

# Kyrgyzstan

## Medicine prices, availability, affordability & price components

### Medicine prices matter

Rapidly rising costs of health care and high medicine prices are a growing concern worldwide, especially in developing countries where patients often have to pay the full price of medicines. This brief report about medicine prices and availability in Kyrgyzstan 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<sup>1</sup>.

This survey was conducted in 2005 by the Drug Information Centre of the Department of Drug Provision and Medical Equipment, with permission from the Ministry of Health. It uses a group of 19 medicines, with pre-set dosage forms, strengths and recommended pack sizes that are relevant to the global burden of disease, plus 9 selected medicines of national importance.

### This survey found that in Kyrgyzstan:

- Median availability of the medicines studied was 80% in private pharmacies, largely as generic medicines; originator brands were not widely found
- Prices varied between pharmacies
- Where originator brands were found, prices were about 3 times more than lowest priced generic versions
- Overall generic medicines in the private sector were reasonably priced compared to international reference prices, but prices for some medicines were very high
- Availability was highest in the more affluent regions
- Many courses of treatment were not affordable for a significant proportion of the population
- Wholesale mark-ups were higher than retail mark-ups, and mark-ups were higher for generics than originator brands; cumulative mark-ups ranged from 44% - 63%
- Procurement prices paid by hospitals were generally reasonable, although prices for some individual medicines were high

### Kyrgyzstan medicine price & availability survey

Kyrgyzstan has a population of 5 million and is located in Central Asia bordering Kazakhstan, Uzbekistan, Tajikistan, and China. 40.8% of the population lives below the national poverty line.

The health system is financed from several sources: the state budget, the Mandatory Health Insurance Fund, a substantial but unknown amount of out-of-pocket payments, and loans/grants from international cooperating partners.

Approximately 10% of the health care budget is used to purchase medicines. More than 95% medicines are imported and in 2004 medicine imports amounted to US\$ 25 million – meaning that the per capita drug expenditure was US\$5 (import price).

For the more than 80% of the population that is covered by compulsory health insurance, contributions are made on their behalf to the national Mandatory Health Insurance Fund which entitles them to reduced co-payments for inpatient care and outpatient specialist services, and also provides access to an outpatient drug benefit package; patients have to make a 30% - 70% co-payment.

There are an estimated 1878 private pharmacies in the country, most of which are located in the cities. In some remote regions neither public, nor private, outlets exist. There are no public or non-governmental pharmacies in Kyrgyzstan.

The Essential Medicines List (EML) is used for procurement in public hospitals. However, if a required medicine is not available in the public sector (secondary and tertiary level), the patient is asked to purchase it from a private pharmacy. A policy of generic substitution by pharmacists has been implemented.

The survey was designed to answer the following questions:

- What is the patient price and public sector procurement price of a selection of medicines?
- How do these prices compare to international prices?
- What is the difference in price of the same medicine in different parts of the country?
- What is the difference in price of originator brands and their generic equivalents?
- What taxes and duties are levied on medicines and what is the level of the various mark-ups that contributes to the retail price of medicines?
- How affordable are medicines?

A total of 28 medicines were surveyed in February-May 2005, 19 from the WHO/HAI core list and 8 supplementary medicines. Prices and availability were recorded for the originator brand product (OB), and the lowest priced generic equivalent (LPG) which was determined at each facility<sup>2</sup>.

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

<sup>2</sup> The price and availability of a centrally determined most sold generic was also measured; however this aspect of the methodology is no longer recommended – and is not reported in this summary report.

The price and availability data was collected from a total of 30 private retail pharmacies across 6 administrative areas: the capital, Bishkek; and 5 oblasts: Chui, Naryn, Osh, Jalal-Abad, and Batken<sup>3</sup>. In the public sector, procurement prices (tender prices) were obtained from 2 wholesalers. There are no public sector facilities in Kyrgyzstan.

**Table 1.** Measurements in each sector.

Measurement	Public sector	Private sector
Price to patient	-	✓
Availability	-	✓
Affordability	-	✓
Procurement price	✓	-
No. of facilities visited	0	30

### Presentation of price information

The WHO/HAI survey methodology presents prices 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 2003 Management Sciences for Health (MSH) International Drug Price Indicator Guide<sup>4</sup> (median prices of quality generics offered to developing countries by different suppliers); use of reference prices facilitates international comparisons.

### Interpretation of findings

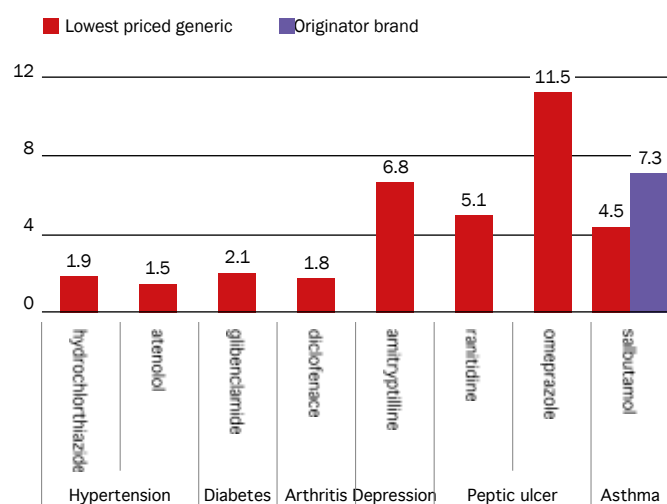
Country specific factors such as pricing policies; market size; competition; national economic and other factors may influence prices. For the purposes of these surveys, in a developing country an MPR of less than or equal to 1 for public sector procurement prices is considered to indicate acceptable (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 treatment course for an acute condition or one month's treatment for a chronic condition. At the time of the survey, the lowest paid government worker earned 20 soms (US\$ 0.50) per day.

The lowest paid government worker would generally need 1.5 - 11.5 day's wages to purchase a standard treatment from a private

pharmacy (figure 1). As the person and family members often have a number of conditions requiring treatment, even purchasing lowest priced generics requires a significant proportion of income to be spent.



**Figure 1.** Affordability: number of days' wages for one month's treatment

An acute episode of a respiratory infection would require 2.5 days wages to purchase a course of the lowest priced generic of amoxicillin (for an adult) or co-trimoxazole suspension (child).

### Public sector procurement prices

Public procurement prices are tender prices paid by hospitals. The median MPR for the lowest priced generic equivalent was 1.29, with 50% of the medicines in the range of 1.03 - 2.04. The procurement price for the one originator brand (mebendazole, an older off-patent product) was found to be 59.47 times the international reference price.

**Table 2.** Number of times more expensive: public sector procurement prices compared to international reference prices.

	Originator brand	Lowest priced generic
Median MPR (interquartile range)	59.47	1.29 (1.03 - 2.04)
Minimum		0.28
Maximum		4.88
No. of medicines	1	17

<sup>3</sup> Kyrgyzstan is divided into 7 oblasts (regions): those listed plus Issyk-Kul, Talas and Bishkek, and the capital as a separate administrative region.

<sup>4</sup> <http://erc.msh.org>

While the median MPR for the lowest priced generics was close to the international reference price (1.29), the prices of some individual medicines were high e.g. hydrochlorothiazide tablets were nearly 5 times the international reference price (table 3).

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

	Lowest priced generic
amitriptyline 25mg tab	3.26
diclofenac 25mg tab	2.71
hydrochlorothiazide 25mg tab	4.88
metronidazole 250mg tab	2.04
carbamazepine 200mg tab	2.06

### Private sector patient prices

Price and availability data was collected from 30 private retail pharmacies in Bishkek and five administrative areas. In the private sector, the prices of originator brands were 5.42 times the international reference prices, with 50% in the range of approximately 5 to 30 times the reference prices (table 4). For the lowest price generic equivalents, prices were 2.56 times the international reference price, with 50% of the medicines in the range of approximately 1.6 to 4.3 times the international reference prices.

**Table 4.** Number of times more expensive: patient prices in the private sector compared to international reference prices.

	Originator brand	Lowest priced generic
Median MPR (interquartile range)	5.42 (5.08 - 29.95)	2.56 (1.63 - 4.29)
Minimum	1.82	0.48
Maximum	99.11	31.70
No. of medicines	7	23

Overall, lowest priced generics were reasonably priced, however, some were expensive e.g. fluconazole 150mg tablets were 31 times the international reference price. Table 5 lists medicines over four times the international reference price. The prices of some originator brands were also high, in particular mebendazole 100mg tablets and metronidazole 250mg tablets which were 99 and 42 times the international reference price respectively.

**Table 5.** Number of times more expensive: patient prices in the private sector compared to international reference prices.

	Lowest priced generic
amitriptyline 25mg tab	4.81
ciprofloxacin 500mg tab	6.75
co-trimoxazole paed susp	4.91
fluconazole 150mg tab	31.7
glibenclamide 5mg tab	4.16
hydrochlorothiazide 25mg tab	8.71
nifedipine retard 20mg tab	4.42

There was marked variation in the prices of some medicines between pharmacies as demonstrated in table 6 e.g. 50%<sup>5</sup> of the prices for ciprofloxacin varied from 2.4 to 13.8 times the international reference price – a difference of 5.75 times between the 25th and 75th percentiles.

**Table 6.** Median patient prices and 25th and 75th percentiles in the private sector.

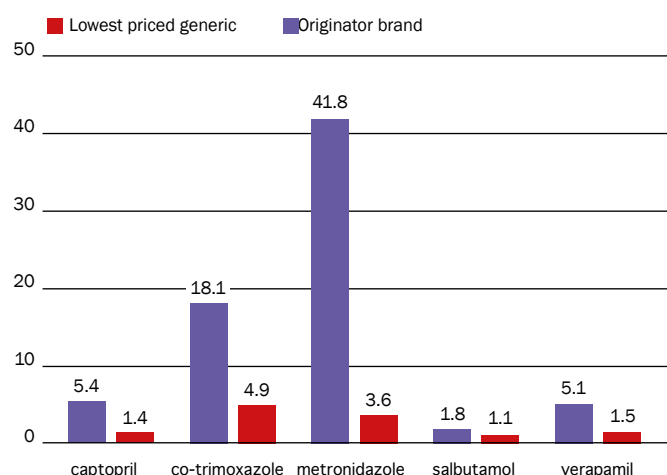
	Median	25 %ile	75 %ile
aciclovir 200mg tab	0.6	0.5	0.9
carbamazepine 200mg tab	1.6	1.3	2.4
ciprofloxacin 500mg tab	6.7	2.4	13.8
diclofenac 25mg tab	2.9	1.9	3.4
fluconazole 150mg tab	31.7	29.3	73.1
glibenclamide 5mg tab	4.2	2.2	5.9
metronidazole 250mg tab	3.6	2.6	4.7

Overall, prices of lowest priced generics ranged from a median MPR of 1.8 in the capital Bishkek to 2.9 in Jalalabad and Osh.

<sup>5</sup> Illustrated by the 25th and 75th percentiles

## Brand premiums in the private sector

Overall, for the five medicines where both originator and generic versions were found (in at least four pharmacies), originator brands were 3.6 times the price of the lowest priced generics. Figure 2 shows the median price ratios of these five medicines (originator brands and lowest priced generics).



**Figure 2.** Number of times more expensive: patient prices in the private sector compared to international reference prices.

For the five medicines where both originator and lowest priced generics were found, generics were generally 26-30% of the originator brand price. Originator brand metronidazole was a much larger multiple of the generic price (1,156%); whereas the originator and generic prices for salbutamol were much closer.

**Table 7.** Ratios of prices of lowest priced generic and originator brand medicines.

	LPG: OB	OB: LPG
captopril 25mg tab	26%	390%
cotrimoxazole paed susp	27%	368%
metronidazole 250mg tab	9%	1,156%
salbutamol inhaler	62%	161%
verapamil 80mg tab	30%	335%
<b>overall</b>	<b>26%</b>	<b>390%</b>

## Private sector availability

As shown in Table 8, the median availability of the 28 originator brands surveyed was 0%. Seventeen of the twenty eight originator brands were not found in any of the private pharmacies surveyed. In contrast, generic products were more frequently available. For lowest priced generics, the median availability was relatively high at 80%.

**Table 8.** Availability in private pharmacies.

	Originator brand	Lowest priced generic
Median availability (interquartile range)	0% (0-10.8%)	80% (43.3-94.2%)

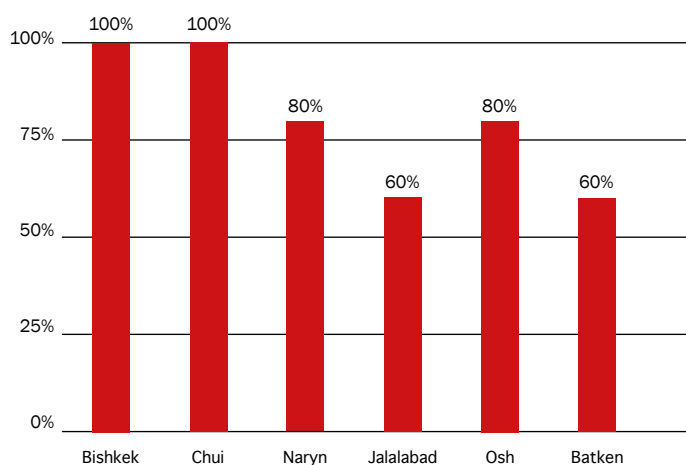
Table 9 presents the availability of generic versions of the surveyed medicines in the private sector; beclometasone inhaler wasn't found in any of the pharmacies.

**Table 9.** Availability of generics in private pharmacies.

Availability	Medicine <sup>6</sup>
0%	beclometasone inh
1 - 24%	ceftriaxone inj, clonazepam, fluoxetine, mebendazole, phenytoin
25-49%	ciprofloxacin, fluconazole
50 - 79%	aciclovir, amitriptyline, carbamazepine, cotrimoxazole susp, diazepam
80% & over	amoxicillin, ampicillin, atenolol, captopril, diclofenac, furosemide, gentamicin inj, glibenclamide, hydrochlorothiazide, metronidazole, nifedipine retard, omeprazole, ranitidine, salbutamol inh, verapamil

The median availability of the lowest priced generic equivalents (i.e. any generics of each medicine) was 100% in Bishkek and Chui region, 80% in Naryn and Osh regions, and 60% in Jalalabad and Batken regions (figure 3).

<sup>6</sup>Tablets/capsules unless otherwise stated



**Figure 3.** Median availability of the medicines in private pharmacies by region surveyed.

### Price components

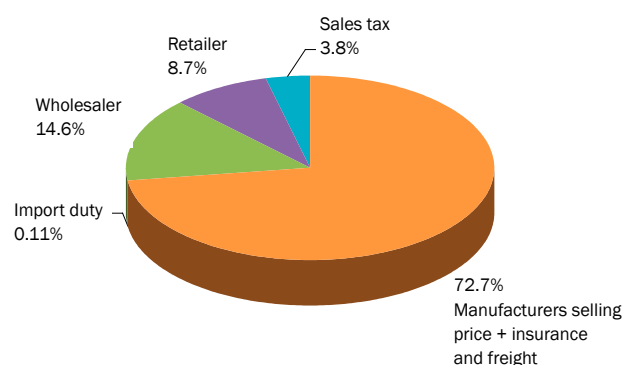
Information on price components as collected for a few medicines to ascertain the size of mark-ups and to assess the impact of taxes and mark-ups on the price the patient pays. As locally produced medicines only account for 3% by volume, the components of price are presented for imported originator brand and generic medicines. In January 2003, VAT exemption for medicines was granted.

Interviews revealed that import duty and sales tax were 0.15% and 4% respectively. The wholesale mark-up for originator brands varied from 15-25%, and for generic medicines from 25-35%. The range of retail mark-ups for originator brands was 5-15% and for generics, 15-25%. In general, the wholesale mark-up was higher than the retail mark-up. Table 10 illustrates the effect of the add-ons in the supply chain and the cumulative mark-up.

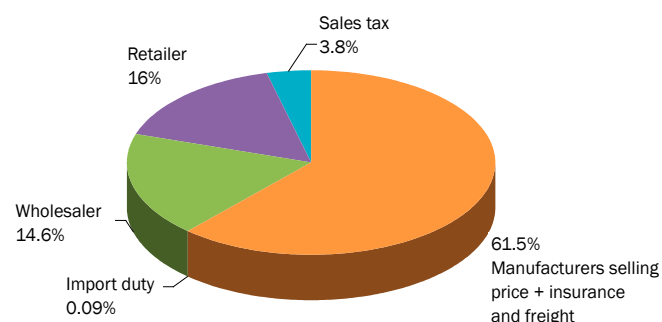
**Table 10.** Price components, mark-ups (average) and cumulative mark-up for a hypothetical imported medicine (originator & generic equivalent).

Component	Imported medicine			
	Originator brand		Generic equivalent	
	Add on	Cumulative mark-up %	Add on	Cumulative mark-up %
Import price	-	0%	-	0%
Import duty	0.15%	0.15%	0.15%	0.15%
Wholesale	20%	20.18%	30%	30.20%
Retail	10%	32.20%	20%	56.23%
Retail sales tax	4%	37.49%	4%	62.48%

Figures 4 and 5 present the contribution of each add-on in the supply chain to the final patient price. It can be seen that the manufacturers selling price is the largest contribution to final patient price, followed by wholesale and then retail mark-ups.



**Figure 4.** Proportions attributable to the various components of the final patient price for an imported originator brand medicine (based on average reported mark-ups).



**Figure 5.** Proportions attributable to the various components of the final patient price for an imported generic medicine (based on average reported mark-ups).

### International price comparisons

Table 11 presents a comparison of patient prices in private pharmacies for 4 medicines (lowest priced generics) across 5 countries, using data from the HAI website<sup>7</sup>. For atenolol, the price in Kyrgyzstan was similar to Tajikistan but lower than those in Kazakhstan, Mongolia and Malaysia. For amoxicillin and salbutamol, the prices across the 5 countries showed less variation. Ranitidine showed marked price variation across the countries.

<sup>7</sup> [www.haiweb.org/medicineprices](http://www.haiweb.org/medicineprices)

**Table 11.** Number of times more expensive: patient prices, lowest priced generics, in the private sector compared to international reference prices.

	Kyrgyzstan	Kazakhstan	Malaysia	Mongolia	Tajikistan
atenolol 50mg tab	2.62	3.78	9.57	7.57	2.45
amoxicillin 250mg tab	3.54	3.44	4.57	2.89	2.84
ranitidine 150mg tab	1.66	1.84	8.41	3.99	0.92
salbutamol inhaler	1.13	1.34	1.48	1.20	1.01

Table 12 compares the government procurement price of lowest priced generics for the 5 medicines across four countries (there was no data available for Tajikistan). Procurement prices were lower in Kyrgyzstan for three of the four medicines when compared with Kazakhstan, Mongolia and Malaysia.

**Table 12.** Number of times more expensive public sector procurement prices (lowest priced generics) compared to international reference prices.

	Kyrgyzstan	Kazakhstan	Malaysia	Mongolia
atenolol 50mg tab	1.77	2.05	-	4.29
amoxicillin 250mg tab	2.01	2.62	1.23	1.95
ranitidine 150mg tab	1.15	7.85 (OB)	3.01	2.08
salbutamol inhaler	0.63	1.1 (OB)	0.77	1.08

## Recommendations of the investigators

- Investigate the causes of high patient prices for commonly used medicines
- Carry out an in-depth investigation of all price components from the manufacturers selling price to the patient price with a view to gain a better understanding of mark-ups to guide the development of strategies to decrease the prices of medicines and hence improve affordability
- Undertake an extended survey to ascertain the reasons for regional variations in availability and prices.
- Establish public outlets with reduced prices in rural and remote regions to improve the affordability of treatments.
- Eliminate taxes on essential medicines including the 4% retail sales tax
- Physicians, pharmacists and the public should be educated about the economic benefits of the use of generic medicines of good quality
- Centralise public purchasing of medicines for health institutions and for the outlets in remote regions, as well as for the Additional Package of the Health Insurance Fund to improve the availability and affordability of the medicines.
- Aid transparency, procurement prices should be published on a freely accessible website.
- Regularly monitor medicine prices (public procurement & patient prices) to monitor the effects of policies on medicine prices, and to put this information into the public domain.

## Further information

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The full survey report and data can be found at:  
[www.haiweb.org/medicineprices](http://www.haiweb.org/medicineprices)