazole	40 mg/ml	suspension	–	–	–	–	–	100%	–	–
Metronidazole	500 mg	cap/tab	–	–	–	–	–	–	–	–
Nevirapine	200 mg	cap/tab	–	–	0%	0%	0%	–	–	0%
Nifedipine Retard	20 mg	tab	28%	0%	5%	0%	0%	35%	–	0%
Nystatin	100.000 U/mL	suspension	–	–	–	–	–	95%	–	–
Omeprazole	20 mg	cap/tab	28%	20%	0%	60%	13%	35%	–	5%
Paracetamol	500 mg	cap/tab	–	100%	–	–	–	–	–	–
Phenytoin	100 mg	cap/tab	0%	0%	0%	0%	0%	20%	–	0%
Pravastatin	20 mg	cap/tab	–	–	–	–	–	–	–	–
Promethazine	25 mg	cap/tab	–	–	–	–	–	85%	–	–
Pyrazinamide	500 mg	cap/tab	–	–	–	95%	–	–	–	–
Ranitidine	150 mg	cap/tab	50%	96%	5%	0%	3%	35%	–	20%
Risperidone	2 mg	cap/tab	–	–	–	–	–	–	–	0%
Salbutamol	0.1 mg/dose	inhaler	6%	0%	10%	95%	3%	35%	–	0%
Salbutamol	4 mg	cap/tab	–	–	–	–	–	90%	–	–
Simvastatin	20 mg	cap/tab	0%	–	–	–	–	–	–	–
Streptomycin	1 g/vial	injection	–	–	–	95%	–	–	–	–
Sulfadoxine + Pyrimethamine	500+25 mg	cap/tab	–	–	–	–	3%	100%	–	10%
Theophylline Retard	300 mg	cap/tab	–	–	–	–	–	–	–	81%
Valproic Acid	200 mg	cap/tab	–	–	–	55%	–	–	–	–

(b) Public sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Zidovudine	100 mg	cap/tab	–	–	0%	0%	0%	–	–	–
(c) Private sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Acetylsalicylic acid	300 mg	cap/tab	–	84%	–	–	–	–	–	–
Aciclovir	200 mg	cap/tab	40%	60%	55%	70%	8%	15%	98%	20%
Amiodarone	200 mg	cap/tab	–	–	95%	–	–	–	–	–
Amitriptyline	25 mg	cap/tab	0%	16%	98%	95%	15%	–	0%	60%
Amoxicillin	250 mg	cap/tab	60%	36%	0%	40%	96%	–	–	5%
Amoxicillin	250 mg/5ml	suspension	–	–	–	100%	–	–	–	–
Amoxicillin	500 mg	cap/tab	–	–	100%	95%	–	–	–	–
Atenolol	100 mg	cap/tab	–	–	–	100%	–	–	–	–
Atenolol	50 mg	cap/tab	80%	96%	100%	–	85%	55%	91%	90%
Beclometasone	0.05 mg/dose	inhaler	75%	56%	85%	5%	21%	–	–	0%
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	100%	–	–	–	–
Captopril	25 mg	cap/tab	60%	88%	98%	95%	77%	50%	0%	100%
Carbamazepine	200 mg	cap/tab	75%	84%	98%	100%	85%	65%	95%	95%
Carbamazole	5 mg	cap/tab	–	–	–	–	–	55%	–	–
Ceftriaxone	1 g/vial	injection	60%	84%	65%	75%	65%	35%	–	75%
Cephalexin	250 mg	cap/tab	–	8%	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	98%	–	–	–	–	–
Chloroquine	100 mg	cap/tab	–	–	–	80%	–	–	–	95%
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	5%
Chloroquine	40 mg/ml	injection	–	–	–	–	–	0%	–	–
Chlorpromazine	25 mg	cap/tab	–	0%	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	35%	96%	100%	100%	65%	–	0%	45%
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	65%

(c) Private sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	95%
Co-trimoxazole	8+40 mg/ml	suspension	65%	0%	95%	100%	33%	50%	98%	70%
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	–	0%
Diazepam	5 mg	cap/tab	80%	0%	73%	65%	65%	35%	100%	55%
Diclofenac	25 mg	cap/tab	55%	84%	98%	100%	81%	45%	100%	20%
Diltiazem	60 mg	cap/tab	70%	–	–	–	–	–	–	–
Enalapril	20 mg	cap/tab	60%	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	0%	–	–
Fluconazole	150 mg	cap/tab	70%	–	–	100%	–	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	4%	–	–	45%
Fluoxetine	20 mg	cap/tab	55%	48%	100%	85%	29%	0%	–	5%
Fluphenazine	25 mg/ml	injection	15%	–	65%	55%	52%	–	–	30%
Furosemide	40 mg	cap/tab	80%	–	–	–	–	0%	–	–
Gilbenclamide	5 mg	cap/tab	80%	100%	100%	100%	96%	5%	–	95%
Hydrochlorothiazide	25 mg	cap/tab	5%	0%	0%	–	0%	–	–	0%
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	45%	–	–
Ibuprofen	200 mg	cap/tab	–	0%	–	–	–	–	–	–
Ibuprofen	400 mg	cap/tab	–	–	95%	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	3%	0%	0%	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	0%	–	–
Insulin neutral	100 U/mL	injection	–	12%	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	95%	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	10%
Lisinopril	10 mg	cap/tab	–	92%	–	–	–	–	–	90%
Loperamide	2 mg	cap/tab	–	–	–	–	–	25%	–	–
Loratadine	10 mg	cap/tab	–	96%	–	–	–	–	100%	–
Losartan	50 mg	cap/tab	55%	–	93%	100%	40%	–	–	15%

(c) Private sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Lovastatin	20 mg	cap/tab	–	–	–	–	29%	–	0%	–	0%
Mebendazole	100 mg	cap/tab	–	–	–	–	–	60%	–	–	95%
Metformin	500 mg	cap/tab	90%	72%	0%	100%	83%	35%	–	–	30%
Metformin	850 mg	cap/tab	–	–	–	–	–	–	–	100%	–
Methyldopa	250 mg	cap/tab	20%	–	–	–	–	0%	–	–	–
Metronidazole	250 mg	cap/tab	–	–	100%	–	–	–	–	–	35%
Metronidazole	40 mg/ml	suspension	–	–	–	–	–	20%	–	–	–
Metronidazole	500 mg	cap/tab	–	–	–	–	–	–	93%	–	–
Nevirapine	200 mg	cap/tab	–	–	0%	0%	0%	–	–	–	0%
Nifedipine Retard	20 mg	tab	5%	96%	95%	85%	58%	0%	–	100%	35%
Omeprazole	20 mg	cap/tab	65%	88%	45%	90%	54%	5%	–	5%	50%
Paracetamol	500 mg	cap/tab	–	96%	–	–	–	–	97%	100%	–
Phenytoin	100 mg	cap/tab	65%	84%	85%	45%	0%	–	–	81%	50%
Pravastatin	20 mg	cap/tab	–	–	–	–	–	–	–	71%	–
Promethazine	25 mg	cap/tab	–	–	–	–	–	20%	–	–	–
Pyrazinamide	500 mg	cap/tab	–	–	–	30%	–	–	–	–	–
Ranitidine	150 mg	cap/tab	80%	92%	100%	95%	94%	5%	93%	98%	100%
Risperidone	2 mg	cap/tab	–	–	–	–	–	–	–	–	60%
Salbutamol	0.1 mg/dose	inhaler	80%	96%	98%	100%	90%	75%	–	100%	90%
Simvastatin	20 mg	cap/tab	55%	–	–	–	–	–	–	95%	–
Streptomycin	1 g/vial	injection	–	–	–	0%	–	–	–	–	–
Sulfadoxine +Pyrimethamine	500+ 25 mg	cap/tab	–	–	–	–	94%	65%	–	–	95%
Valproic Acid	200 mg	cap/tab	–	–	–	100%	–	–	–	–	–
Zidovudine	100 mg	cap/tab	–	–	3%	0%	0%	–	–	–	–

(d) Private sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	–	0%	–	–	–	–	–	–	–
Aciclovir	200 mg	cap/tab	80%	0%	55%	60%	10%	50%	98%	0%	70%
Amiodarone	200 mg	cap/tab	–	–	83%	–	–	–	–	–	–
Amitriptyline	25 mg	cap/tab	80%	0%	0%	0%	2%	85%	100%	2%	70%
Amoxicillin	250 mg	cap/tab	70%	0%	0%	50%	83%	100%	95%	–	75%
Amoxicillin	250 mg/5ml	suspension	–	–	–	100%	–	–	–	–	–
Amoxicillin	500 mg	cap/tab	–	–	100%	100%	–	–	–	100%	–
Atenolol	100 mg	cap/tab	–	–	–	95%	–	–	–	–	–
Atenolol	50 mg	cap/tab	95%	56%	100%	–	58%	100%	97%	100%	95%
Beclometasone	0.05 mg/dose	inhaler	35%	4%	98%	50%	0%	–	97%	95%	35%
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	0%	–	–	–	63%	–
Captopril	25 mg	cap/tab	90%	16%	100%	70%	50%	85%	98%	100%	100%
Carbamazepine	200 mg	cap/tab	60%	0%	28%	0%	33%	100%	98%	95%	100%
Carbamazole	5 mg	cap/tab	–	–	–	–	–	75%	–	–	–
Ceftriaxone	1 g/vial	injection	95%	64%	48%	55%	54%	80%	98%	12%	100%
Cephalexin	250 mg	cap/tab	–	0%	–	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	50%	–	–	–	–	–	–
Chloramphenicol	100 mg	cap/tab	–	–	–	0%	–	–	–	0%	–
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	–	95%
Chloroquine	40 mg/ml	injection	–	–	–	–	–	95%	–	–	–
Chloroquine	500 mg	cap/tab	–	–	–	–	–	–	–	68%	–
Chlorothiazide	4 mg	cap/tab	–	–	–	–	–	100%	–	–	–
Chlorphenamine	25 mg	cap/tab	–	0%	–	–	–	–	–	–	–
Chlorpromazine	500 mg	cap/tab	95%	80%	100%	100%	67%	100%	100%	100%	100%
Ciprofloxacin	250 mg	cap/tab	–	–	–	–	–	–	–	–	95%
Clarithromycin	500+125 mg	cap/tab	–	–	–	–	–	–	–	–	95%
Co-amoxiclav	8+40 mg/ml	suspension	95%	40%	78%	95%	81%	95%	98%	98%	100%

(d) Private sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Co-trimoxazole	4 mg/ml	injection	–	–	–	–	–	–	–	100%
Dexamethasone	5 mg	cap/tab	60%	0%	0%	0%	31%	80%	100%	80%
Diazepam	25 mg	cap/tab	75%	80%	100%	100%	31%	95%	100%	95%
Diclofenac	60 mg	cap/tab	55%	–	–	–	–	–	100%	–
Diltiazem	100 mg	cap/tab	–	–	–	–	–	100%	–	–
Doxycycline	20 mg	cap/tab	95%	–	–	–	–	–	–	–
Enalapril	250 mg	cap/tab	–	–	–	–	–	90%	–	–
Erythromycin	150 mg	cap/tab	85%	–	–	100%	–	60%	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	4%	–	97%	80%
Fluconazole	20 mg	cap/tab	65%	4%	98%	90%	58%	35%	98%	80%
Fluoxetine	25 mg/ml	injection	0%	–	0%	0%	8%	–	–	10%
Fluphenazine	40 mg	cap/tab	90%	–	–	–	–	100%	98%	–
Furosemide	40 mg/ml	injection	–	–	–	–	–	90%	–	–
Gentamicin	5 mg	cap/tab	95%	44%	98%	100%	50%	100%	98%	100%
Glibenclamide	25 mg	cap/tab	40%	0%	85%	95%	0%	55%	–	0%
Hydrochlorothiazide										
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	100%	–	–
Ibuprofen	200 mg	cap/tab	–	100%	–	–	–	90%	–	–
Ibuprofen	400 mg	cap/tab	–	–	98%	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	0%	0%	0%	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	100%	–	–
Insulin neutral	100 U/mL	injection	–	0%	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	98%	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	75%
Lisinopril	10 mg	cap/tab	–	0%	–	–	–	–	–	90%
Loperamide	2 mg	cap/tab	–	–	–	–	–	65%	–	–
Loratadine	10 mg	cap/tab	–	88%	–	–	–	–	100%	–
Losartan	50 mg	cap/tab	65%	–	35%	0%	13%	50%	97%	25%

(d) Private sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Lovastatin	20 mg	cap/tab	-	-	-	-	13%	-	97%	0%
Mebendazole	100 mg	cap/tab	-	-	-	-	-	85%	-	100%
Metformin	500 mg	cap/tab	80%	28%	83%	45%	44%	80%	98%	90%
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	-
Methyldopa	250 mg	cap/tab	70%	-	-	-	-	80%	-	-
Metronidazole	250 mg	cap/tab	-	-	100%	-	-	-	-	95%
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	100%	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	98%	-
Nevirapine	200 mg	cap/tab	-	-	0%	0%	0%	-	-	0%
Nifedipine Retard	20 mg	tab	60%	0%	98%	75%	6%	100%	-	90%
Nystatin	100.000 U/mL	suspension	-	-	-	-	-	90%	-	-
Omeprazole	20 mg	cap/tab	95%	100%	95%	100%	71%	90%	97%	95%
Paracetamol	500 mg	cap/tab	-	92%	-	-	-	-	98%	-
Phenytoin	100 mg	cap/tab	0%	0%	5%	0%	10%	95%	98%	0%
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	95%	-	-
Pyrazinamide	500 mg	cap/tab	-	-	-	5%	-	-	-	-
Ranitidine	150 mg	cap/tab	85%	88%	93%	100%	35%	95%	98%	100%
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	80%
Salbutamol	0.1 mg/dose	inhaler	75%	12%	98%	100%	13%	80%	93%	100%
Salbutamol	4 mg	cap/tab	-	-	-	-	-	100%	-	-
Simvastatin	20 mg	cap/tab	85%	-	-	-	-	-	-	-
Streptomycin	1 g/vial	injection	-	-	-	0%	-	-	-	-
Sulfadoxine + Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	42%	95%	-	55%
Theophylline Retard	300 mg	cap/tab	-	-	-	-	-	-	-	100%
Valproic Acid	200 mg	cap/tab	-	-	-	0%	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	0%	0%	0%	-	-	-



## Annex 5. Median price ratios for individual medicines

Part A gives individual medicine MPRs adjusted for inflation and exchange rates, standardized to MSH2003 reference prices and international dollars. They are not adjusted for purchasing power parity (PPP). Part B gives individual medicine MPRs adjusted for inflation and exchange rates, standardized to MSH2003 reference prices and adjusted for purchasing power parity (PPP).

### Part A: Individual medicine MPRs (CPI-adjusted)

MPR data corrected for inflation, exchange rates and standardised to MSH 2003 reference prices (base year 2004). Not adjusted for PPP.

(a) Procurement – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	0.27	-	-	7.73	-	-	9.25	10.16	-
Amiodarone	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	3.42	-	4.45	6.74	-	-	2.88	2.47	-
Amoxicillin	250 mg	cap/tab	0.86	-	-	-	-	-	-	-	-
Amoxicillin	250mg/5ml	susp	-	-	-	-	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	100mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	-	-	-	-	-	-	10.93	-	-
Beclomethasone	0.05 mg/dose	inhaler	-	-	-	2.33	-	-	-	-	-
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	3.58	-	-	-	-	-
Captopril	25 mg	cap/tab	-	-	-	37.51	3.65	-	-	-	-
Carbamazepine	200 mg	cap/tab	-	4.09	-	6.31	-	-	6.96	-	-
Carbamazole	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ceftriaxone	1 g/vial	injection	-	-	-	6.40	-	-	-	-	-
Cephalexin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Cephalexin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	5.16	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	40 mg/ml	injection	-	-	-	-	-	-	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	-	-	-	66.66	-	-	-	-	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-amoxiclav	500 + 125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8 + 40 mg/ml	suspension	-	-	-	-	-	-	3.32	7.32	-
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	-	-

(a) Procurement – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Diazepam	5 mg	cap/tab	2.46	–	–	10.88	–	–	11.38	7.99	–
Diclofenac	25 mg	cap/tab	–	–	–	19.02	–	–	18.76	–	–
Diltiazem	60 mg	cap/tab	0.72	–	–	–	–	–	–	–	–
Enalapril	20 mg	cap/tab	1.38	–	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Fluconazole	150 mg	cap/tab	2.25	–	–	–	–	–	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	–	–	–	88.67	–
Fluoxetine	20 mg	cap/tab	0.58	–	–	–	–	–	–	43.20	–
Fluphenazine	25 mg/ml	injection	2.03	–	–	3.70	–	–	–	–	–
Furosemide	40 mg	cap/tab	2.05	–	–	–	–	–	–	–	–
Glibenclamide	5 mg	cap/tab	–	–	–	–	–	–	–	–	–
Hydrochlorothiazide	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ibuprofen	200 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ibuprofen	400 mg	cap/tab	–	–	–	–	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	1.56	2.12	–	–	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Insulin neutral	100 U/mL	injection	–	0.61	–	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	–	–	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	–	–
Lisinopril	10 mg	cap/tab	–	0.77	–	–	–	–	–	–	–
Loperamide	2 mg	cap/tab	–	–	–	–	–	–	–	–	–
Loratadine	10 mg	cap/tab	–	–	–	–	–	–	11.95	–	–
Losartan	50 mg	cap/tab	–	–	–	–	–	–	–	–	–
Lovastatin	20 mg	cap/tab	–	–	–	–	–	–	–	–	–
Mebendazole	100 mg	cap/tab	–	–	–	–	–	–	–	–	–

(a) Procurement – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Metformin	500 mg	cap/tab	-	-	-	1.13	1.00	-	-	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	-	-
Methyldopa	250 mg	cap/tab	0.68	-	-	-	-	-	-	-	-
Metronidazole	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	-	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	9.97	-	-
Nevirapine	200 mg	cap/tab	-	-	13.99	5.12	-	-	-	-	-
Nifedipine Retard	20 mg	tab	-	5.50	-	18.99	-	-	-	-	-
Omeprazole	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Paracetamol	500 mg	cap/tab	-	-	-	-	-	-	19.92	-	-
Phenytoin	100 mg	cap/tab	6.54	5.26	5.81	-	-	-	-	4.46	-
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Pyrazinamide	500mg	cap/tab	-	-	-	1.06	-	-	-	-	-
Ranitidine	150 mg	cap/tab	-	-	-	-	-	-	6.55	-	-
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	-	1.02	-	2.32	-	-	-	0.69	-
Simvastatin	20 mg	cap/tab	0.85	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	inj	-	-	-	3.73	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Valproic acid	200mg	cap/tab	-	-	-	1.33	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	10.59	0.87	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / Form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	8.49	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	-	1.44	4.14	4.98	0.45	-	2.12	-	-
Amiodarone	200 mg	cap/tab	-	-	1.10	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	3.12	-	-	0.73	-	2.62	2.38	0.83
Amoxicillin	250 mg	cap/tab	-	1.18	-	-	-	0.58	2.31	-	-
Amoxicillin	250mg/ml	susp	-	-	-	1.10	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	1.57	1.25	-	-	-	1.24	-
Atenolol	100mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	0.66	2.19	3.97	-	0.83	-	3.21	3.35	-
Beclometasone	0.05 mg/dose	inhaler	1.37	0.50	0.57	0.73	-	-	0.59	0.66	0.54
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	-	-	-	-	1.55	-
Captopril	25 mg	cap/tab	0.22	0.26	1.13	12.75	0.32	-	1.58	1.19	-
Carbamazepine	200 mg	cap/tab	0.74	-	2.55	5.20	0.65	-	1.90	1.41	0.70
Carbamazole	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ceftriaxone	1 g/vial	injection	0.29	1.80	-	3.67	0.25	-	0.94	0.77	-
Cephalexin	250 mg	cap/tab	-	0.39	-	-	-	-	-	-	-
Cephalexin	500 mg	cap/tab	-	-	0.75	-	-	-	-	-	-
Chloramphenicol	0.5 %	eye drops	-	-	-	-	-	0.15	-	-	-
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	40 mg/ml	injection	-	-	-	-	-	0.30	-	-	-
Chlorothiazide	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chlorphenamine	4 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	0.66	0.85	-	25.35	1.08	0.09	1.44	4.98	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / Form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Co-amoxiclav	500 + 125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8 + 40 mg/ml	suspension	2.35	0.61	1.27	1.96	0.47	0.07	1.16	1.07	-
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	0.63	-
Diazepam	5 mg	cap/tab	-	18.42	-	-	0.26	1.31	3.42	3.58	-
Diclofenac	25 mg	cap/tab	-	0.67	-	-	-	-	3.91	-	-
Diltiazem	60 mg	cap/tab	-	-	-	-	-	-	2.45	-	-
Doxycycline	100 mg	cap/tab	-	-	-	-	-	0.44	-	-	-
Enalapril	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	0.44	-	-	-
Fluconazole	150 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	2.35	-	-
Fluoxetine	20 mg	cap/tab	-	7.48	13.44	-	-	-	1.42	21.73	-
Fluphenazine	25 mg/ml	injection	-	-	-	-	0.74	-	-	-	-
Furosemide	40 mg	cap/tab	-	-	-	-	-	0.69	3.16	-	-
Gentamicin	40 mg/ml	injection	-	-	-	-	-	0.08	-	-	-
Glibenclamide	5 mg	cap/tab	0.69	4.96	1.45	1.12	0.78	-	1.56	0.96	0.41
Hydrochlorothiazide	25 mg	cap/tab	2.74	31.99	-	7.93	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	0.48	-	-	-
Ibuprofen	200 mg	cap/tab	-	2.43	-	-	-	0.78	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	0.90	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	1.31	-	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	0.35	-	-	-	-	-	-
Levothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / Form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Loperamide	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Loratadine	10 mg	cap/tab	-	6.34	-	-	-	-	2.95	-	-
Losartan	50 mg	cap/tab	0.13	-	-	-	-	-	0.10	-	-
Lovastatin	20 mg	cap/tab	-	-	-	-	-	-	2.19	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metformin	500 mg	cap/tab	0.39	0.37	-	-	0.38	-	1.34	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	0.41	-
Methyldopa	250 mg	cap/tab	-	-	-	-	-	0.50	-	-	-
Metronidazole	250 mg	cap/tab	-	-	5.50	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	0.20	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	4.74	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	0.32	-	3.30	-	-	-	-	1.11	-
Nystatin	10-0 U/mL	suspension	-	-	-	-	-	0.01	-	-	-
Onmeprazole	20 mg	cap/tab	0.16	1.12	0.85	1.10	-	-	1.09	4.31	-
Paracetamol	500 mg	cap/tab	-	1.41	-	-	-	-	4.12	2.05	-
Phenytoin	100 mg	cap/tab	-	-	-	-	-	-	1.68	-	0.50
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	0.29	-	-	-
Pyrazinamide	500mg	cap/tab	-	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	0.33	0.40	3.29	-	0.53	-	1.68	-	-
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	0.57	-	1.06	1.54	-	-	0.62	1.05	-
Salbutamol	4 mg	cap/tab	-	-	-	-	-	0.35	-	-	-
Simvastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	inj	-	-	-	-	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / Form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	0.83	0.18	-	-	1.66
Theophylline retard	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
(c) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amiodarone	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amoxicillin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amoxicillin	250mg/ml	susp	-	-	-	-	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	100mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	-	-	-	-	-	-	-	-	-
Beclometasone	0.05 mg/dose	inhaler	-	-	-	-	-	-	-	-	-
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	-	-	-	-	-	-
Captopril	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Carbamazepine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Carbamazole	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ceftriaxone	1 g/vial	injection	-	-	-	-	-	-	-	-	-
Cephalexin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Cephalexin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-



(c) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	40 mg/ml	injection	-	-	-	-	-	-	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-amoxiclav	500+125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8+40 mg/ml	suspension	-	-	-	-	-	-	-	-	-
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	-	-
Diazepam	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Diclofenac	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Diltiazem	60 mg	cap/tab	-	-	-	-	-	-	-	-	-
Enalapril	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluconazole	150 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluoxetine	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluphenazine	25 mg/ml	injection	-	-	-	-	-	-	-	-	-
Furosemide	40 mg	cap/tab	-	-	-	-	-	-	-	-	-
Glibenclamide	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Hydrochlorothiazide	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ibuprofen	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	-	-	-	-

(c) Public sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	-	-	-	-	-	-
Levothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-
Loperamide	2 mg	cap/tab	-	-	-	-	-	-	-	-
Loratadine	10 mg	cap/tab	-	-	-	-	-	-	-	-
Losartan	50 mg	cap/tab	-	-	-	-	-	-	-	-
Lovastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	-	-	-
Metformin	500 mg	cap/tab	-	-	-	-	-	-	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	-
Methyldopa	250 mg	cap/tab	-	-	-	-	-	-	-	-
Metronidazole	250 mg	cap/tab	-	-	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	-	-	-	-	-	-	-	-
Omeprazole	20 mg	cap/tab	-	-	-	-	-	-	-	-
Paracetamol	500 mg	cap/tab	-	-	-	-	-	-	-	-
Phenytoin	100 mg	cap/tab	5.96	-	-	-	-	-	-	-
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	-	-	-
Pyrazinamide	500 mg	cap/tab	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	-	-	-	-	-	-	-	-
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	-	-	-	-	-	3.54	-	-

(c) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Simvastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	inj	-	-	-	-	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
(d) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	0.40	-	-	-	-	-	-	-	-
Amiodarone	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	-	-	-	-	6.52	-	-	-
Amoxicillin	250 mg	cap/tab	1.13	-	-	-	-	2.31	-	-	1.24
Amoxicillin	250mg/ml	susp	-	-	-	-	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	100mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	-	-	-	-	-	5.67	-	-	-
Beclometasone	0.05 mg/dose	inhaler	0.63	-	-	-	-	-	-	-	-
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	-	-	-	-	-	-
Captopril	25 mg	cap/tab	0.29	-	-	-	-	4.51	-	-	0.55
Carbamazepine	200 mg	cap/tab	0.85	-	-	-	-	4.19	-	-	-
Carbamazole	5 mg	cap/tab	-	-	-	-	-	2.06	-	-	-
Ceftriaxone	1 g/vial	injection	-	-	-	-	-	2.45	-	-	1.02
Cephalexin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-

(d) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Cephalexin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloramphenicol	0.5 %	eye drops	-	-	-	-	-	1.65	-	-	-
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	1.21
Chloroquine	40 mg/ml	injection	-	-	-	-	-	2.04	-	-	-
Chlorothiazide	500mg	cap/tab	-	-	-	-	-	-	-	-	-
Chlorphenamine	4 mg	cap/tab	-	-	-	-	-	7.08	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	1.07	-	-	-	-	3.74	-	-	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-amoxiclav	500+125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8 + 40 mg/ml	suspension	1.33	-	-	-	-	1.65	-	-	1.25
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	-	-
Diazepam	5 mg	cap/tab	2.41	-	-	-	-	5.66	-	-	-
Diclofenac	25 mg	cap/tab	-	-	-	-	-	7.38	-	-	-
Diltiazem	60 mg	cap/tab	0.86	-	-	-	-	-	-	-	-
Doxycycline	100 mg	cap/tab	-	-	-	-	-	3.82	-	-	-
Enalapril	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	2.43	-	-	-
Fluconazole	150 mg	cap/tab	-	-	-	-	-	52.36	-	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluoxetine	20 mg	cap/tab	1.72	-	-	-	-	-	-	-	-
Fluphenazine	25 mg/ml	injection	-	-	-	-	-	-	-	-	-
Furosemide	40 mg	cap/tab	2.64	-	-	-	-	2.06	-	-	-
Gentamicin	40 mg/ml	injection	-	-	-	-	-	6.79	-	-	-
Glibenclamide	5 mg	cap/tab	0.84	-	-	-	-	6.13	-	-	-

(d) Public sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Hydrochlorothiazide	25 mg	cap/tab	-	-	-	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	1.48	-	-
Ibuprofen	200 mg	cap/tab	-	-	-	-	-	6.30	-	-
Ibuprofen	400 mg	cap/tab	-	-	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	9.12	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	-	-	-	-	-	-
Levothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-
Loperamide	2 mg	cap/tab	-	-	-	-	-	6.72	-	-
Loratadine	10 mg	cap/tab	-	-	-	-	-	-	-	-
Losartan	50 mg	cap/tab	-	-	-	-	-	-	-	-
Lovastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	16.13	-	-
Metformin	500 mg	cap/tab	-	-	-	-	-	6.68	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	-
Methyldopa	250 mg	cap/tab	0.95	-	-	-	-	1.40	-	-
Metronidazole	250 mg	cap/tab	-	-	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	3.06	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	0.33	-	-	-	-	6.61	-	-
Nystatin	10–0 U/mL	suspension	-	-	-	-	-	1.50	-	-
Omeprazole	20 mg	cap/tab	0.24	-	-	-	-	1.30	-	-
Paracetamol	500 mg	cap/tab	-	-	-	-	-	-	-	-

(d) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Phenytoin	100 mg	cap/tab	-	-	-	-	-	6.26	-	-	-
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	4.96	-	-	-
Pyrazinamide	500mg	cap/tab	-	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	0.62	-	-	-	-	4.38	-	-	0.52
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	-	-	-	-	-	0.92	-	-	-
Salbutamol	4 mg	cap/tab	-	-	-	-	-	4.84	-	-	-
Simvastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	Inj	-	-	-	-	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	-	2.57	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
(e) Private sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	26.87	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	20.52	25.58	22.92	11.87	12.40	-	10.95	14.57	9.04
Anidone	200 mg	cap/tab	-	-	3.71	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	13.47	8.48	9.58	2.12	-	-	3.68	13.50
Amoxicillin	250 mg	cap/tab	26.43	30.48	-	20.05	3.09	-	-	-	-
Amoxicillin	250 mg/5ml	suspension	-	-	-	8.39	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	15.58	12.33	-	-	-	7.34	-
Atenolol	100 mg	cap/tab	-	-	-	15.93	-	-	-	-	-

(e) Private sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Atenolol	50 mg	cap/tab	45.81	44.30	41.95	–	11.21	49.86	13.01	–	25.45
Beclometasone	0.05 mg/dose	inhaler	2.94	3.58	3.19	–	0.99	–	–	–	–
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	9.13	–	–	–	–	–
Captopril	25 mg	cap/tab	12.40	15.26	12.67	16.45	4.32	12.77	–	10.46	8.97
Carbamazepine	200 mg	cap/tab	11.70	15.11	9.97	9.19	2.45	14.87	7.06	–	8.09
Carbimazole	5 mg	cap/tab	–	–	–	–	–	5.21	–	–	–
Ceftriaxone	1 g/vial	injection	10.71	12.47	10.27	11.36	3.21	6.86	–	–	3.70
Cephalexin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	8.51	–	–	–	–	–	–
Chloroquine	100 mg	cap/tab	–	–	–	12.76	–	–	–	2.15	–
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Chloroquine	40 mg/ml	injection	–	–	–	–	–	–	–	–	–
Chlorpromazine	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	100.46	123.78	116.24	129.86	27.21	–	–	–	101.23
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	–	1.97
Co-trimoxazole	8+40 mg/ml	suspension	15.08	–	14.79	8.62	1.91	14.33	3.99	7.32	8.55
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	–	–	–
Diazepam	5 mg	cap/tab	50.77	–	52.45	17.27	3.44	40.80	12.81	12.55	39.49
Diclofenac	25 mg	cap/tab	63.61	76.31	42.87	26.13	15.82	46.67	20.51	24.09	42.55
Diltiazem	60 mg	cap/tab	16.80	–	–	–	–	–	–	–	–
Enalapril	20 mg	cap/tab	160.18	–	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Fluconazole	150 mg	cap/tab	127.79	–	–	214.87	–	–	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	–	–	–	33.08	87.22
Fluoxetine	20 mg	cap/tab	51.68	87.58	59.66	58.34	22.00	–	–	43.20	–



(e) Private sector – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Fluphenazine	25 mg/ml	injection	-	-	11.82	5.92	3.49	-	-	8.66
Furosemide	40 mg	cap/tab	54.95	-	-	-	-	-	-	-
Glibenclamide	5 mg	cap/tab	38.42	66.29	34.80	39.56	6.14	-	27.71	46.19
Hydrochlorothiazide	25 mg	cap/tab	-	-	-	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	7.38	-	-
Ibuprofen	200 mg	cap/tab	-	-	-	-	-	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	21.78	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	-	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	2.25	-	-	-	-	-
Levothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	8.87	-	-	-	-	-	2.41
Loperamide	2 mg	cap/tab	-	-	-	-	-	50.43	-	-
Loratadine	10 mg	cap/tab	-	31.28	-	-	-	-	13.96	-
Losartan	50 mg	cap/tab	1.30	-	1.56	1.42	0.93	-	-	1.05
Lovastatin	20 mg	cap/tab	-	-	-	-	3.79	-	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	76.09	-	46.19
Metformin	500 mg	cap/tab	6.62	5.07	-	2.64	1.26	10.58	-	2.37
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	1.51
Methyldopa	250 mg	cap/tab	4.57	-	-	-	-	-	-	-
Metronidazole	250 mg	cap/tab	-	-	49.66	-	-	-	-	30.71
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	22.89	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	13.51	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	-	29.01	21.74	31.28	3.93	-	11.69	35.07

(e) Private sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Omeprazole	20 mg	cap/tab	14.29	16.89	16.49	12.73	4.30	-	-	-	6.03
Paracetamol	500 mg	cap/tab	-	17.55	-	-	-	-	24.04	17.05	-
Phenytoin	100 mg	cap/tab	9.31	8.60	10.07	10.22	-	-	-	5.72	10.37
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	16.60	-	-	-
Pyrazinamide	500 mg	cap/tab	-	-	-	6.40	-	-	-	-	-
Ranitidine	150 mg	cap/tab	24.32	53.91	36.25	33.97	6.06	-	7.61	26.68	10.14
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	1.70
Salbutamol	0.1 mg/dose	inhaler	2.60	6.89	3.01	3.26	0.75	3.54	-	0.85	2.06
Simvastatin	20 mg	cap/tab	17.07	-	-	-	-	-	-	14.60	-
Streptomycin	1g/vial	injection	-	-	-	-	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	2.60	38.59	-	-	12.90
Valproic acid	200 mg	cap/tab	-	-	-	2.12	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
(f) Private sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	8.00	-	10.03	9.73	1.78	3.10	3.01	-	2.81
Amiodarone	200 mg	cap/tab	-	-	2.97	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	8.66	-	-	-	-	6.52	3.67	-	6.75
Amoxicillin	250 mg	cap/tab	10.76	-	-	16.59	2.98	3.17	3.26	-	1.81
Amoxicillin	250 mg/5ml	suspension	-	-	-	5.26	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	5.93	8.74	-	-	-	4.53	-

(f) Private sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Atenolol	100 mg	cap/tab	–	–	–	8.82	–	–	–	–	–
Atenolol	50 mg	cap/tab	18.42	41.78	8.60	–	4.22	6.40	4.50	14.79	5.09
Beclometasone	0.05 mg/dose	inhaler	1.95	–	1.37	2.10	–	–	0.94	0.70	1.40
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	–	–	–	–	2.22	–
Captopril	25 mg	cap/tab	8.25	16.01	4.84	13.07	2.87	4.51	2.64	6.71	2.24
Carbamazepine	200 mg	cap/tab	5.79	–	4.85	–	1.63	3.99	2.86	1.83	2.38
Carbimazole	5 mg	cap/tab	–	–	–	–	–	2.17	–	–	–
Ceftriaxone	1 g/vial	injection	6.82	10.95	6.89	7.10	1.01	1.09	1.32	1.13	1.20
Cephalexin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	4.26	–	–	–	–	–	–
Chloramphenicol	0,5 %	eye drops	–	–	–	–	–	1.65	–	–	–
Chloroquine	100 mg	cap/tab	–	–	–	–	–	–	–	–	–
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	–	4.46
Chloroquine	40 mg/ml	injection	–	–	–	–	–	2.92	–	–	–
Chlorothiazide	500mg	cap/tab	–	–	–	–	–	–	–	–	–
Chlorphenamine	4 mg	cap/tab	–	–	–	–	–	14.17	–	–	–
Chlorpromazine	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	22.09	112.36	32.70	82.44	7.29	8.88	2.26	21.79	4.17
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	–	1.22
Co-trimoxazole	8+40 mg/ml	suspension	4.67	17.06	10.29	5.75	1.19	2.76	1.94	6.31	2.19
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	–	4.51	–
Diazepam	5 mg	cap/tab	8.06	–	–	–	2.94	11.33	5.41	7.13	9.12
Diclofenac	25 mg	cap/tab	28.76	51.23	36.98	18.31	5.89	7.77	5.47	12.48	5.57
Diltiazem	60 mg	cap/tab	11.94	–	–	–	–	–	2.85	–	–
Doxycycline	100 mg	cap/tab	–	–	–	–	–	9.53	–	–	–

(f) Private sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Enalapril	20 mg	cap/tab	69.27	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	3.05	-	-	-
Fluconazole	150 mg	cap/tab	70.24	-	-	55.26	-	42.54	-	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	3.20	-	7.86
Fluoxetine	20 mg	cap/tab	20.59	-	27.15	23.39	4.65	3.03	1.82	31.23	2.41
Fluphenazine	25 mg/ml	injection	-	-	-	-	2.61	-	-	-	-
Furosemide	40 mg	cap/tab	13.52	-	-	-	-	8.26	4.40	-	-
Gentamicin	40 mg/ml	injection	-	-	-	-	-	8.93	-	-	-
Glibenclamide	5 mg	cap/tab	18.48	60.68	7.12	16.60	3.74	7.26	3.08	6.87	7.79
Hydrochlorothiazide	25 mg	cap/tab	49.57	-	29.01	49.29	-	63.47	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	2.11	-	-	-
Ibuprofen	200 mg	cap/tab	-	29.63	-	-	-	9.44	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	18.75	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	17.10	-	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	2.06	-	-	-	-	-	-
Levothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-	9.61
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-	0.79
Loperamide	2 mg	cap/tab	-	-	-	-	-	13.44	-	-	-
Loratadine	10 mg	cap/tab	-	28.05	-	-	-	-	4.01	-	-
Losartan	50 mg	cap/tab	0.85	-	0.74	-	0.21	0.38	0.14	-	0.25
Lovastatin	20 mg	cap/tab	-	-	-	-	1.62	-	2.77	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	32.21	-	-	17.32
Metformin	500 mg	cap/tab	3.24	4.65	12.15	2.46	1.07	4.46	2.04	-	0.89
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	1.17	-

(f) Private sector – LPG												
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen	
Methyldopa	250 mg	cap/tab	1.90	-	-	-	-	2.61	-	-	-	-
Metronidazole	250 mg	cap/tab	-	-	37.50	-	-	-	-	-	7.67	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	4.19	-	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	8.31	-	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	10.78	-	8.85	13.05	-	6.84	-	2.11	3.95	-
Nystatin	10-0 U/mL	suspension	-	-	-	-	-	1.80	-	-	-	-
Onepiazole	20 mg	cap/tab	5.57	14.80	5.07	2.81	0.87	1.30	1.44	6.72	0.48	-
Paracetamol	500 mg	cap/tab	-	15.45	-	-	-	-	6.87	11.15	-	-
Phenytoin	100 mg	cap/tab	-	-	-	-	1.38	2.80	2.58	-	-	-
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	9.92	-	-	-	-
Pyrazinamide	500mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	13.14	40.41	5.32	12.32	4.62	3.66	2.71	17.05	0.95	-
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	0.22	-
Salbutamol	0.1 mg/dose	inhaler	1.10	-	2.31	2.91	0.75	1.61	1.05	-	0.82	-
Salbutamol	4 mg	cap/tab	-	-	-	-	-	9.67	-	-	-	-
Simvastatin	20 mg	cap/tab	10.51	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	injection	-	-	-	-	-	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	2.35	5.14	-	-	5.52	-
Theophylline retard	300 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-	-

**(Part B: Individual medicine MPRs (PPP adjusted)**

MPR data corrected for inflation, exchange rates, standardized to MSH 2003 reference prices and also adjusted for PPP (base year .(2004

<b>(a) Procurement – OB</b>											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	0.62	-	-	20.51	-	-	27.70	28.76	-
Amiodarone	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	7.91	-	4.14	17.89	-	-	8.63	6.99	-
Amoxicillin	250 mg	cap/tab	1.99	-	-	-	-	-	-	-	-
Amoxicillin	250 mg/5ml	suspension	-	-	-	-	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	-	-	-	-	-	-	32.72	-	-
Beclometasone	0.05 mg/dose	inhaler	-	-	-	6.18	-	-	-	-	-
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	9.49	-	-	-	-	-
Captopril	25 mg	cap/tab	-	-	-	99.49	13.34	-	-	-	-
Carbamazepine	200 mg	cap/tab	-	3.55	-	16.73	-	-	20.83	-	-
Carbamazole	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ceftriaxone	1 g/vial	injection	-	-	-	16.97	-	-	-	-	-
Cephalexin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Cephalexin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	14.62	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	40 mg/ml	injection	-	-	-	-	-	-	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	-	-	-	176.84	-	-	-	-	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-amoxiclav	500+125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8 + 40 mg/ml	suspension	-	-	-	-	-	-	9.93	20.71	-
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	-	-

(a) Procurement – OB										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Diazepam	5 mg	cap/tab	5.69	–	–	28.86	–	–	34.08	22.61
Diclofenac	25 mg	cap/tab	–	–	–	50.45	–	–	56.16	–
Diltiazem	60 mg	cap/tab	1.67	–	–	–	–	–	–	–
Enalapril	20 mg	cap/tab	3.19	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–
Fluconazole	150 mg	cap/tab	5.20	–	–	–	–	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	–	–	–	–
Fluoxetine	20 mg	cap/tab	1.34	–	–	–	–	–	–	–
Fluphenazine	25 mg/ml	injection	4.69	–	–	9.80	–	–	–	–
Furosemide	40 mg	cap/tab	4.74	–	–	–	–	–	–	–
Glibenclamide	5 mg	cap/tab	–	–	–	–	–	–	–	–
Hydrochlorothiazide	25 mg	cap/tab	–	–	–	–	–	–	–	–
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	–	–	–
Ibuprofen	200 mg	cap/tab	–	–	–	–	–	–	–	–
Ibuprofen	400 mg	cap/tab	–	–	–	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	1.45	5.63	–	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	–	–	–
Insulin neutral	100 U/mL	injection	–	0.53	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	–	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	–
Lisinopril	10 mg	cap/tab	–	0.67	–	–	–	–	–	–
Loperamide	2 mg	cap/tab	–	–	–	–	–	–	–	–
Loratadine	10 mg	cap/tab	–	–	–	–	–	–	35.78	–
Losartan	50 mg	cap/tab	–	–	–	–	–	–	–	–
Lovastatin	20 mg	cap/tab	–	–	–	–	–	–	–	–
Mebendazole	100 mg	cap/tab	–	–	–	–	–	–	–	–



(a) Procurement – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Metformin	500 mg	cap/tab	–	–	–	2.99	3.65	–	–	–	–
Metformin	850 mg	cap/tab	–	–	–	–	–	–	–	–	–
Methyldopa	250 mg	cap/tab	1.57	–	–	–	–	–	–	–	–
Metronidazole	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Metronidazole	40 mg/ml	suspension	–	–	–	–	–	–	–	–	–
Metronidazole	500 mg	cap/tab	–	–	–	–	–	–	29.84	–	–
Nevirapine	200 mg	cap/tab	–	–	12.99	13.58	–	–	–	–	–
Nifedipine Retard	20 mg	tab	–	4.77	–	50.37	–	–	–	–	–
Omeprazole	20 mg	cap/tab	–	–	–	–	–	–	–	–	–
Paracetamol	500 mg	cap/tab	–	–	–	–	–	–	59.65	–	–
Phenytoin	100 mg	cap/tab	15.10	4.56	5.39	–	–	–	–	12.61	–
Pravastatin	20 mg	cap/tab	–	–	–	–	–	–	–	–	–
Promethazine	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Pyrazinamide	500 mg	cap/tab	–	–	–	2.80	–	–	–	–	–
Ranitidine	150 mg	cap/tab	–	–	–	–	–	–	19.61	–	–
Risperidone	2 mg	cap/tab	–	–	–	–	–	–	–	–	–
Salbutamol	0.1 mg/dose	inhaler	–	0.88	–	6.16	–	–	–	1.95	–
Simvastatin	20 mg	cap/tab	1.97	–	–	–	–	–	–	–	–
Streptomycin	1g/vial	inj	–	–	–	9.88	–	–	–	–	–
Sulfadoxine + Pyrimethamine	500 + 25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Valproic acid	200 mg	cap/tab	–	–	–	3.54	–	–	–	–	–
Zidovudine	100 mg	cap/tab	–	–	9.83	2.30	–	–	–	–	–

(b) Procurement – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	7.36	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	-	1.25	3.84	13.21	1.63	-	6.34	-	-
Amiodarone	200 mg	cap/tab	-	-	1.02	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	2.71	-	-	2.66	-	7.84	6.74	0.82
Amoxicillin	250 mg	cap/tab	-	1.02	-	-	-	1.87	6.93	-	-
Amoxicillin	250 mg/5ml	suspension	-	-	-	2.91	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	1.46	3.30	-	-	-	3.51	-
Atenolol	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	1.53	1.90	3.69	-	3.04	-	9.62	9.49	-
Beclometasone	0.05 mg/dose	inhaler	3.17	0.43	0.53	1.93	-	-	1.78	1.87	0.53
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	-	-	-	-	4.40	-
Captopril	25 mg	cap/tab	0.51	0.23	1.05	33.82	1.18	-	4.73	3.37	-
Carbamazepine	200 mg	cap/tab	1.71	-	2.37	13.79	2.39	-	5.69	3.98	0.69
Carbamazole	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ceftriaxone	1 g/vial	injection	0.67	1.56	-	9.72	0.91	-	2.81	2.17	-
Cephalexin	250 mg	cap/tab	-	0.34	-	-	-	-	-	-	-
Cephalexin	500 mg	cap/tab	-	-	0.70	-	-	-	-	-	-
Chloramphenicol	0.5 %	eye drops	-	-	-	-	-	0.47	-	-	-
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	40 mg/ml	injection	-	-	-	-	-	0.98	-	-	-
Chlorothiazide	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chlorphenamine	4 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	1.53	0.74	-	67.25	3.95	0.28	4.31	14.09	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Co-amoxiclav	500+125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8+40 mg/ml	suspension	5.43	0.53	1.17	5.21	1.71	0.24	3.48	3.03	-
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	1.78	-
Diazepam	5 mg	cap/tab	-	15.96	-	-	0.95	4.25	10.23	10.13	-
Diclofenac	25 mg	cap/tab	-	0.58	-	-	-	-	11.71	-	-
Diltiazem	60 mg	cap/tab	-	-	-	-	-	-	7.33	-	-
Doxycycline	100 mg	cap/tab	-	-	-	-	-	1.41	-	-	-
Enalapril	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	1.41	-	-	-
Fluconazole	150 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	7.03	-	-
Fluoxetine	20 mg	cap/tab	-	6.48	12.48	-	-	-	4.25	61.50	-
Fluphenazine	25 mg/ml	injection	-	-	-	-	2.70	-	-	-	-
Furosemide	40 mg	cap/tab	-	-	-	-	-	2.24	9.45	-	-
Gentamicin	40 mg/ml	injection	-	-	-	-	-	0.25	-	-	-
Glibenclamide	5 mg	cap/tab	1.60	4.30	1.35	2.96	2.85	-	4.66	2.73	0.40
Hydrochlorothiazide	25 mg	cap/tab	6.34	27.73	-	21.03	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	1.55	-	-	-
Ibuprofen	200 mg	cap/tab	-	2.11	-	-	-	2.53	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	0.84	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	4.25	-	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	0.33	-	-	-	-	-	-
Levofloxyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Loperamide	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Loratadine	10 mg	cap/tab	-	5.50	-	-	-	-	8.82	-	-
Losartan	50 mg	cap/tab	0.30	-	-	-	-	-	0.29	-	-
Lovastatin	20 mg	cap/tab	-	-	-	-	-	-	6.55	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metformin	500 mg	cap/tab	0.90	0.32	-	-	1.41	-	4.01	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	1.17	-
Methyldopa	250 mg	cap/tab	-	-	-	-	-	1.61	-	-	-
Metronidazole	250 mg	cap/tab	-	-	5.11	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	0.64	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	14.19	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	0.74	-	3.07	-	-	-	-	3.15	-
Nystatin	10-0 U/mL	suspension	-	-	-	-	-	0.03	-	-	-
Omeprazole	20 mg	cap/tab	0.37	0.97	0.79	2.91	-	-	3.27	12.19	-
Paracetamol	500 mg	cap/tab	-	1.22	-	-	-	-	12.33	5.79	-
Phenytoin	100 mg	cap/tab	-	-	-	-	-	-	5.03	-	0.50
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	0.95	-	-	-
Pyrazinamide	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	0.76	0.35	3.05	-	1.94	-	5.04	-	-
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	1.32	-	0.98	4.10	-	-	1.86	2.98	-
Salbutamol	4 mg	cap/tab	-	-	-	-	-	1.13	-	-	-
Simvastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	inj	-	-	-	-	-	-	-	-	-

(b) Procurement – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	3.04	0.58	-	-	1.63
Theophylline Retard	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
(c) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amiodarone	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amoxicillin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Amoxicillin	250 mg/5ml	suspension	-	-	-	-	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	-	-	-	-	-	-	-	-	-
Beclometasone	0.05 mg/dose	inhaler	-	-	-	-	-	-	-	-	-
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	-	-	-	-	-	-
Captopril	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Carbamazepine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Carbamazepine	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ceftriaxone	1 g/vial	injection	-	-	-	-	-	-	-	-	-
Cephalexin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Cephalexin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-

(c) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Chloroquine	40 mg/ml	injection	-	-	-	-	-	-	-	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-amoxiclav	500+125 mg	cap/tab	-	-	-	-	-	-	-	-	-
Co-trimoxazole	8+40 mg/ml	suspension	-	-	-	-	-	-	-	-	-
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	-	-
Diazepam	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Diclofenac	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Diltiazem	60 mg	cap/tab	-	-	-	-	-	-	-	-	-
Enalapril	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluconazole	150 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluoxetine	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Fluphenazine	25 mg/ml	injection	-	-	-	-	-	-	-	-	-
Furosemide	40 mg	cap/tab	-	-	-	-	-	-	-	-	-
Glibenclamide	5 mg	cap/tab	-	-	-	-	-	-	-	-	-
Hydrochlorothiazide	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ibuprofen	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	-	-	-	-

(c) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Levofloxyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Loperamide	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Loratadine	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Losartan	50 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lovastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metformin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	-	-
Methyldopa	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metronidazole	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	-	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	-	-	-	-	-	-	-	-	-
Omeprazole	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Paracetamol	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Phenytoin	100 mg	cap/tab	13.76	-	-	-	-	-	-	-	-
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Pyrazinamide	500mg	cap/tab	-	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	-	-	-	-	-	-	-	-	-
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	-	-	-	-	-	11.45	-	-	-

(c) Public sector – OB												
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen	
Simvastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	inj	-	-	-	-	-	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
(d) Public sector – LPG												
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen	
Acetylsalicylic acid	300 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	0.93	-	-	-	-	-	-	-	-	-
Amiodarone	200 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	-	-	-	-	21.10	-	-	-	-
Amoxicillin	250 mg	cap/tab	2.61	-	-	-	-	7.46	-	-	-	1.22
Amoxicillin	250mg/5ml	susp	-	-	-	-	-	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Atenolol	100 mg	cap/tab	-	-	-	-	-	-	-	-	-	-
Atenolol	50 mg	cap/tab	-	-	-	-	-	18.34	-	-	-	-
Beclometasone	0.05 mg/dose	inhaler	1.46	-	-	-	-	-	-	-	-	-
Benzathine benzylpenicillin	1.2 MIU/vial	injection	-	-	-	-	-	-	-	-	-	-
Captopril	25 mg	cap/tab	0.67	-	-	-	-	14.58	-	-	-	0.55
Carbamazepine	200 mg	cap/tab	1.97	-	-	-	-	13.55	-	-	-	-
Carbamazole	5 mg	cap/tab	-	-	-	-	-	6.66	-	-	-	-
Ceftriaxone	1 g/vial	injection	-	-	-	-	-	7.92	-	-	-	1.00
Cephalexin	250 mg	cap/tab	-	-	-	-	-	-	-	-	-	-



(d) Public sector – LPG										
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Yemen
Cephalexin	500 mg	cap/tab	-	-	-	-	-	-	-	-
Chloramphenicol	0.5 %	eye drops	-	-	-	-	-	5.33	-	-
Chloroquine	100 mg	cap/tab	-	-	-	-	-	-	-	-
Chloroquine	250 mg	cap/tab	-	-	-	-	-	-	-	1.19
Chloroquine	40 mg/ml	injection	-	-	-	-	-	6.61	-	-
Chlorothiazide	500 mg	cap/tab	-	-	-	-	-	-	-	-
Chlorphenamine	4 mg	cap/tab	-	-	-	-	-	22.93	-	-
Chlorpromazine	25 mg	cap/tab	-	-	-	-	-	-	-	-
Ciprofloxacin	500 mg	cap/tab	2.47	-	-	-	-	12.10	-	-
Clarithromycin	250 mg	cap/tab	-	-	-	-	-	-	-	-
Co-amoxiclav	500+125 mg	cap/tab	-	-	-	-	-	-	-	-
Co-trimoxazole	8+40 mg/ml	suspension	3.08	-	-	-	-	5.34	-	1.23
Dexamethasone	4 mg/ml	injection	-	-	-	-	-	-	-	-
Diazepam	5 mg	cap/tab	5.57	-	-	-	-	18.32	-	-
Diclofenac	25 mg	cap/tab	-	-	-	-	-	23.90	-	-
Diltiazem	60 mg	cap/tab	1.99	-	-	-	-	-	-	-
Doxycycline	100 mg	cap/tab	-	-	-	-	-	12.35	-	-
Enalapril	20 mg	cap/tab	-	-	-	-	-	-	-	-
Erythromycin	250 mg	cap/tab	-	-	-	-	-	7.88	-	-
Fluconazole	150 mg	cap/tab	-	-	-	-	-	169.44	-	-
Fluconazole	200 mg	cap/tab	-	-	-	-	-	-	-	-
Fluoxetine	20 mg	cap/tab	3.98	-	-	-	-	-	-	-
Fluphenazine	25 mg/ml	injection	-	-	-	-	-	-	-	-
Furosemide	40 mg	cap/tab	6.11	-	-	-	-	6.67	-	-
Gentamicin	40 mg/ml	injection	-	-	-	-	-	21.98	-	-
Glibenclamide	5 mg	cap/tab	2.17	-	-	-	-	19.83	-	-

(d) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Hydrochlorothiazide	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	4.77	-	-	-
Ibuprofen	200 mg	cap/tab	-	-	-	-	-	20.39	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	29.53	-	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Levothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Loperamide	2 mg	cap/tab	-	-	-	-	-	21.75	-	-	-
Loratadine	10 mg	cap/tab	-	-	-	-	-	-	-	-	-
Losartan	50 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lovastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	52.20	-	-	-
Metformin	500 mg	cap/tab	-	-	-	-	-	21.63	-	-	-
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	-	-
Methyldopa	250 mg	cap/tab	2.20	-	-	-	-	4.52	-	-	-
Metronidazole	250 mg	cap/tab	-	-	-	-	-	-	-	-	-
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	9.89	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Nifedipine Retard	20 mg	tab	0.76	-	-	-	-	21.38	-	-	-
Nystatin	10–0 U/mL	suspension	-	-	-	-	-	4.85	-	-	-
Omeprazole	20 mg	cap/tab	0.56	-	-	-	-	4.21	-	-	-
Paracetamol	500 mg	cap/tab	-	-	-	-	-	-	-	-	-

(d) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Phenytoin	100 mg	cap/tab	-	-	-	-	-	20.26	-	-	-
Pravastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Promethazine	25 mg	cap/tab	-	-	-	-	-	16.05	-	-	-
Pyrazinamide	500 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ranitidine	150 mg	cap/tab	1.43	-	-	-	-	14.17	-	-	0.51
Risperidone	2 mg	cap/tab	-	-	-	-	-	-	-	-	-
Salbutamol	0.1 mg/dose	inhaler	-	-	-	-	-	2.99	-	-	-
Salbutamol	4 mg	cap/tab	-	-	-	-	-	15.66	-	-	-
Simvastatin	20 mg	cap/tab	-	-	-	-	-	-	-	-	-
Streptomycin	1g/vial	inj	-	-	-	-	-	-	-	-	-
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	-	-	-	-	-	8.33	-	-	-
Theophylline Retard	300 mg	cap/tab	-	-	-	-	-	-	-	-	-
Valproic acid	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Zidovudine	100 mg	cap/tab	-	-	-	-	-	-	-	-	-
(e) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	-	23.29	-	-	-	-	-	-	-
Aciclovir	200 mg	cap/tab	47.39	22.17	21.28	31.50	45.36	-	32.79	41.23	8.90
Amiodarone	200 mg	cap/tab	-	-	3.45	-	-	-	-	-	-
Amitriptyline	25 mg	cap/tab	-	11.68	7.87	25.42	7.75	-	-	10.41	13.29
Amoxicillin	250 mg	cap/tab	61.03	26.42	-	53.19	11.32	-	-	-	-
Amoxicillin	250 mg/5ml	suspension	-	-	-	22.25	-	-	-	-	-
Amoxicillin	500 mg	cap/tab	-	-	14.47	32.71	-	-	-	20.77	-

(e) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Atenolol	100 mg	cap/tab	–	–	–	42.25	–	–	–	–	–
Atenolol	50 mg	cap/tab	105.81	38.39	38.94	–	40.99	161.37	38.95	–	25.05
Beclometasone	0.05 mg/dose	inhaler	6.80	3.10	2.96	–	3.61	–	–	–	–
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	24.23	–	–	–	–	–
Captopril	25 mg	cap/tab	28.63	13.22	11.76	43.63	15.81	41.33	–	29.59	8.83
Carbamazepine	200 mg	cap/tab	27.01	13.09	9.26	24.39	8.97	48.13	21.12	–	7.97
Carbimazole	5 mg	cap/tab	–	–	–	–	–	16.85	–	–	–
Ceftriaxone	1 g/vial	injection	24.72	10.81	9.54	30.12	11.74	22.21	–	–	3.65
Cephalexin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	7.90	–	–	–	–	–	–
Chloroquine	100 mg	cap/tab	–	–	–	33.85	–	–	–	6.10	–
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Chloroquine	40 mg/ml	injection	–	–	–	–	–	–	–	–	–
Chlorpromazine	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	232.01	107.29	107.92	344.48	99.54	–	–	–	99.65
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	–	1.94
Co-trimoxazole	8+40 mg/ml	suspension	34.83	–	13.73	22.86	6.99	46.36	11.94	20.71	8.41
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	–	–	–
Diazepam	5 mg	cap/tab	117.25	–	48.70	45.82	12.58	132.03	38.36	35.53	38.88
Diclofenac	25 mg	cap/tab	146.90	66.15	39.80	69.31	57.86	151.01	61.41	68.18	41.88
Diltiazem	60 mg	cap/tab	38.81	–	–	–	–	–	–	–	–
Enalapril	20 mg	cap/tab	369.92	–	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Fluconazole	150 mg	cap/tab	295.12	–	–	57	–	–	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	–	–	–	93.63	85.85

(e) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Fluoxetine	20 mg	cap/tab	119.36	75.91	55.39	154.75	80.47	-	-	122.28	-
Fluphenazine	25 mg/ml	injection	-	-	10.98	15.70	12.77	-	-	-	8.52
Furosemide	40 mg	cap/tab	126.90	-	-	-	-	-	-	-	-
Glibenclamide	5 mg	cap/tab	88.74	57.46	32.30	104.94	22.45	-	-	78.43	45.47
Hydrochlorothiazide	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Hyoscine butylbromide	10 mg	cap/tab	-	-	-	-	-	23.90	-	-	-
Ibuprofen	200 mg	cap/tab	-	-	-	-	-	-	-	-	-
Ibuprofen	400 mg	cap/tab	-	-	20.22	-	-	-	-	-	-
Indinavir	400 mg	cap/tab	-	-	-	-	-	-	-	-	-
Indomethacin	25 mg	cap/tab	-	-	-	-	-	-	-	-	-
Insulin neutral	100 U/mL	injection	-	-	-	-	-	-	-	-	-
Isosorbide dinitrate	10 mg	cap/tab	-	-	2.09	-	-	-	-	-	-
Levodothyroxine	0.1 mg	cap/tab	-	-	-	-	-	-	-	-	-
Lisinopril	10 mg	cap/tab	-	7.69	-	-	-	-	-	-	2.37
Loperamide	2 mg	cap/tab	-	-	-	-	-	163.19	-	-	-
Loratadine	10 mg	cap/tab	-	27.12	-	-	-	-	41.79	-	-
Losartan	50 mg	cap/tab	3.01	-	1.45	3.78	3.42	-	-	2.98	-
Lovastatin	20 mg	cap/tab	-	-	-	-	13.87	-	-	-	-
Mebendazole	100 mg	cap/tab	-	-	-	-	-	246.22	-	-	45.46
Metformin	500 mg	cap/tab	15.29	4.40	-	7.00	4.60	34.24	-	-	2.33
Metformin	850 mg	cap/tab	-	-	-	-	-	-	-	4.29	-
Methyldopa	250 mg	cap/tab	10.55	-	-	-	-	-	-	-	-
Metronidazole	250 mg	cap/tab	-	-	46.11	-	-	-	-	-	30.23
Metronidazole	40 mg/ml	suspension	-	-	-	-	-	74.07	-	-	-
Metronidazole	500 mg	cap/tab	-	-	-	-	-	-	40.45	-	-
Nevirapine	200 mg	cap/tab	-	-	-	-	-	-	-	-	-

(e) Public sector – OB											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Nifedipine Retard	20 mg	tab	–	25.15	20.19	82.98	14.36	–	–	33.10	34.52
Omeprazole	20 mg	cap/tab	33.00	14.64	15.31	33.77	15.73	–	–	–	5.94
Paracetamol	500 mg	cap/tab	–	15.21	–	–	–	–	71.98	48.28	–
Phenytoin	100 mg	cap/tab	21.51	7.45	9.35	27.11	–	–	–	16.20	10.21
Pravastatin	20 mg	cap/tab	–	–	–	–	–	–	–	–	–
Promethazine	25 mg	cap/tab	–	–	–	–	–	53.73	–	–	–
Pyrazinamide	500 mg	cap/tab	–	–	–	16.97	–	–	–	–	–
Ranitidine	150 mg	cap/tab	56.18	46.72	33.66	90.11	22.19	–	22.79	75.53	9.98
Risperidone	2 mg	cap/tab	–	–	–	–	–	–	–	–	1.67
Salbutamol	0.1 mg/dose	inhaler	6.01	5.97	2.79	8.64	2.74	11.45	–	2.39	2.03
Simvastatin	20 mg	cap/tab	39.43	–	–	–	–	–	–	41.32	–
Streptomycin	1g/vial	inj	–	–	–	–	–	–	–	–	–
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	–	–	–	–	9.50	124.88	–	–	12.69
Valproic acid	200 mg	cap/tab	–	–	–	5.63	–	–	–	–	–
Zidovudine	100 mg	cap/tab	–	–	–	–	–	–	–	–	–
(f) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acetylsalicylic acid	300 mg	cap/tab	–	–	–	–	–	–	–	–	–
Aciclovir	200 mg	cap/tab	18.48	–	9.31	25.82	6.50	10.04	9.02	–	2.77
Amiodarone	200 mg	cap/tab	–	–	2.76	–	–	–	–	–	–
Amitriptyline	25 mg	cap/tab	20.00	–	–	–	–	21.10	10.98	–	6.64
Amoxicillin	250 mg	cap/tab	24.84	–	–	44.00	10.90	10.25	9.76	–	1.79
Amoxicillin	250 mg/5ml	suspension	–	–	–	13.95	–	–	–	–	–

(f) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Amoxicillin	500 mg	cap/tab	–	–	5.50	23.18	–	–	–	12.83	–
Atenolol	100 mg	cap/tab	–	–	–	23.39	–	–	–	–	–
Atenolol	50 mg	cap/tab	42.53	36.21	7.98	–	15.43	20.70	13.46	41.87	5.01
Beclometasone	0.05 mg/dose	inhaler	4.51	–	1.27	5.58	–	–	2.81	1.98	1.38
Benzathine benzylpenicillin	1.2 MIU/vial	injection	–	–	–	–	–	–	–	6.29	–
Captopril	25 mg	cap/tab	19.06	13.87	4.49	34.67	10.49	14.58	7.90	18.99	2.21
Carbamazepine	200 mg	cap/tab	13.37	–	4.51	–	5.96	12.90	8.55	5.18	2.35
Carbimazole	5 mg	cap/tab	–	–	–	–	–	7.02	–	–	–
Ceftriaxone	1 g/vial	injection	15.75	9.49	6.39	18.84	3.69	3.52	3.94	3.20	1.19
Cephalexin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Cephalexin	500 mg	cap/tab	–	–	3.96	–	–	–	–	–	–
Chloramphenicol	0.5 %	eye drops	–	–	–	–	–	5.33	–	–	–
Chloroquine	100 mg	cap/tab	–	–	–	–	–	–	–	–	–
Chloroquine	250 mg	cap/tab	–	–	–	–	–	–	–	–	4.39
Chloroquine	40 mg/ml	injection	–	–	–	–	–	9.44	–	–	–
Chlorothiazide	500 mg	cap/tab	–	–	–	–	–	–	–	–	–
Chlorphenamine	4 mg	cap/tab	–	–	–	–	–	45.85	–	–	–
Chlorpromazine	25 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ciprofloxacin	500 mg	cap/tab	51.02	97.39	30.36	218.70	26.67	28.75	6.76	61.67	4.10
Clarithromycin	250 mg	cap/tab	–	–	–	–	–	–	–	–	–
Co-amoxiclav	500+125 mg	cap/tab	–	–	–	–	–	–	–	–	1.20
Co-trimoxazole	8+40 mg/ml	suspension	10.78	14.79	9.55	15.25	4.37	8.93	5.81	17.87	2.16
Dexamethasone	4 mg/ml	injection	–	–	–	–	–	–	–	12.78	–
Diazepam	5 mg	cap/tab	18.62	–	–	–	10.75	36.68	16.19	20.18	8.98
Diclofenac	25 mg	cap/tab	66.42	44.40	34.33	48.57	21.54	25.16	16.37	35.33	5.48
Diltiazem	60 mg	cap/tab	27.57	–	–	–	–	–	8.52	–	–

(f) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Doxycycline	100 mg	cap/tab	–	–	–	–	–	30.85	–	–	–
Enalapril	20 mg	cap/tab	159.97	–	–	–	–	–	–	–	–
Erythromycin	250 mg	cap/tab	–	–	–	–	–	9.86	–	–	–
Fluconazole	150 mg	cap/tab	162.21	–	–	146.58	–	137.67	–	–	–
Fluconazole	200 mg	cap/tab	–	–	–	–	–	–	9.59	–	7.74
Fluoxetine	20 mg	cap/tab	47.55	–	25.20	62.05	17.02	9.80	5.46	88.39	2.37
Fluphenazine	25 mg/ml	injection	–	–	–	–	9.54	–	–	–	–
Furosemide	40 mg	cap/tab	31.22	–	–	–	–	26.73	13.16	–	–
Gentamicin	40 mg/ml	injection	–	–	–	–	–	28.91	–	–	–
Glibenclamide	5 mg	cap/tab	42.67	52.60	6.61	44.02	13.68	23.48	9.22	19.46	7.67
Hydrochlorothiazide	25 mg	cap/tab	114.48	–	26.93	130.75	–	205.38	–	–	–
Hyoscine butylbromide	10 mg	cap/tab	–	–	–	–	–	6.83	–	–	–
Ibuprofen	200 mg	cap/tab	–	25.68	–	–	–	30.55	–	–	–
Ibuprofen	400 mg	cap/tab	–	–	17.41	–	–	–	–	–	–
Indinavir	400 mg	cap/tab	–	–	–	–	–	–	–	–	–
Indomethacin	25 mg	cap/tab	–	–	–	–	–	55.34	–	–	–
Insulin neutral	100 U/mL	injection	–	–	–	–	–	–	–	–	–
Isosorbide dinitrate	10 mg	cap/tab	–	–	1.92	–	–	–	–	–	–
Levothyroxine	0.1 mg	cap/tab	–	–	–	–	–	–	–	–	9.45
Lisinopril	10 mg	cap/tab	–	–	–	–	–	–	–	–	0.78
Loperamide	2 mg	cap/tab	–	–	–	–	–	43.51	–	–	–
Loratadine	10 mg	cap/tab	–	24.31	–	–	–	–	12.01	–	–
Losartan	50 mg	cap/tab	1.97	–	0.69	–	0.76	1.23	0.42	–	0.25
Lovastatin	20 mg	cap/tab	–	–	–	–	5.93	–	8.29	–	–
Mebendazole	100 mg	cap/tab	–	–	–	–	–	104.25	–	–	17.05
Metformin	500 mg	cap/tab	7.49	4.03	11.28	6.53	3.91	14.42	6.11	–	0.87



(f) Public sector – LPG											
Medicine	Strength	Dosage / form	Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Metformin	850 mg	cap/tab	–	–	–	–	–	–	–	3.31	–
Methyldopa	250 mg	cap/tab	4.39	–	–	–	–	8.46	–	–	–
Metronidazole	250 mg	cap/tab	–	–	34.81	–	–	–	–	–	7.55
Metronidazole	40 mg/ml	suspension	–	–	–	–	–	13.57	–	–	–
Metronidazole	500 mg	cap/tab	–	–	–	–	–	–	24.87	–	–
Nevirapine	200 mg	cap/tab	–	–	–	–	–	–	–	–	–
Nifedipine Retard	20 mg	tab	24.88	–	8.22	34.62	–	22.15	–	5.99	3.89
Nystatin	10–0 U/mL	suspension	–	–	–	–	–	5.81	–	–	–
Omeprazole	20 mg	cap/tab	12.86	12.83	4.70	7.45	3.19	4.21	4.31	19.02	0.47
Paracetamol	500 mg	cap/tab	–	13.39	–	–	–	–	20.56	31.57	–
Phenytoin	100 mg	cap/tab	–	–	–	–	5.05	9.05	7.72	–	–
Pravastatin	20 mg	cap/tab	–	–	–	–	–	–	–	–	–
Promethazine	25 mg	cap/tab	–	–	–	–	–	32.09	–	–	–
Pyrazinamide	500 mg	cap/tab	–	–	–	–	–	–	–	–	–
Ranitidine	150 mg	cap/tab	30.34	35.03	4.94	32.69	16.91	11.85	8.13	48.28	0.93
Risperidone	2 mg	cap/tab	–	–	–	–	–	–	–	–	0.22
Salbutamol	0.1 mg/dose	inhaler	2.54	–	2.15	7.72	2.74	5.21	3.15	–	0.81
Salbutamol	4 mg	cap/tab	–	–	–	–	–	31.30	–	–	–
Simvastatin	20 mg	cap/tab	24.28	–	–	–	–	–	–	–	–
Streptomycin	1g/vial	injection	–	–	–	–	–	–	–	–	–
Sulfadoxine+Pyrimethamine	500+25 mg	cap/tab	–	–	–	–	8.59	16.62	–	–	5.44
Theophylline Retard	300 mg	cap/tab	–	–	–	–	–	–	–	–	–
Valproic acid	200 mg	cap/tab	–	–	–	–	–	–	–	–	–
Zidovudine	100 mg	cap/tab	–	–	–	–	–	–	–	–	–

## Annex 6. Affordability of standard treatments

(a) Private sector affordability										
Standard treatment	Strength	Affordability (no. of days' wages)								
		Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Acute infections										
Amoxicillin 250mg 1 capsule 3 times/day for 7 days	OB	2.3	2.4	–	1.0	1.0	–	–	–	–
	LPG	0.9	–	–	0.8	1.0	0.4	0.6	–	0.2
Co-trimoxazole suspension 5ml 2 times/day for 7 days	OB	0.9	–	0.6	0.3	0.4	1.4	0.5	0.3	0.8
	LPG	0.3	1.0	0.4	0.2	0.3	0.3	0.2	0.3	0.2
Ciprofloxacin 500mg 1 tablet as a single dose	OB	0.8	0.9	0.6	0.6	0.8	–	–	–	1.2
	LPG	0.2	0.8	0.2	0.4	0.2	0.1	0.0	0.1	0.1
Arthritis										
Diclofenac 25mg 1 tablet 2 times a day for 30 days	OB	4.6	5.2	2.0	1.1	4.5	5.4	3.2	1.3	5.0
	LPG	2.1	3.5	1.7	0.8	1.7	0.9	0.8	0.7	0.6
Asthma										
Salbutamol inhaler (1 inhaler over 30 days)	OB	1.2	3.0	0.9	0.9	1.4	2.6	–	0.3	1.5
	LPG	0.5	–	0.7	0.8	1.4	1.2	1.0	–	0.6
Beclometasone inhaler (1 inhaler over 30 days)	OB	2.4	2.7	1.6	–	3.1	–	–	–	–
	LPG	1.6	–	0.7	1.0	–	–	1.6	0.4	1.8
Depression										
Amitriptyline 25mg. 1 tablet 3 times a day for 30 days	OB	–	2.0	0.9	0.9	1.4	–	–	0.4	3.5
	LPG	1.4	–	–	–	–	1.7	1.3	–	1.8
Fluoxetine 200mg 2 capsules once a day for 30 days	OB	21.6	34.3	15.9	14.6	36.4	–	–	13.5	–
	LPG	8.6	–	7.2	5.9	7.7	2.0	1.6	9.8	1.6
Diabetes										
Glibenclamide 5mg 2 tablets daily for 30 days	OB	2.2	3.6	1.3	1.4	1.4	–	–	1.2	4.3
	LPG	1.1	3.3	0.3	0.6	0.9	0.7	0.4	0.3	0.7
Metformin 500mg 1 tablet 3 times daily for 30 days	OB	2.5	1.8	–	0.6	1.9	6.4	–	–	3.6
	LPG	1.2	1.6	2.9	0.6	1.6	2.7	1.6	–	1.4
Epilepsy										
Carbamazepine 200mg 1 tablet 2 times daily for 30 days	OB	3.3	4.0	1.8	1.6	2.7	6.7	4.2	–	3.7
	LPG	1.6	–	0.9	–	1.8	1.8	1.7	0.4	1.1
Phenytoin 100mg 1 capsule 3 times daily for 30 days	OB	1.4	1.2	1.0	0.9	–	–	–	0.6	2.5
	LPG	–	–	–	–	0.8	0.7	0.8	–	–

(a) Private sector affordability										
Standard treatment	Strength	Affordability (no. of days' wages)								
		Jordan	Kuwait	Lebanon	Morocco	Pakistan	Sudan	Syrian Arab Republic	Tunisia	Yemen
Hypertension										
Atenolol 50mg 1 tablet daily for 30 days	OB	3.0	2.7	1.8	–	2.9	5.3	1.8	–	2.7
	LPG	1.2	2.6	0.4	–	1.1	0.7	0.6	0.7	0.5
Captopril 25mg 1 tablet 3 times daily for 30 days	OB	7.0	8.0	4.5	5.5	9.6	11.5	–	4.4	8.1
	LPG	4.6	8.4	1.7	4.4	6.4	4.0	3.2	2.8	2.0
Hydrochlorothiazide 25mg 1 tablet daily for 30 days	OB	–	–	–	–	–	–	–	–	–
	LPG	1.2	–	0.5	0.7	–	2.5	–	–	–
Losartan 50mg 1 tablet daily for 30 days	OB	8.7	–	6.7	5.7	24.9	–	–	5.3	–
	LPG	5.7	–	3.2	–	5.4	4.0	2.0	–	2.7
Nifedipine Retard 20mg 1 tablet daily for 30 days	OB	–	4.2	2.1	2.9	2.4	–	–	1.3	8.6
	LPG	1.7	–	0.9	1.2	–	1.7	–	0.2	1.0
Peptic ulcer										
Ranitidine 150mg 1 tablet 2 times daily for 30 days	OB	8.6	17.8	8.2	7.2	8.5	–	5.7	7.1	5.8
	LPG	4.6	13.3	1.2	2.6	6.5	2.1	2.0	4.5	0.5
Omeprazole 20mg 1 capsule daily for 30 days	OB	19.9	22.0	14.6	10.6	23.7	–	–	–	13.5
	LPG	7.7	19.3	4.5	2.3	4.8	2.9	4.3	7.0	1.1
Schizophrenia										
Fluphenazine 25mg/ml injection; 1 injection per month	OB	–	–	0.9	0.4	1.6	–	–	–	1.6
	LPG	–	–	–	–	1.2	–	–	–	–

(b) Public sector affordability				
Standard treatment	Strength	Affordability (no. of days' wages)		
		Jordan	Sudan	Yemen
Acute infections				
Amoxicillin 250mg 1 capsule 3 times/day for 7 days	OB	–	–	–
	LPG	0.10	0.31	0.2
Co-trimoxazole suspension 5ml 2 times/day for 7 days	OB	–	–	–
	LPG	0.08	0.16	0.1
Ciprofloxacin 500mg 1 tablet as a single dose	OB	–	–	–
	LPG	0.01	0.04	–
Arthritis				
Diclofenac 25mg 1 tablet 2 times a day for 30 days	OB	–	–	–
	LPG	–	0.85	–
Asthma				
Salbutamol inhaler (1 inhaler over 30 days)	OB	–	2.59	–
	LPG	–	0.67	–
Beclometasone inhaler (1 inhaler over 30 days)	OB	–	–	–
	LPG	0.50	–	–
Depression				
Amitriptyline 25mg. 1 tablet 3 times a day for 30 days	OB	–	–	–
	LPG	–	1.69	–
Fluoxetine 200mg 2 capsules once a day for 30 days	OB	–	–	–
	LPG	0.72	–	–
Diabetes				
Glibenclamide 5mg 2 tablets daily for 30 days	OB	–	–	–
	LPG	0.06	0.57	–
Metformin 500mg 1 tablet 3 times daily for 30 days	OB	–	–	–
	LPG	–	4.05	–
Epilepsy				
Carbamazepine 200mg 1 tablet 2 times daily for 30 days	OB	–	–	–
	LPG	0.24	1.89	–
Phenytoin 100mg 1 capsule 3 times daily for 30 days	OB	0.90	–	–
	LPG	–	1.51	–

(b) Public sector affordability				
Standard treatment	Strength	Affordability (no. of days' wages)		
		Jordan	Sudan	Yemen
Hypertension				
Atenolol 50mg 1 tablet daily for 30 days	OB	–	–	–
	LPG	–	0.60	–
Captopril 25mg 1 tablet 3 times daily for 30 days	OB	–	–	–
	LPG	0.17	4.05	0.5
Hydrochlorothiazide 25mg 1 tablet daily for 30 days	OB	–	–	–
	LPG	–	–	–
Losartan 50mg 1 tablet daily for 30 days	OB	–	–	–
	LPG	–	–	–
Nifedipine Retard 20mg 1 tablet daily for 30 days	OB	–	–	–
	LPG	0.05	1.62	–
Peptic ulcer				
Ranitidine 150mg 1 tablet 2 times daily for 30 days	OB	–	–	–
	LPG	0.22	2.47	0.3
Omeprazole 20mg 1 capsule daily for 30 days	OB	–	–	–
	LPG	0.33	2.89	–
Schizophrenia				
Fluphenazine 25mg/ml injection; 1 injection per month	OB	–	–	–
	LPG	–	–	–

## Annex 7. Examples of the cumulative effects of price components

Jordan: Private sector, originator brand (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Amoxicillin 250mg × 20cap	Cost and freight	NA	NA	4.04	0.00%
	Insurance fees	percent	1.0%	4.08	1.00%
	Bank fees	percent	1.0%	4.12	2.01%
	Transport and clearance	percent	1.5%	4.18	3.54%
	Added fees	percent	0.2%	4.19	3.75%
	Wholesale mark-up	percent	19.0%	4.99	23.46%
	Retail mark-up	percent	26.0%	6.28	55.56%
	VAT	percent	4.0%	6.54	61.78%
Jordan: Private sector, generic (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Amoxicillin 250mg × 20cap	Cost and freight	NA	NA	2.06	0.00%
	Insurance fees	percent	1.0%	2.08	1.00%
	Bank fees	percent	1.0%	2.10	2.01%
	Transport and clearance	percent	1.5%	2.13	3.54%
	Added fees	percent	0.2%	2.14	3.75%
	Wholesale mark-up	percent	19.0%	2.54	23.46%
	Retail mark-up	percent	26.0%	3.20	55.56%
	VAT	percent	4.0%	3.33	61.78%
Kuwait: Private sector, originator brand/lowest priced generic (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Beclometasone 0.05 mg inhaler	CIF price	NA	NA	2.09	0.00%
	Agent profit	percent	35.00%	2.82	35.00%
	Pharmacy profit	percent	26.00%	3.55	70.10%

## Medicine prices, availability, affordability and price components

Lebanon: Private sector, originator brand/lowest priced generic (imported)*					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Atenolol 30 × 50 mg tabs	CIF price	NA	NA	2219.40	0.00%
	Customs clearing and commission	percent	11.5%	2474.63	11.50%
	Importer profit	percent	10.0%	2722.09	22.65%
	Pharmacist profit	percent	30.0%	3538.72	59.45%
Morocco: Private sector, most sold generic (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Atenolol 60 × 100 mg tab	Ex-factory price	NA	NA	73.45	0.00%
	Port fee/packaging	fixed fee	10.83	84.28	14.74%
	Royalties	percent	5%	88.49	20.48%
	Packaging	percent	5%	92.91	26.50%
	Wholesale mark-up	percent	10%	102.20	39.15%
	Retail mark-up	percent	30%	132.87	80.89%
Morocco: Private sector, originator brand (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Amitriptyline 100 × 25 mg tab	FOB price	NA	NA	22.53	0.00%
	File preparation fee	fixed fee	0.054	22.58	0.24%
	Custom fee	percent	0%	22.58	0.24%
	VAT	percent	7%	24.16	7.26%
	Wholesale mark-up	percent	10%	26.58	17.98%
	Retail mark-up	percent	30%	34.56	53.38%
Pakistan: Private sector, generic (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Amoxicillin 100 × 250 mg cap	Central research fund	NA	NA	234.45	0%
	Local distribution	percent	1.00%	236.80	1%
	Wholesale mark-up	percent	5.00%	249.26	6%
	Retail mark-up	percent	2.00%	254.35	8%
	Manufacturer's selling price	percent	15.00%	299.23	28%

\* In Lebanon, locally produced medicine would only incur the 'importer' profit and pharmacist profit (total 43% cumulative mark-up)

Pakistan: Private sector, originator brand (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Amoxicillin 100 × 250 mg cap	Manufacturer's selling price	NA	NA	230.42	0%
	Central research fund	percent	1.00%	232.72	1%
	Local distribution	percent	10.00%	258.58	12%
	Wholesale mark-up	percent	2.00%	263.86	15%
	Retail mark-up	percent	15.00%	310.42	35%
Sudan: Private sector, originator brand (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Atenolol 28 × 50 mg tabs	Cost and freight price	NA	NA	1740.00	0.00%
	Insurance	percent	0.03%	1740.52	0.03%
	Bank fees	percent	1.50%	1766.63	1.53%
	Customs duty	percent	10.00%	1943.29	11.68%
	Standards/metrology rganization	percent	1.00%	1962.73	12.80%
	Ministry of Defence stamp	percent	1.00%	1982.35	13.93%
	Pharmacy career fund	percent	1.00%	2002.18	15.07%
	Administration/other	percent	5.00%	2102.29	20.82%
	Wholesale mark-up	percent	15.00%	2417.63	38.94%
	Retail mark-up	percent	20.00%	2901.15	66.73%
Syrian Arab Republic: Private sector, originator brand (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Aciclovir 20 × 200 mg tabs	Manufacturer's price	NA	NA	888	0.00%
	Wholesale mark-up	percent	8%	960	8.10%
	Retail mark-up	percent	11%	1065	19.93%
Syrian Arab Republic: Private sector, lowest priced generic (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Aciclovir 20 × 200 mg tabs	Manufacturer's price	NA	NA	232	0.00%
	Wholesale mark-up	percent	8%	250	7.90%
	Retail mark-up	percent	12%	280	20.85%

Tunisia: Private sector, originator brand (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Ranitidine 20 × 150mg tabs	Manufacturer's selling price	NA	NA	11.53	0.00%
	VAT	percent	6%	12.22	6.00%
	Wholesale mark-up	percent	8.7%	13.28	15.22%
	Retail mark-up (31.6%–42.9% regressive)	percent	31.6%	17.48	51.63%
Tunisia: Public sector, lowest priced generic (local manufacture)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Atenolol 30 × 50mg tabs	Manufacturer's selling price	NA	NA	11.53	0.00%
	VAT	percent	6%	12.22	6.00%
	Wholesale mark-up	percent	8.7%	13.28	15.22%
Tunisia: Private sector, originator brand (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Omeprazole 14 × 20mg caps	CIF price	NA	NA	27.54	0.00%
	Wholesale mark-up	percent	8.7%	29.93	8.70%
	Retail mark-up (31.6%–42.9% regressive)	percent	31.6%	39.39	43.05%
Tunisia: originator brand, imported, public sector					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Phenytoin 100 × 100mg caps	CIF price	NA	NA	3.58	0.00%
	Wholesale mark-up	percent	10%	3.94	10.00%



Yemen: Private sector, lowest priced generic (imported)					
Medicine	Type of charge	Charge basis	Amount of charge	Price of dispensed quantity	Cumulative % mark-up
Aciclovir 20 × 200mg tabs	CIF price	NA	NA	810.00	0.00%
	Bank charges	percent	1.00%	818.10	1.00%
	Drug Support Fund	percent	1.00%	826.28	2.01%
	Customs	percent	5.00%	867.60	7.11%
	Storage and transportation	percent	5.00%	910.97	12.47%
	Taxes	percent	5.00%	956.52	18.09%
	Others	percent	1.00%	966.09	19.27%
	Wholesale benefits	percent	10.00%	1062.70	31.20%
	Retail benefits	percent	20.00%	1275.24	57.44%