

United Arab Emirates

Medicine prices, availability, affordability and price components

Medicine prices matter

Rapidly rising costs of health care and high medicine prices are a growing concern worldwide, especially in developing and transitional countries where patients often have to pay the full price of medicines. This brief report about the prices and availability of essential medicines in the United Arab Emirates is one of a series of papers summarizing the results of medicine price and availability surveys carried out around the globe using a standard survey methodology developed by the World Health Organization and Health Action International (HAI)¹.

This survey was conducted in 2006 by the Ministry of Health, which studied the price, availability and affordability of 25 medicines.

The survey found that in the United Arab Emirates:

- Overall public procurement prices of generics were reasonable, however, some were high priced.
- For many medicines, the government is buying high priced originator brands when lower priced generics are available.
- While medicines are free in the public sector, their availability is sub-optimal.
- In private pharmacies, prices of both originator brand and generic medicines are very high.
- On average there is a nearly a threefold difference between prices of originator brands and generic equivalents in the private sector.
- In private pharmacies the availability of originator brands was higher than generics.
- Many treatments are unaffordable to those on low wages when purchased from private pharmacies.

Generally, across the WHO Eastern Mediterranean Region, a similar picture emerges: unreliable availability of medicines in the public sector, people having to pay for medicines in the private sector at frequently unaffordable prices; and the need for stronger

government action to introduce or improve national medicines policies and effective pricing policies².

United Arab Emirates

The population of the United Arab Emirates is 4.764 million (2008 estimation by the Ministry of Economics). According to the International Monetary Fund, in 2008 GDP was US\$ 260.141 billion and GDP per capita was US\$ 54 607 with a forecast growth of - 0.6% in 2009. From these figures, per capita GDP is very high, ranked around 15th in the world.

Overall health expenditure is estimated to be US\$ 5.4 billion in 2009, which equates to 2.6% of GDP. Per capita health spending is US\$ 926 (Ministry of Economics). A number of health care reforms are under way. In 2008, the Ministry of Health launched the 2008–2010 Strategic Framework, which focuses on enhancing regulatory practices, improving the level of scientific, technical and administrative personnel and upgrading health facilities. Reforms also aim to increase access to health care for all expatriates, and improve the quality of care provided in both the public and private sector. The focus will be on preventive care rather than curative treatment since the United Arab Emirates is burdened by chronic diseases such as diabetes. The federal government is planning to introduce a national health insurance scheme throughout the country over the next three years (2009–2012). The Abu Dhabi local health authority has commenced implementing compulsory insurance with a basic plan for each resident.

A wide range of public health facilities are run by the Ministry of Health and local health authorities including the military, providing free medical and pharmaceutical services for all nationals. Non-national residents (over 80% of the total population) have to pay for these services out-of-pocket unless covered by insurance provided by some employers (mainly oil companies and other international companies).

The federal Ministry of Health is the regulatory body that sets medicines prices in the United Arab Emirates. External (international) reference pricing is primarily used to set prices of originator brand products, with generics priced at 30% less than the originator brand price. Since the survey, the Ministry of Health has taken several measures to reduce medicine prices including reducing the cumulative mark-ups for chronic disease medicines from 44% to 34%.

¹ WHO/HAI. *Medicine prices: a new approach to measurement*, Geneva, World Health Organization, 2003. Available from <http://www.haiweb.org/medicineprices>

² WHO/HAI. *Medicine prices, availability, affordability and price components: a synthesis report of medicine price surveys undertaken in selected countries of the WHO Eastern Mediterranean Region*, Cairo, WHO Regional Office for the Eastern Mediterranean, 2009.



**World Health
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Initiatives to increase the use of generics and stricter prescribing practices are under way. Since the beginning of 2009, the Abu Dhabi Health Authority requires prescribing by the generic name. Rational drug use policies include the strengthening of formulary selection rules, and social marketing campaigns are periodically undertaken by the federal and local health authorities.

Medicine price and availability survey

The survey was designed to answer the following questions:

- How efficient is the government procurement system in obtaining low priced medicines?
- What is the availability of originator brand products and generic equivalents in public outlets?
- What is the price and availability of medicines in private pharmacies?
- What is the price difference between originator brands and their generic equivalents?
- What is the level of the various mark-ups which contribute to the retail price of medicines?
- How affordable are medicines purchased in private pharmacies for people on low incomes?

A total of 25 medicines were surveyed; 23 medicines³ from the WHO/HAI core list with pre-set dosage forms, strengths and recommended pack sizes, and 2 supplementary medicines important to prevalent health problems in the United Arab Emirates.

In the private sector, prices and availability were recorded for the originator brand product (OB) and the lowest priced generic equivalent product (LPG) which was determined at each facility. In the public sector only availability was recorded as medicines are dispensed free of charge to United Arab Emirates nationals.

Data was collected from a total of 18 public health facilities and 23 private retail pharmacies across the seven emirates of the federation (Table 1). The sampling of private pharmacies did not follow the WHO/HAI methodology; the pharmacies were those included in

Table 1. Measurements in each sector

Measurement	Public sector	Private sector
Price to patient	–	✓
Availability	✓	✓
Affordability	–	✓
Procurement price	✓	–
No. of facilities visited	18 medicine outlets	23 retail pharmacies

³ Reflecting the global burden of disease, WHO/HAI, *Medicine prices, a new approach to measurement*, 2003

a previous survey (mix of high and low-volume outlets, in rural and urban areas.)

Public sector procurement prices were obtained from the Ministry of Health. The medicines are procured through the Gulf Cooperation Council (GCC) procurement system and distributed across the United Arab Emirates.

Presentation of price information

The WHO/HAI survey methodology presents prices in local currency and as median price ratios (MPR). The MPR is calculated by dividing the local price by an international reference price (converted to local currency). An MPR of 1 means the local price is equivalent to the reference price, whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the 2005 Management Sciences for Health (MSH) *International Drug Price Indicator Guide*⁴ (median prices of high quality multi-source medicines offered to developing and middle-income countries by different suppliers); the use of reference prices facilitates international comparisons.

Interpretation of findings

Country specific factors such as pricing policies, market size, competition, national economic and other factors may influence prices. For the purposes of these surveys, in a low- or middle-income country an MPR of less than or equal to 1 for public sector procurement prices is considered to indicate acceptable (not excessive) prices.

Affordability

Affordability is calculated as the number of days the lowest paid unskilled government worker would have to work to pay for one month's treatment for medicines for chronic conditions, and a treatment course for acute conditions.

At the time of the survey, the lowest paid unskilled government worker earned 30 UAE dirhams (US\$ 8.17) per day. Since patients do not pay for medicines in the public sector, affordability was calculated using private retail pharmacy prices only. Having to spend more than 1 day's income per month on family medicine needs could be considered to be unaffordable.

Of the three standard treatments for respiratory tract infections, ciprofloxacin (originator brand and lowest priced generic equivalent) was much more unaffordable than amoxicillin or co-trimoxazole (Table 2). For chronic diseases, a United Arab Emirates worker would generally need more than 1 day's wages to purchase many, but not all, of the standard treatments if buying low-priced generics. They may be unable to pay for monthly treatment with fluoxetine (nearly 8 days' wages), omeprazole (4.5

⁴ <http://erc.msh.org>

Table 2. Affordability: number of days' wages to purchase treatments from the private sector

Medicine	Originator brand	Lowest priced generic
Diabetes		
Metformin	0.8	0.5
Glibenclamide	1.6	0.8
Hypertension		
Atenolol	1.3	0.7
Captopril	2.3	1.6
Losartan	4.0	–
Nifedipine retard	3.8	2.4
Hyperlipidaemia		
Simvastatin	7.7	3.6
Arthritis		
Diclofenac	2.5	0.8
Peptic ulcer		
Omeprazole	9.4	4.5
Ranitidine	7.4	1.9
Asthma		
Beclometasone inhaler	1.4	–
Salbutamol inhaler	0.9	0.6
Depression		
Amitriptyline	1.2	–
Fluoxetine	7.9	–
Respiratory tract infection		
Adult: Amoxicillin	1.2	0.4
Ciprofloxacin	5.6	2.4
Child: Co-trimoxazole susp.	0.5	0.2

Tab/cap unless otherwise stated

days' wages), simvastatin (3.6 days' wages) and nifedipine retard (2.4 days' wages). However, medicines can be obtained free by visiting government health facilities.

Should this United Arab Emirates worker need treatment for hypertension, arthritis and a peptic ulcer, then they would have to use 3.4 to 15.9 days' of salary every month to purchase needed medicines – depending upon the choice of medicines and whether originator brand or generic is dispensed⁵.

Public sector procurement prices

The overall procurement price for originator brands was 4.92 times the international reference price (i.e. 392% more) and for lowest priced generic versions it was 1.25 times the international reference price (i.e. 25% more). Fifty per cent (50%) of the originator brands procured by the Ministry of Health were priced between 2.4 and 9.1 times the reference prices; for generics half

⁵ One antihypertensive (atenolol, captopril, losartan or nifedipine retard); diclofenac for arthritis; and one ulcer healing medicine (omeprazole or ranitidine)

the medicines were priced between 0.6 and 1.8 times the reference prices (Table 3).

For 9 medicines the procurement price was less than the international reference price (e.g. generic captopril was 62% less) providing evidence of efficient purchasing. However, in each case higher priced originator brands were also being procured. Of the 20 medicines purchased as both originator brands and generic equivalents, the originator brands were on average 4.5 times the price of the generics.

Table 4 presents medicines where procurement prices were high for originator brands and/or generics, as well as those where there is a large price difference between the originator and generic equivalents. For example, originator brand and generic fluconazole were 63 and 15 times the international reference price, respectively, and the price of originator brand ciprofloxacin was 37 times the price of the generic. Only the originator brand versions

Table 3. Number of times more expensive: public sector procurement prices compared to international reference prices

	Originator brand	Lowest priced generic
Median MPR (interquartile range)	4.92 (2.4–9.1)	1.25 (0.6–1.8)
Minimum	0.9	0.1
Maximum	63.1	16.6
No. of medicines	22	22

Table 4. Number of times more expensive: public sector procurement prices compared to international reference prices

Medicine	Originator brand	Lowest priced generic	Ratio originator brand : lowest priced generic
Aciclovir	9.5	1.4	6.8
Amitriptyline	21.5	5.2	4.1
Atenolol	7.7	1.9	4.2
Captopril	7.1	0.4	18.6
Ceftriaxone inj.	2.3	0.6	3.9
Ciprofloxacin	44.0	1.2	36.7
Diazepam	–	16.6	–
Fluconazole	63.1	14.6	4.3
Fluoxetine	31.3	1.0	32.3
Hydrochlorothiazide	–	13.1	–
Omeprazole	2.9	0.5	5.8
Phenytoin	10.2	–	–
Ranitidine	6.8	0.4	17.9

Tab/cap unless otherwise stated

of fluphenazine injection and phenytoin were purchased despite generic versions being available in most of the market.

Public sector availability

Availability data only was collected from the 18 public sector facilities as patients do not pay directly for medicines in the United Arab Emirates. Across the 25 medicines surveyed, the availability of generics in public sector facilities was 61.1% while the availability of originator brands was 16.7% (Table 5).

Table 6 presents the availability of any version (originator brand or generic) of the surveyed medicines in the public sector facilities. The availability of 9 medicines was over 90% (atenolol, amoxicillin, co-trimoxazole suspension, diazepam, glibenclamide, metformin, ranitidine, salbutamol and simvastatin) while another 8 medicines had very poor availability at 40% or less (fluphenazine injection, aciclovir, amitriptyline, ceftriaxone injection, ciprofloxacin, fluconazole, fluoxetine and phenytoin).

Private sector patient prices

Patients pay very high prices for medicines (originator brands and generics) when purchased from private retail pharmacies in the United Arab Emirates. Overall, originator brands were 23.5 times higher than the international reference price, with half of them (interquartile range) between 10.6 and 44.0 times higher. Overall, lowest priced generics were about 13.8 times the international reference price (interquartile range 8.2–20.5) (Table 7).

Table 5. Availability of surveyed medicines in public health facilities (*n* = 25 medicines)

	Originator brand	Lowest priced generic
Median availability	16.7%	61.1%
(interquartile range)	(5.6–22.2%)	(22.2–94.4%)

Table 6. Availability of surveyed medicines in public health facilities (*n* = 25 medicines)

Availability	Medicine
Not found	Fluphenazine inj
11–40%	Aciclovir, amitriptyline, ceftriaxone inj., ciprofloxacin, fluconazole, fluoxetine, phenytoin
41–50%	Beclometasone inhaler, carbamazepine
61–78%	Captopril, diclofenac, hydrochlorothiazide, losartan, nifedipine retard, omeprazole
94%	Atenolol, co-trimoxazole susp., metformin, simvastatin
100%	Amoxicillin, diazepam, glibenclamide, ranitidine, salbutamol inhaler

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Table 7. Number of times more expensive: patient prices in private retail pharmacies compared to international reference prices

	Originator brand	Lowest priced generic
Median MPR	23.52	13.75
(interquartile range)	(10.6–44.0)	(8.2–20.5)
Minimum	1.8	1.2
Maximum	121.9	84.5
No. of medicines	24	19

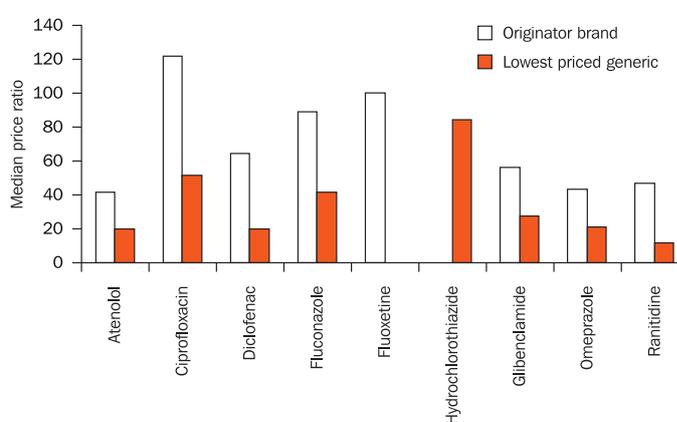


Figure 1. Number of times more expensive: patient prices in private retail pharmacies compared to international reference prices

Medicine prices in private retail pharmacies are set by the Ministry of Health. There was a negligible variation in the prices of the same medicine in different pharmacies and regions, hence adherence to regulated prices is high.

Figure 1 presents several medicines where patient prices were high for originator brands and generics – as well as those where there is a large difference between the originator and generic equivalent. For example, originator and generic ciprofloxacin were 122 and 52 times the international reference price, respectively, and originator brand ranitidine was 3.9 times the price of the lowest priced generic equivalent.

When the prices of matched pairs were analysed (only medicines where both product types were found), originator brands were 2.7 times the price of lowest priced generics for the 18 common medicines.

Table 8. Availability of surveyed medicines in private pharmacies ($n = 25$ medicines)

	Originator brand	Lowest priced generic
Median availability (interquartile range)	100% (100–100%)	73.9% (17.4–91.3%)

Table 9. Availability of the originator brands in private pharmacies ($n = 25$ medicines)

Availability	Medicine
Not found	Hydrochlorothiazide
61–90%	Ceftriaxone inj., diazepam, fluoxetine, phenytoin
100%	Aciclovir, amitriptyline, amoxicillin, atenolol, beclometasone inhaler, captopril, carbamazepine, ciprofloxacin, co-trimoxazole susp., diclofenac, fluconazole, fluphenazine inj., glibenclamide, losartan, metformin, nifedipine retard, omeprazole, ranitidine, salbutamol inhaler, simvastatin

Tab/cap unless otherwise stated

Table 10. Availability of generics in private pharmacies ($n = 25$ medicines)

Availability	Medicine
Not found	Amitriptyline, beclometasone inhaler, fluoxetine, fluphenazine inj., losartan, phenytoin
11–40%	Captopril, carbamazepine, ceftriaxone inj., diazepam
41–50%	Salbutamol inhaler
61–80%	Fluconazole, nifedipine retard, simvastatin
81–96%	Aciclovir, amoxicillin, atenolol, ciprofloxacin, co-trimoxazole susp., diclofenac, glibenclamide, metformin, omeprazole, ranitidine
100%	Hydrochlorothiazide

Tab/cap unless otherwise stated

Private sector availability

Across the 25 medicines surveyed, the availability of originator brands in private sector facilities was 100% while the availability of generics was less at 73.9% (Table 8).

Tables 9 and 10 present the availability of originator brands and generics respectively in private pharmacies. No generics were found for some common multi-source medicines e.g. amitriptyline, beclometasone inhaler, fluphenazine injection.

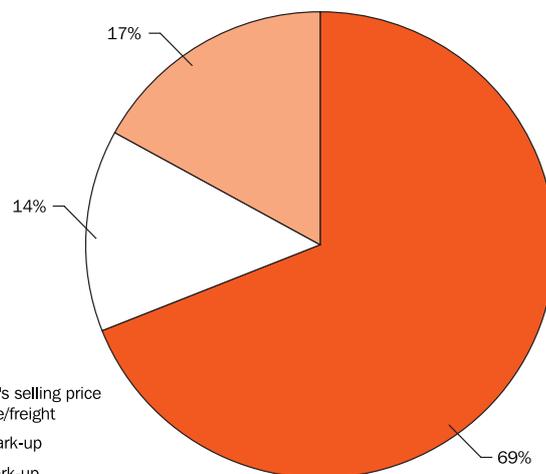


Figure 2. Components of the final patient price for imported originator brand ciprofloxacin, private sector

Price components

Mark-ups are regulated in the United Arab Emirates. At the time of the study, both the wholesale and retail mark-ups were 20% for originator brands and generics, making a cumulative mark-up of 44%, although this was not verified in the field (Figure 2).

Recommendations of the investigators

1. Conduct a new survey with a larger number of medicines across a broader range of therapeutic groups.
2. Investigate the availability issues in the public sector (by therapeutic group).
3. Enforce policies and controls on prescribing and rational use of medicines.
4. Implement public awareness campaigns and encourage the public to share decision-making with physicians in the selection of cost-effective medicines.
5. Improve transparency by publishing prices by brand name on the Ministry of Health website for easy reference by the public, doctors and pharmacists.
6. Study alternative methods of setting patient prices, encourage competitiveness between generics and lower prices.

Further information

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The full survey report and data can be found at <http://www.haiweb.org/medicineprices/surveys>