

MEDICINE PRICES, AVAILABILITY, AFFORDABILITY AND PRICE COMPONENTS IN KYRGYZSTAN

Report of a survey undertaken February to May 2005

Drug Information Centre

Department of Drug Provision and Medical Equipment

Bishkek

Kyrgyzstan

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Acronyms

EML	Essential medicines list
GDP	Gross Domestic Product
HAI	Health Action International
IB	Innovator brand
IRP	International reference price
LPG	Lowest priced generic equivalent
MHIF	Mandatory Health Insurance Fund
MoH	Ministry of Health
MPR	Median price ratio
MSG	Most sold generic equivalent
MSH	Management Sciences for Health
VAT	Value Added Tax
WHO	World Health Organization

1. Executive summary

A field study to measure the price and availability of medicines, the affordability of treatments and all the price components (taxes, mark-ups et.) that make up the final patient price was undertaken in Kyrgyzstan during February-May 2005 using the WHO/HAI medicine price survey methodology. There are no public sector facilities in Kyrgyzstan. Thus, price and availability data were collected for the 28 medicines in the survey, in private retail pharmacies in six administrative areas: Bishkek (capital) and 5 oblasts (Chui, Naryn, Osh, Jalal-Abad, and Batken). For each medicine, prices and availability were assessed for the innovator (originator) brand, the most sold generic equivalent, and the lowest price generic equivalent in 30 private pharmacies. In the public sector, procurement (tender) prices were obtained from 2 wholesalers.

Public sector procurement prices were generally reasonable, although prices for some individual medicines were high.

Most of the innovator brands were not available in the private sector, however, the median availability of generics was good (80%). For those innovator brands that were available, prices were about 3 times more expensive than lowest priced generics. Prices of generic medicines varied across the pharmacies surveyed, and the lowest priced product was not always the most sold. Overall lowest priced generics in the private sector were reasonably priced compared to international reference prices, but prices for some individual medicines were very high. Analysis by region showed variations in both price and availability. Availability was highest, and prices lowest, in the more affluent Bishkek and Chui regions.

The affordability of medicines was measured by comparing the price of standard treatments with the daily wage of the lowest paid unskilled government worker in Kyrgyzstan. Many treatments were simply not affordable. This is particularly concerning as a significant proportion of the population lives below this wage.

Price components were identified, however, data was limited due to manufacturers, wholesalers and pharmacists being unwilling to share information. Import duty and retail sales tax are imposed on medicines. The wholesale mark-up was higher than the retail mark-up, and markups were higher for generics than innovator brands. Cumulative mark-ups ranged from 44% - 63%.

Recommendations

The findings of this survey reveal that some commonly used medicines are expensive and many treatments are not affordable. Investigations are needed as to the causes, and actions taken to make medicine treatment more affordable.

An in-depth investigation of all price components from the manufacturers selling price to the patient price is needed with a view to regulating mark-ups. Steps should be undertaken to eliminate taxes on essential medicines (including the 4% retail sales tax).

An extended survey should be undertaken to ascertain the reasons for regional variations in availability and prices. This survey should include more medicines on the essential medicines list of Kyrgyzstan.

Policies favoring the use of generic medicines should be continued. Physicians, pharmacists and the public should be educated about the economic benefits of generic use.

Other recommendations include:

- To regularly monitor medicine prices (public procurement and patient prices) to monitor the effects of policies on medicine prices, and to make this information transparent (particularly to patients)
- To establish public outlets with reduced prices in rural and remote regions in order to improve the affordability of treatments
- Centralize all 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. To aid transparency, procurement prices should be published on a freely accessible website.

2. Kyrgyzstan pharmaceutical sector

Kyrgyzstan is a small country with a total area of 198,500 sq km, located in Central Asia. Kyrgyzstan borders Kazakhstan to the north and northwest, Uzbekistan to the southwest, Tajikistan to the south, and China to the southeast. The Kyrgyz Republic is divided into seven oblasts (regions): Chui, Issyk-Kul, Naryn, Talas, Osh, Djalal-Abad, Batken. The capital, Bishkek, is a separate administrative region (see [Annex I](#)).

The population of Kyrgyzstan is 5 million with 40.8% living below the national poverty line. The health system is financed from several sources: the state budget, the Mandatory Health Insurance Fund (MHIF), a very substantial but unknown amount of out-of-pocket payments by consumers, and loans/grants from external donors. The share of GDP directed to provide health care services has decreased from 3.7% in 1990 to 1.8% in 2003. Approximately 10% of the health care budget is used to purchase medicines. In 2004 medicine imports cost \$ 25 million USD. In 2004 spending on medicines was \$1.96 million from the budget, \$3.95 million from health insurance, \$2.86 million from co-payments. For insured persons, contributions made on their behalf to the national MHIF pool of funds entitle them to reduced co-payments for inpatient care and outpatient specialist services, and also provide access to an outpatient drug benefit package. Being insured in the Kyrgyz Republic is thus akin to having a voluntary “Medigap” policy in the United States or a “mutuelle” in France. Coverage is complementary to that funded from general revenues.

More than 82.5% of the population is covered by compulsory health insurance. But patients have to pay 30% - 70% of health service expenses from their own “pocket” (co-payment). There are four types of out-of-pocket payments in the health sector:

- informal under-the-counter payments in cash;
- purchase of goods and services from private suppliers, mainly outpatient medicines from private pharmacies and markets, but also private health care;
- official user fees; and a
- payer system.

The National Drug Policy was developed and implemented towards the end of the 1990s. The Kyrgyzstan Essential Medicines List was developed in 1996, based on WHO guidelines. Since then it has been revised four times.

For many years, the Ministry of Health has argued for VAT exemption policy for medicines, to improve their availability and economic affordability for the population. The Kyrgyz Republic Law on Implementing Changes and Amendments into the Tax Code of the Kyrgyz Republic, adopted in January 2003, assumes VAT exemption for drugs. It was an important social and political event and a real economic step to improve the populations’ access to medicines.

There are an estimated 1878 private pharmacies in the country, most of which are located in the cities. The development of pharmacy networks in rural and remote areas of the country is critical. In some remote regions neither public, nor private, outlets exist. There are no public or non-governmental pharmacies in Kyrgyzstan.

To date, about 2500 drugs have been registered in Kyrgyzstan. Three percent of the overall sales volume is from locally manufactured medicines. Kyrgyzstan thus imports more than 90% of the medicines used, mainly from countries of the Commonwealth of Independent States (CIS): Russia, Ukraine, Belarus, Kazakhstan etc. Counterfeit and smuggled drugs circulate on the

market, and remain a big problem for the health of the population. The share of smuggled drugs is approximately 30 percent of the total pharmaceutical market.

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.

In 2000, the MHIF introduced an Additional Drugs Package (ADP). In 2004, ADP consisted of 53 generics (including syringes), based on the EML. Pharmacies with a contract with the MHIF sell the specified drugs to insured patients at lower prices. The MHIF reimburses pharmacies in arrears using a reference price system. The average reimbursement rate is 50% of the price.

Prescriptions under international generic names (INN) promote the Rational Drug Use Concept. The share of brand name medicines prescribed by Family Group Practice physicians has decreased from 40.2 % (in 2000) to 11.7 % (in 2003).

2. Objectives of the survey

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

- What is the price (patient price and public sector procurement price) of a selection of medicines in Kyrgyzstan?
- How do these prices compare to an international reference price?
- What is the difference in price of the same medicine in different parts of the country?
- What is the difference in price of innovator 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 to low-income people in Kyrgyzstan?

The study was carried out by the Drug Information Centre of the Department of Drug Provision and Medical Equipment with permission from the Ministry of Health.

3. Methodology

During the months of February to May 2005, a field study measuring the price and availability of medicines, the affordability of standard treatments and price components in the supply chain, was undertaken in Kyrgyzstan.

The survey used a methodology developed by the World Health Organization (WHO) and Health Action International (HAI). The methodology, which is described in the manual “Medicine Prices: a new approach to measurement” (WHO/HAI, 2003), was designed for the collection, analysis and interpretation of medicine prices in a standardized way.

Baseline information on the pharmaceutical sector was gathered using a standard questionnaire - see [Annex II](#).

3.1. Selection of Medicines

The WHO/HAI manual provides a core list of 30 medicines to survey (so that international price comparisons are possible). Eleven were not included in the survey as they are not registered in Kyrgyzstan and therefore not available in retail pharmacies. These included artesunate 100 mg, indinavir 400 mg, nevirapine 200 mg, pyrimethamine with sulfadoxine (25+500) mg, zidovudine 100 mg, metformin 500 mg, fluphenazine decanoate 25 mg/ml, losartan 50 mg, and lovastatin 20 mg. Fluconazole 200 mg (a WHO/HAI core list medicine) was replaced with the 150 mg strength because the 200 mg tablets are not available in Kyrgyzstan, and diazepam 5 mg was replaced with the 10 mg tablets as this strength is more commonly used.

In total, nine medicines were added as a supplementary list. The main criteria for selecting the supplementary medicines were that the medicines should be on the national EML and should correspond to the national burden of disease. The following medicines were selected as they are commonly used to treat important health problems in Kyrgyzstan:

- Ampicillin tab 250 mg
- Diazepam tab 10 mg
- Clonazepam tab 2 mg
- Gentamicin injection 40 mg/ml
- Fluconazole tab 150 mg
- Furosemide tab 40 mg
- Mebendazole tab 100 mg
- Metronidazole tab 250 mg
- Verapamil tab 80 mg

In total, 28 medicines were included in the survey. A list of these medicines is attached as [Annex III](#).

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

- Innovator brand (determined nationally)
- Most sold generic equivalent (determined nationally)
- Lowest priced generic equivalent (identified in each pharmacy)

The most sold generic product was identified by interviewing a few pharmacies in Bishkek. Note: the most sold generic version of mebendazole tablets was not surveyed.

3.2. Sectors and regions surveyed

The survey measured the following:

	Public sector	Private sector (retail pharmacies)
Price to the patient		✓
Availability to the patient		✓
Affordability of standard treatments (benchmark: lowest paid unskilled government worker)		✓
Procurement prices	✓	

Following the WHO/HAI sampling methodology, we selected the major urban center, Bishkek, which is the capital of Kyrgyzstan. We then selected 5 administrative areas that can be reached in one day from the urban centre (Jalalabad, Osh, Batken, Chui, and Naryn regions). Therefore, a total of 6 regions were surveyed. This is two more regions than suggested by WHO/HAI.

Socio-economical development is the most advanced in Bishkek and the surrounding Chui region with high industrial capacity. Bishkek is the business and cultural centre of the country, and contributed 30.7% of GDP. The most developed industries are food and processing. The Chui region produces 34% of the countries industrial products and 29% of its agricultural products.

The Osh region is one of the more populous regions. Grain, cotton, tobacco plant, vegetables, oil yielding crops, fruits, melons and gourds are cultivated in this region. Industrial production accounts for only 5.2% of the regional output and services account for 25%.

The Jalalabad region produces 11.4% of GDP which consist of 28% industry, 28% services and 25% agriculture. The region produces 80% of all electricity, mines and process oil, gold and makes light and food industry products. 70% of cotton is produced in this region. Other crops include vegetables, fruits, tobacco and grain.

The Batken region is the least developed (3.9% of GDP) and the most remote region. Agriculture dominates.

The Naryn region is the least populated region. It is mostly an agricultural region, with a high proportion of cattle breeding. The regions GDP structure is similar to the Osh region.

3.3. Facilities

The sampling method described in the WHO/HAI manual was followed as closely as possible for selecting a representative number of private pharmacies. In the capital Bishkek and Chui and Naryn regions, 5 private pharmacies located within 5 km to a randomly selected Family Group Practice were surveyed (or beyond 5 km if necessary). In the southern part of the country (Osh, Jalalabad and Batken regions) some of the Family Group Practices were in the main centers and some were situated near the main roads from Osh to Jalalabad and Batken. In total, 30 retail pharmacies were surveyed

3.4. Training

Data collectors were trained in a two-day workshop to ensure the reliability and reproducibility of the survey. A small pilot study was conducted in Bishkek as part of the training ([Annex IV](#)).

3.5. Letter of Endorsement

The study was endorsed by the Ministry of Health. A copy of the text of this letter is attached as [Annex IX](#).

3.6. Data collection

The prices of medicines in the private for-profit sector were obtained from the 30 retail pharmacies surveyed. A standardized data collection form ([Annex V](#)) was used.

Procurement prices in the public sector were collected from two wholesalers. These were tender prices. Price components were identified by interviewing relevant bodies.

3.7. Data entry and analysis

Data entry and analysis took place centrally. The computerized Excel WHO/HAI workbook that accompanies the manual was used to enter the data collected in the field. Unit prices of each medicine in each pharmacy were entered in soms, but only if the medicine was physically available on the day of data collection. Prices were double-entered to ensure accuracy. The workbook's auto checker was also used to check the data.

For some medicines, only one generic product was found in a pharmacy. If the product identified as the most sold generic was the only generic available, by default it is also the lowest priced generic so the unit price was entered into the workbook as both the most sold and lowest priced generic. In other cases, the lowest priced generic can be a different product to the most sold generic; hence the unit prices of both were entered into the workbook.

After entering local unit prices, reference unit prices and the exchange rate (see below), the workbook automatically calculates the median price ratio for each medicine (in each sector and region surveyed). The workbook calculated price ratios only if a medicine was found in 4 or more facilities (private sector prices) or on one tender (public sector procurement prices). Availability was assessed across all 30 private pharmacies surveyed.

When treatment regimens are entered into the workbook, the cost of each treatment in local currency is automatically calculated from the facility data. The treatment cost is then compared with the daily wage of the lowest paid unskilled government worker. The information on the wage of the lowest paid unskilled national government worker was obtained from the personnel office in the Ministry of Health.

3.8. International reference prices

International reference prices are used in the WHO/HAI methodology to facilitate national and international price comparisons. Management Sciences for Health (MSH) 2003 median supplier unit prices were used as the reference for this survey (see MSH International Price Guide

Indicator on <http://erc.msh.org>). Where no supplier prices were available, median agency unit prices were used. MSH prices represent recent procurement prices offered by not-for-profit and for-profit suppliers to developing countries for generically equivalent products. These suppliers sell in large quantities to governments and NGOs so the prices tend to be low.

3.9. Median price ratios

The data from the survey are not presented in soms but as median price ratios (MPRs) calculated using international reference prices (see above). The median price ratio is the median local cost (in soms) divided by the reference median unit price (converted to soms using the exchange rate on the first day of data collection, i.e. 1 USD = 41.0144 soms).

The ratio describes how much greater or smaller the local medicine price is to the international reference price e.g. an MPR of 5 means that the local medicine price is five times that of the international reference price.

WHO and HAI consider an $MPR \leq 1$ is efficient for public sector procurement, and an $MPR > 2.5$ is excessive in the private sector.

4. Results

4.1 Public sector procurement prices

Procurement price data was available for one innovator brand, two most sold generic equivalents and 17 lowest priced generics, as shown in Table 1. Procurement price for the one innovator brand (mebendazole, an older off-patent product) was found to be 59.47 times the international reference price. The median of the median price ratios (MPR) for the most sold generic equivalents was 1.03, however, the figure is based on only 2 medicines. 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.

Table 1. Median MPRs (median price ratios), public sector procurement prices

	Number of medicines in 1 or more tenders	Median MPR	25%ile MPR	75%ile MPR
Innovator brand	1	59.47	59.47	59.47
Most sold generic equivalent	2	1.03	0.99	1.08
Lowest price generic equivalent	17	1.29	1.03	2.04

While the median MPRs for the lowest priced generics was reasonable (1.29), the prices of some individual medicines were high as shown in Table 2 e.g. hydrochlorothiazide tablets were nearly 5 times the international reference price.

Table 2. Median price ratios, public sector procurement prices, lowest priced generics

Medicine	Median Price Ratio
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

4.2 Patient prices in the private for-profit sector (private pharmacies)

In the private sector, innovator brand products (IB) prices were 5.42 times the international reference prices, with 50% in the range of approximately 5 to 30 times the reference prices (see Table 3). The median MPR of the most sold generic equivalents (MSG) was 3.67 times the international reference price, with 50% of the medicines being sold in the range of approximately 1.7 to 5 times the reference prices. The median MPR of the lowest price generic equivalents (LPG) was almost 2.6 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. Overall, the innovator brands were about twice the price of the lowest priced generics and 1.5 times more expensive than the most sold generics. The most sold generics were about 1.5 times more expensive than the lowest priced generics.

Table 3. Medians of the Median Price Ratios (MPR), private retail pharmacies

	Number of medicines found in 4+ pharmacies	Median MPR	25%ile MPR	75%ile MPR
Innovator brand	7	5.42	5.08	29.95
Most sold generic equivalent	20	3.67	1.73	5.04
Lowest price generic equivalent	23	2.56	1.63	4.29

As the number of medicines found in 4 or more pharmacies differs between the three types (IBs, MSGs, LPGs), the median MPRs in table 3 do not give the most accurate picture, so matched pairs are compared. As shown in Table 4, innovator brands were about 3 times more expensive than the most sold generics (5.42 compared to 1.74), and almost 3.6 times more expensive than the lowest priced generics (5.42 compared to 1.51). Most sold generics were 1.7 times more expensive than the lowest priced (3.67 compared to 2.21).

Table 4. Paired comparisons of the median MPRs for medicines found in 4 or more private pharmacies

	Innovator brand product	Most sold generic equivalent	Innovator brand product	Lowest price generic equivalent	Most sold generic equivalent	Lowest price generic equivalent
No. of meds.	5	5	5	5	20	20
Median MPR	5.42	1.74	5.42	1.51	3.67	2.21

When comparing the prices of individual innovator brands in the private sector with their international reference price, salbutamol was the lowest priced (MPR 1.82) and mebendazole was the most expensive (MPR 99.11) – see Table 5 and [Annex VI](#). Across all generics surveyed, omeprazole was the lowest priced generic (MPR 0.48), while the most expensive generic was the most sold generic version of fluconazole (MPR 83.69).

For some medicines, the variation across products types was small (e.g. salbutamol MPR IB 1.82, MSG 1.19, and LPG 1.13). For other medicines, the difference was larger e.g. the innovator brand of metronidazole was over 11 times the price of the lowest priced generic equivalent (MPR 41.84 vs. 3.62).

Table 5. Median price ratios (MPRs) for individual medicines, private retail pharmacies

Medicine	Product type	MPRs	25%ile MPR	75%ile MPR
Co-trimoxazole	Innovator brand	18.05	16.42	19.06
	Most sold generic equiv	4.74	4.74	5.25
	Lowest priced generic equiv	4.91	4.06	5.62
Fluconazole	Innovator brand			
	Most sold generic equiv	83.69	71.10	86.37
	Lowest priced generic equiv	31.70	29.26	73.15
Hydrochlorothiazide	Innovator brand			
	Most sold generic equiv	7.84	6.79	10.73
	Lowest priced generic equiv	8.71	6.97	11.59
Mebendazole	Innovator brand	99.11	89.2	101.59
	Most sold generic equiv	Not surveyed		

	Lowest priced generic equiv			
Metronidazole	Innovator brand	41.84	34.76	45.72
	Most sold generic equiv	16.47	14.83	19.77
	Lowest priced generic equiv	3.62	2.64	4.74
Omeprazole	Innovator brand			
	Most sold generic equiv	1.16	1.13	1.22
	Lowest priced generic equiv	0.48	0.36	0.61
Salbutamol	Innovator brand	1.82	1.68	2.01
	Most sold generic equiv	1.19	1.12	1.27
	Lowest priced generic equiv	1.13	0.89	1.26

4.3 Private sector patient prices across the six regions surveyed

As shown in Figure 1, there may be significant differences in the price of innovator brands across the six regions surveyed but the data was based on the few innovator brands found in 4 or more pharmacies in each region. Jalalabad and Naryn had the largest median MPR for innovator brands but they represent only 1 and 2 medicines respectively. The median MPRs for innovator brands were much lower in Biskek and Chui, but again the number of medicines was small (3 in each region). Likewise, the median MPR for the most sold generic equivalent was based on only a few medicines in each region. However, more reliable comparisons can be made for the lowest priced generics as the numbers in the analysis ranged from 12 in Batken to 22 in Chui. As can be seen in Figure 1, prices of the lowest price generic equivalents showed only small regional variation. They ranged from median MPR 1.8 in the capital Bishkek to 2.9 in Jalalabad and Osh.

Figure 1. Median MPR, all medicines surveyed, private retail pharmacies, by region

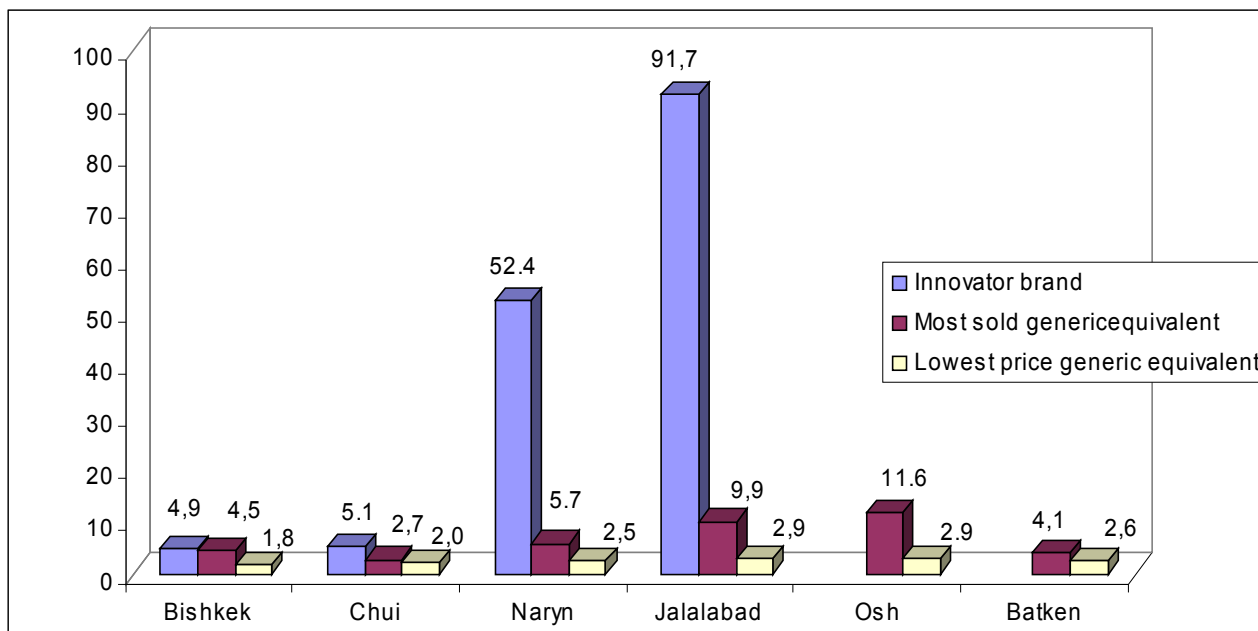
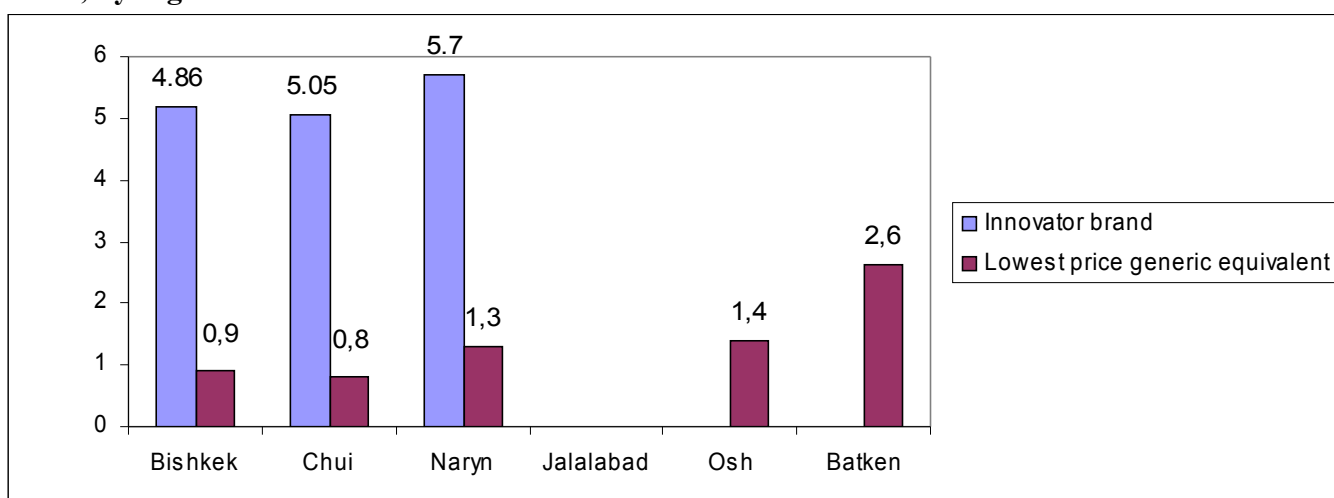


Figure 2 shows the comparative analysis of the price of captopril across the six regions surveyed (where the medicine was found in at least four of the five pharmacies surveyed in each region). For the innovator brand, the median price ratio showed only slight variation (4.9 in Biskek to 5.7 in Naryn). There was greater variation across the oblasts for the lowest priced generics of captopril; the price in Batken was about three times the price in Chui (MPR 2.6 compared to 0.8).

Figure 2. Median price ratio, innovator brand and lowest priced generic captopril, private sector, by region



4.4 Availability of medicines in the private sector

As shown in Table 6, the median availability of the 28 innovator brands surveyed was 0%. Seventeen of the twenty eight innovator brands were not found in any of the private pharmacies surveyed. In contrast, generic products were more frequently available. For the most sold generic equivalent products, median availability was 33.3%, with half of the medicines found in the range of 9.2% to 41.7%. The median availability of the lowest priced generics was good (80%) with half of the medicines in the range of 43.3% to 94.2%.

Table 6. Availability, core and supplementary medicines, private retail pharmacies

	Innovator brand	Most sold generic equivalent	Lowest price generic equivalent
Median availability	0.0%	33.3%	80.0%
25% percentile	0.0%	9.2%	43.3%
75% percentile	10.8%	41.7%	94.2%

Table 7 lists the availability of generic versions of the surveyed medicines in the private sector. The availability of generic versions of ampicillin, atenolol, gentamicin injection and metronidazole was 100%. A full list of the availability of all medicines (IB, MSG and LPG) is included as [Annex VII](#).

Table 7. Availability of generics in private pharmacies

Availability	Medicine
No pharmacies	beclometasone inhaler
1 – 24%	ceftriaxone inj, clonazepam, fluoxetine, mebendazole, phenytoin
25-49%	ciprofloxacin, fluconazole
50 – 79%	aciclovir, amitriptyline, carbamazepine, cotrimoxazole susp, diazepam
80% and over	amoxicillin, ampicillin, atenolol, captopril, diclofenac, furosemide, gentamicin inj., glibenclamide, hydrochlorothiazide, metronidazole, nifedipine retard, omeprazole, ranitidine, salbutamol inhaler, verapamil

4.5 Availability across regions

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). Not all the 28 medicines were found in retail pharmacies in all 6 regions.

Figure 3. Median availability (%) of generics in private pharmacies per region

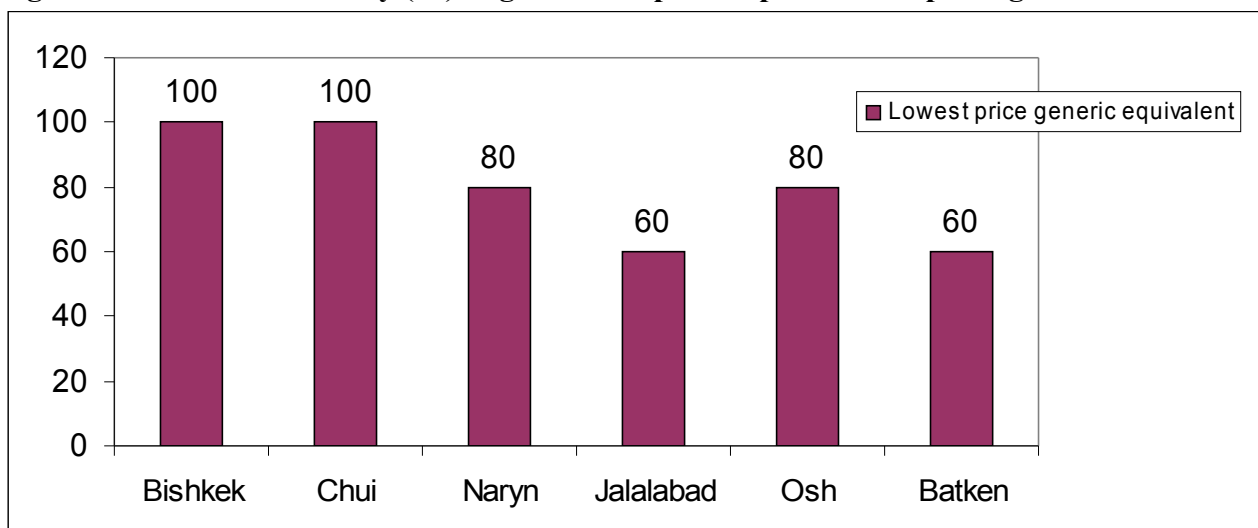
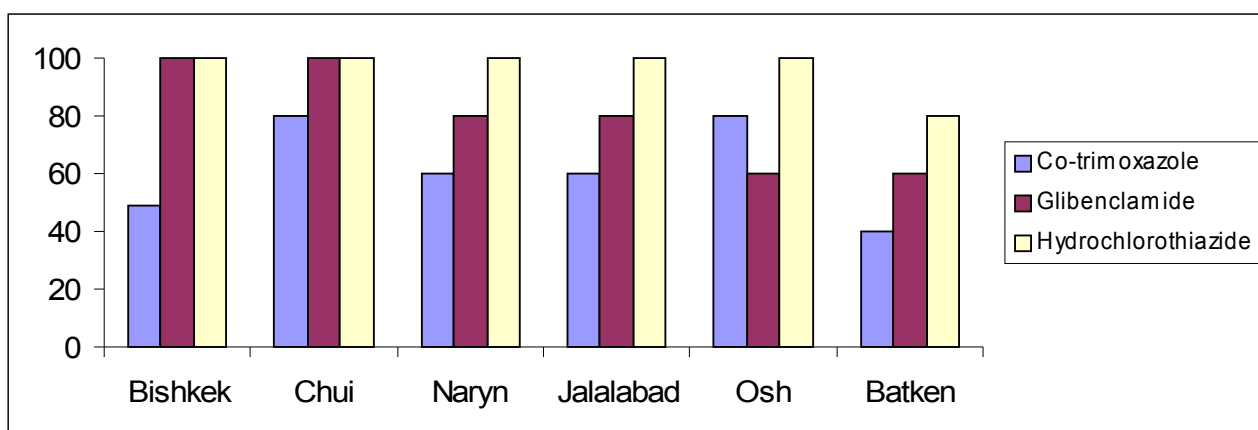


Figure 4 shows the availability of three medicines (generics) in the six regions. The availability of the lowest price equivalent generic of hydrochlorothiazide is 100% in five regions (Batken 80%). For glibenclamide, the generic was available in all the pharmacies surveyed in Bishkek and Chui, the availability of this medicine ranged from 60 – 80% in the other regions. The availability of generic versions of co-trimoxazole paediatric suspension ranged from 80% in Chui and Osh regions, to 40% in Batken.

Figure 4. Availability (%) of generics of amoxicillin, glibenclamide, hydrochlorothiazide



4.6 Affordability of standard treatments

A full list of the twelve conditions for which the affordability of standard treatments was measured is included as [Annex VIII](#). The monthly salary of the lowest paid unskilled government

worker was 600 soms, i.e. 20 soms per day. Using the exchange rate at the time of the survey (\$1 USD = 41.0144 som), this daily salary equates to about 50 cents US.

Of the twelve treatments, only one would take less than 1 days' wage to purchase the treatment in the private sector; a one tablet course of ciprofloxacin for gonorrhoea. If the government worker purchases lowest priced generic medicines from a private pharmacy, she/he would have to pay from 1.5 to 2.6 days' wages for six of the twelve treatments. Treatment of the other five conditions were more unaffordable: 5.1 days wages and 11.5 days wages to purchase a month's ulcer treatment with ranitidine and omeprazole respectively, 6.8 days for a month's treatment with amitriptyline for depression and 4.5 days wages to purchase 1 salbutamol inhaler or one month's treatment with captopril for hypertension.

Table 8 depicts treatment costs and affordability for three conditions. For the treatment of hypertension with hydrochlorothiazide, a month's treatment will cost the government worker almost 2 days' salary for the lowest priced generic. For a 1 month's treatment of diabetes with glibenclamide, the patient would have to pay the equivalent of 3 and 2.1 days' salary for the most sold and lowest price generic respectively. About 2.7 days' wages are needed to purchase a course of generic amoxicillin to treat pneumonia.

Table 8. Affordability and cost of treatment for hypertension and pneumonia

Treatment	Type	Private sector	
		Median price in soms	Days' wages
Hypertension: Hydrochlorothiazide 25 mg x 1 for 30 days	Innovator brand	N/A	
	Most sold generic eq	33.75	1.7
	Lowest price generic eq	37.50	1.9
Diabetes: Glibenclamide 5mg x 2 for 30 days	Innovator brand	N/A	
	Most sold generic eq	59.75	3
	Lowest price generic eq	42.00	2.1
Pneumonia: Amoxicillin 250 mg x 3 for 7 days	Innovator brand	N/A	
	Most sold generic eq	56.70	2.8
	Lowest price generic eq	52.50	2.6

Even though the median price ratio of the lowest priced generic of omeprazole in the private sector was half the international reference price, 30 days of ulcer treatment was unaffordable (11.5 days wages). As shown in Table 9, ulcer treatment with ranitidine (lowest priced generic) was less than half the price of omeprazole treatment, but still not affordable (5.1 days salary).

Table 9. Comparison of the affordability of omeprazole and ranitidine to treat an ulcer, private sector

Ulcer treatment	Type	Private sector	
		Median price	Days wages

Omeprazole 20 mg x 2 for 30 days	Innovator brand	N/A	
	Most sold generic	560.00	28
	Lowest price generic	231.00	11.5
Ranitidine 150 mg x 2 for 30 days	Innovator brand	N/A	
	Most sold generic	240.00	12
	Lowest price generic	102.00	5.1

4.6 Affordability of treatments across the six regions surveyed

Figures 5 and 6 illustrate the variation in affordability of treatment for one acute and one chronic condition in different regions of the country.

Figure 5 shows that to purchase 30 days treatment with the lowest priced generic of hydrochlorothiazide or atenolol, to treat hypertension, the government worker would need to pay 3 and 2 days' wages respectively in Jalalabad region while the same treatment in Bishkek would cost the equivalent of 1.5 and 1 days' wages, and in Chui region 1.4 and 1.2 days' wages.

For a 7 day course of the lowest price generic of amoxicillin to treat pneumonia, the government worker would need to pay 2.9 days' wages in Jalalabad region, while the same treatment course in Chui would cost the equivalent of 1.9 days' wages (see Figure 6).

Figure 5. Affordability of lowest priced generics of hydrochlorothiazide and atenolol to treat hypertension by region, private sector

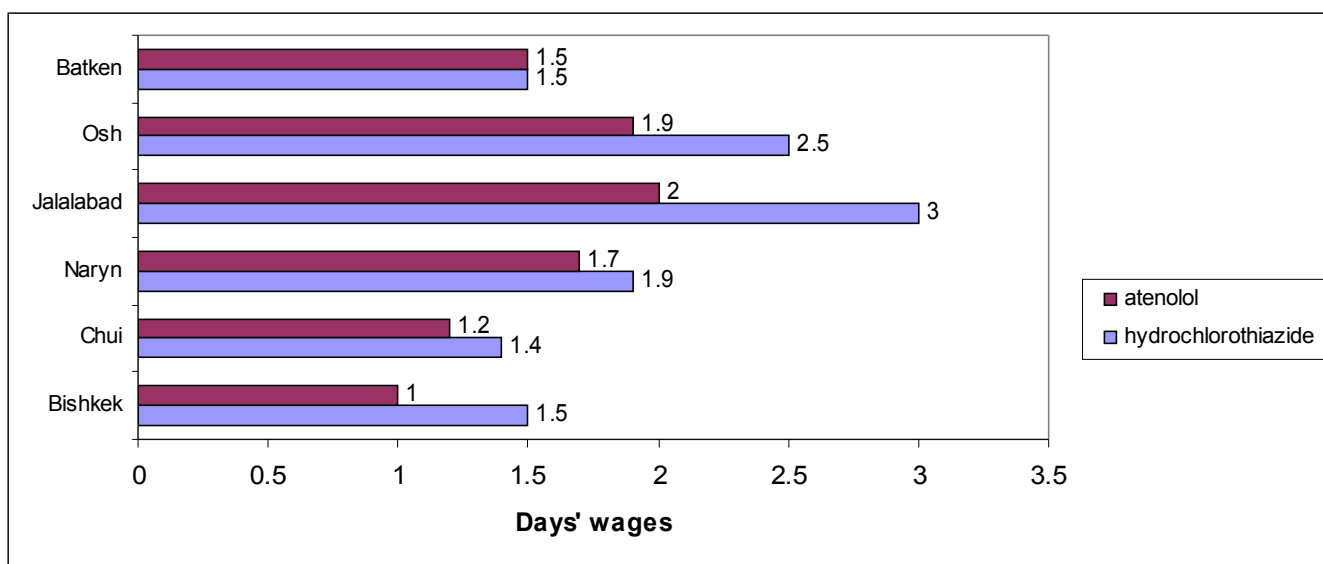
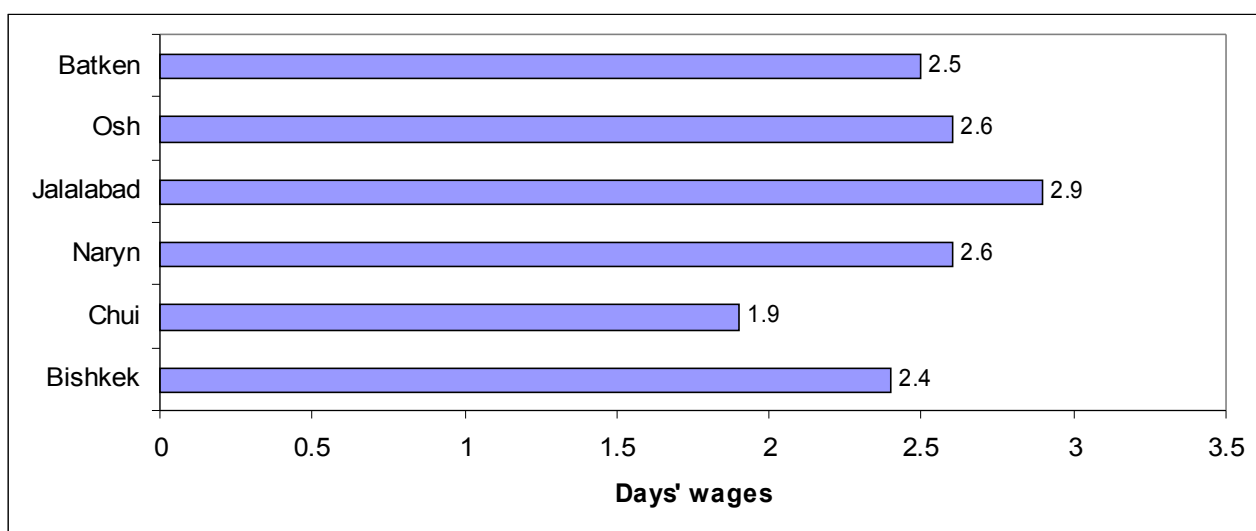


Figure 6. Affordability of lowest priced generics of amoxicillin to treat a respiratory infection by region, private sector



4.4 Price components and cumulative mark-ups

Data on the price components was collected for a selection of medicines to ascertain the size of mark-ups and to assess the impact of taxes and mark-ups on the price the patient pays.

While the import duty and sales tax did not vary across product types, wholesale and retail (pharmacy) mark-ups did vary as shown in Table 10. The wholesale mark-up for innovator brands varied from 15-25%, and for generic medicines from 25-35%. The range of retail mark-ups for innovator brands was 5-15% and for generics, 15-25%. In general, the wholesale mark-up was higher than the retail mark-up.

Table 10. Hypothetical example, price components and cumulative mark-ups

Component	Imported product, private sector			
	Innovator brand		Generic equivalent	
	Charge	Cumulative % mark-up	Charge	Cumulative % mark-up
Import price		0%		0%
Import duty	0.15%	0.15%	0.15%	0.15%
Wholesale mark-up (average)	20%	20.18%	30%	30.20%
Retail mark-up (average)	10%	32.20%	20%	56.23%
Retail sales tax	4%	37.49%	4%	62.48%

Table 11 shows component costs for the most sold generic version of atenolol 50mg tablets (pack size: 30 tablets). Table 12 shows component costs for the imported innovator brand captopril 25mg tablets (pack size: 30 tablets). In these two examples, the wholesale mark-up was larger than the retail mark-up, and the wholesale and retail mark-ups for the innovator product were less than the generic.

Table 11. Price components and cumulative mark-up, most sold generic atenolol 50 mg, private sector, imported.

Component	Amount of charge	Price in soms	Cumulative % mark-up
CIF		29.52	0.00%
Import tax	0.15%	29.56	0.15%
Wholesale mark-up	30%	38.43	30.20%
Retail mark-up	20%	46.12	56.23%
Retail tax	4%	47.97	62.48%

Table 12. Price components and cumulative mark-up, innovator brand captopril 25 mg, private sector

Component	Amount of charge	Price in soms	Cumulative % mark-up
CIF		120.54	0.00%
Import tax	0.15%	120.72	0.15%
Wholesale mark-up	20%	144.86	20.18%
Retail mark-up	15%	166.59	38.21%
Retail tax	4%	173.26	43.74%

4.5 International price comparisons

Patient prices in private pharmacies

Table 13 shows price ratio comparisons, in private pharmacies, for the lowest priced generic versions of four medicines across various countries, using data from the HAI website (www.haiweb.org/medicineprices). All surveys used MSH 2003 as the source of the reference price. 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 five countries showed less variation. Ranitidine showed marked price variation across the countries.

Table 13. Median price ratios of lowest priced generic atenolol, private sector

Lowest price generic equivalent	Kyrgyzstan	Kazakhstan	Malaysia	Mongolia	Tajikistan
Atenolol	2.62	3.78	9.57	7.57	2.45
Amoxicillin	3.54	3.44	4.57	2.89	2.84
Ranitidine	1.66	1.84	3.99	8.41	0.92
Salbutamol	1.33	1.34	1.2	1.48	1.01

Government procurement prices

Table 14 compares the government procurement price of lowest priced generics for the five 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 14. Median price ratios of lowest priced generic atenolol, public sector procurement prices

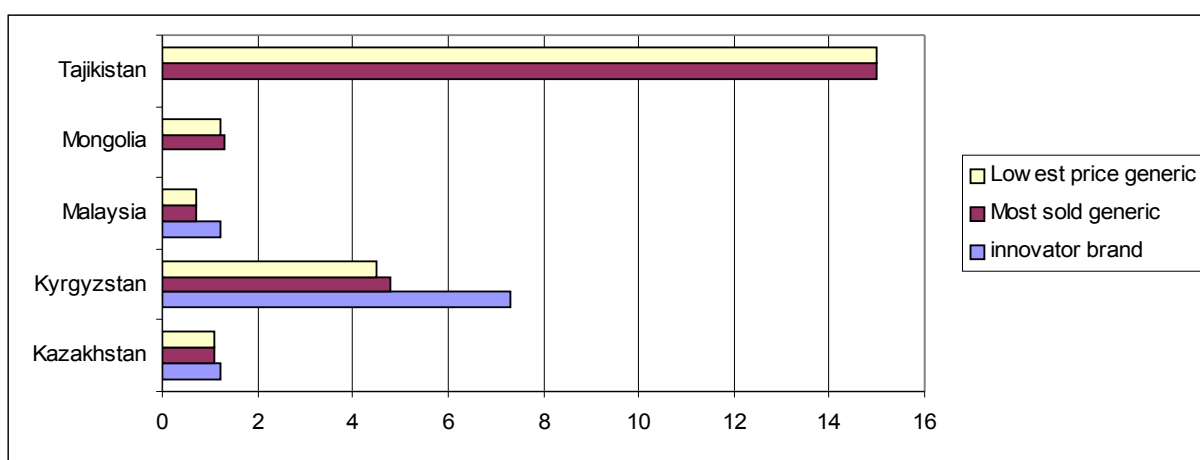
Lowest price generic equivalent	Kyrgyzstan	Kazakhstan	Malaysia	Mongolia

Atenolol	1.77	2.05	-	4.29
Amoxicillin	2.01	2.62	1.23	1.95
Ranitidine	1.15	7.85 (IB)	2.08	3.01
Salbutamol	0.63	1.1 (IB)	1.08	0.77

Affordability of standard treatments

In Kyrgyzstan, the lowest paid government worker has to work about a week to buy the innovator brand of salbutamol inhaler. The same treatment in Kazakhstan and Malaysia would take about one day's wage. Treatment with the lowest priced generic version of salbutamol is less affordable in Kyrgyzstan compared to Mongolia, Kazakhstan and Malaysia.

Figure 7. Comparison of affordability: number of days' wages needed to purchase one salbutamol inhaler



5. Discussion

In the public sector, only procurement prices were surveyed, as there are no public sector pharmacies. Out of the 28 medicines surveyed procurement prices were obtained for 18. The prices (tenders) were obtained from two wholesalers, as the buyer would not give us the prices. For the 17 medicines where generic prices were available, the median MPR of the lowest priced generic (usually the only generic) was 1.29. This is quite good. As the reference prices are wholesale prices, the ratio for public procurement should be around 1. One innovator brand was found (mebendazole). It cost 60 times the reference price which is an unacceptably high price for this older, off-patent medicine.

There were large differences in prices of innovator brand products and their generic equivalents in the private sector. Due to the variable number of medicine types found in more than 4 facilities (7 innovator brands, 20 most sold generics and 23 lowest priced generics), it is best to use matched pair comparison to highlight the difference between the types. The median MPR for innovator brands was 3 times higher than the most sold generic equivalents and 3.6 times the median of the lowest priced generics (based on a comparison of 5 medicines only). Most sold generics were 66% more expensive than the lowest priced generics (20 medicines compared). Prices of innovator brand products ranged from an acceptable 1.8 (salbutamol inhaler) to a staggering 99 (mebendazole) times the international reference price. Prices of most sold generics ranged from 0.5 (aciclovir) to an extremely high 84 times (fluconazole) higher than reference prices. The lowest priced generics ranged from 0.5 (omeprazole) to a very high 32 times (fluconazole) the international reference price. Clearly in the private sector, some medicines are sold at an acceptable price while others are extremely high priced.

For some medicines the price of the most sold generic was lower than the lowest priced generics e.g. co-trimoxazole suspension (4.74 vs. 4.91), gentamicin injection (2.20 vs. 2.56) and hydrochlorothiazide tablets (7.84 vs. 8.71). The likely explanation is differences in availability which influences the median. Some pharmacies did not stock the centrally determined most sold generic product but did have other generic equivalents in stock. One reason for low availability of the most sold generic product might be due to difficulties experienced in identifying the MSGs. Due to this difficulty, seen in many surveys, WHO and HAI no longer recommend surveying the MSG.

The availability of generics was quite good in the private sector (median 80%). The availability of the most sold generic products was only 33%, and hardly any innovator brands were found. Beclometasone inhaler, an important medicine in asthma control, was not found in any pharmacy. Innovator brands of 7 medicines were found in 4 or more pharmacies, and those of another 4 medicines were found in fewer than 4 pharmacies. One reason could be that few innovator brands are registered in Kyrgyzstan. As innovator brands tend to be expensive and manufacturers do not always reduce the price when faced with competition from generics, few patients would likely be able to afford them. The fact that innovator brands are rarely available is not a problem where generics are available, but it is a problem for medicines under patent where generics are not permitted on the market.

Overall the prices of generics in the private sector showed a small regional variation (median MPR 1.8 - 2.9). However, some individual medicines showed greater variability e.g. Batken, the least developed and most remote region, had the highest price for generic captopril (median MPR 2.6) whereas Chui region and the capital Bishkek (the most affluent regions) had the lowest prices (median MPR of about 0.8). Medicine availability was highest in Bishkek and the Chui region.

The reason is probably that some pharmaceutical companies have direct deliveries from pharmaceutical plants in Russia, but this should be investigated further.

Forty percent of the population in Kyrgyzstan live below the poverty line of 1 USD per day. The income used for comparison in the affordability analysis is 0.5 USD per day. The survey shows that medicines are not affordable in Kyrgyzstan. This is best illustrated by the fact that a family living on the monthly income of the lowest paid unskilled government worker and needing a month's treatment with an antihypertensive and diabetes medication, and a course of antibiotic treatment, will have to spend nearly one week's salary on buying medicines in the private sector. Affordability varied between regions e.g. 3 days wages were needed to purchase hydrochlorothiazide in Jalalabad compared to 1.4 days in the more affluent Chui region. Our findings show that many treatments are not affordable for the lowest paid unskilled government worker. This indicates that many patients in Kyrgyzstan will not be able to afford standard treatments.

There is no medicine price regulation in Kyrgyzstan. Retail prices are not fixed nor are mark-ups regulated. It was somewhat difficult to determine wholesale and retail mark-ups as it was not possible to obtain manufacturers' selling prices, and wholesalers and retailers often refused to give mark-up information. The price component investigation showed that various taxes, as well as mark-ups, are added to the import price of a medicine. An import duty of 0.15% is imposed by the state for both innovator brands and generics. While it is much smaller in size compared to wholesale and retail mark-ups, it is applied early in the distribution chain so it cumulates. The wholesale mark-up was found to be higher for generics than innovator brands. It was also higher than the retail mark-up, which is also higher for generics than innovator brands. According to data on the HAI website, the wholesale mark-up in Kyrgyzstan is higher than in many other countries where it officially rarely exceeds 20% but can be as low as 4-5%. Governments in many countries have introduced regressive mark-ups (higher mark-up on less expensive medicines) as an incentive to dispense lower priced products, or remunerated pharmacists by applying a dispensing fee. In Kyrgyzstan a retail sales tax of 4% is applied, which has a negative impact on the affordability of medicines for people living on a low wage such as 20 soms (0.5 US cents) per day or less. Sales tax should not be applied to medicines, particularly those on the essential medicines list of Kyrgyzstan.

Some medicines were not found in the surveyed pharmacies even though they are included in the treatment protocols for common conditions in Kyrgyzstan. Medicines are on the EML and in national treatment protocols should be available in pharmacies. The Mandatory Health Insurance Fund (MHIF) has a contract with pharmaceutical companies for the medicines that are covered by this fund and additional drugs package, and this contract makes their availability obligatory. The private sector pharmacies surveyed either did not have some of these medicines (e.g. beclometasone inhaler to treat asthma) or they were rarely available (e.g. fluoxetine and phenytoin to treat depression and epilepsy respectively). One explanation could be that medicines for mental diseases are mainly distributed through specialized outlets situated close/next to the mental health clinics.

The conclusions drawn from this survey are limited by a number of factors. It was difficult to identify the most sold generic products centrally because no national sales statistics are available. Also, the list of medicines surveyed may not represent the most frequently prescribed medicines. Some medicines were added from the national list of essential medicines, but more would need to be surveyed to get a better picture. In the public sector, procurement prices were obtained from wholesalers, but should ideally have been obtained from the government buyer(s). Price components were poorly investigated as they are also difficult to collect. Finally, to ascertain prices people actually paid can only be determined by specific studies such as interviewing

patients when they leave the pharmacy (exit survey) or by visiting them at home (household survey).

This survey was useful for signal generation. Where needed, further detailed studies should be undertaken (particularly on component costs). The reasons for high prices, poor availability and poor affordability also need to be investigated.

6. Conclusions and recommendations

Public sector procurement prices are not published on any freely accessible website or in any other publicly accessible format. Tender data collected from wholesalers show that prices were generally reasonable, although prices for some individual medicines are high. Investigations are needed into the reasons for such high prices.

Overall, prices in the private sector for lowest priced generics were reasonable compared to international reference prices, but they were high for some individual medicines. Prices varied between the different administrative areas of the country. Innovator brands are generally absent in most regions of Kyrgyzstan. Of those that were available, prices are high compared to international reference prices and 3-4 times higher than generic equivalents. However, the availability of generics was good. The low availability of innovator brands may mean that the policy of generic substitution is being successfully implemented as a part of the WHO Rational Drug Use concept.

About half of the population lives below the poverty line and many standard treatments, even with low priced generics, are simply not unaffordable.

Both the manufacturer's selling price, government imposed taxes and unregulated mark-ups can adversely influence the price and hence affordability of medicines.

Recommendations

The findings of this survey reveal that some commonly used medicines are expensive and many treatments are not affordable. Investigations are needed as to the causes, and actions taken to make medicine treatment more affordable.

An in-depth investigation of all price components from the manufacturers selling price to the patient price is needed with a view to regulating mark-ups. Steps should be undertaken to eliminate taxes on essential medicines (including the 4% retail sales tax).

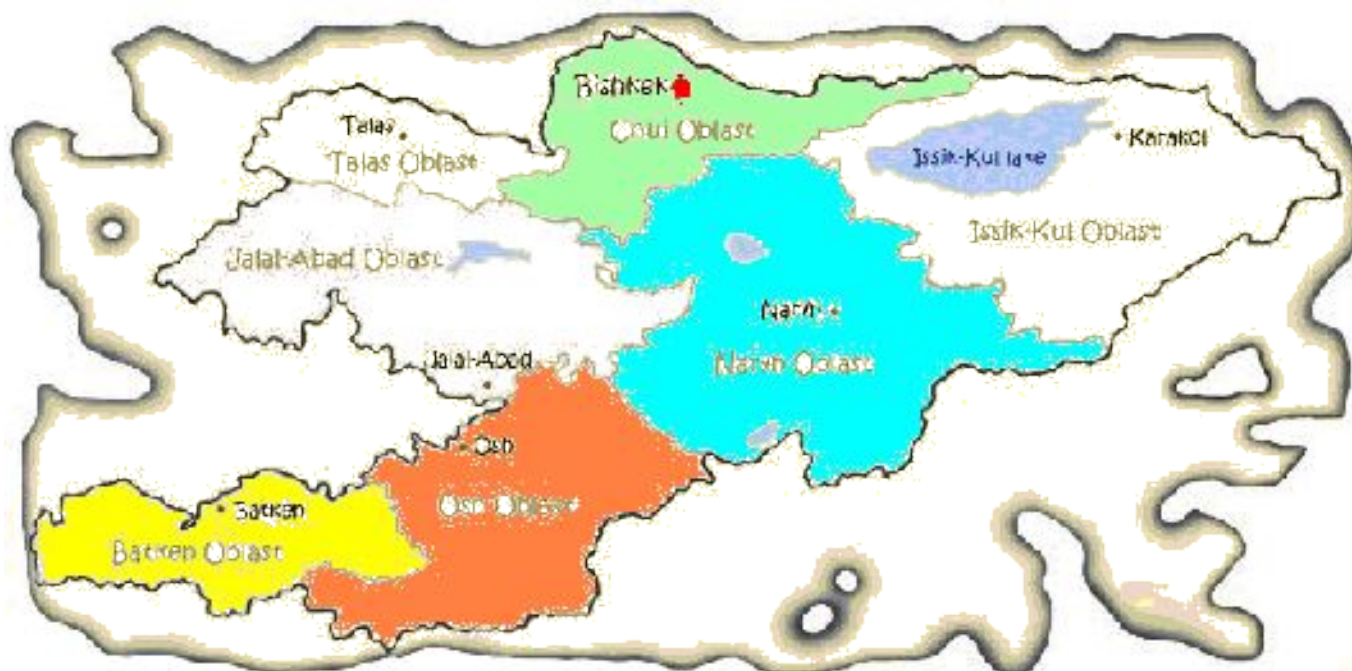
An extended survey should be undertaken to ascertain the reasons for regional variations in availability and prices. This survey should include more medicines on the essential medicines list of Kyrgyzstan.

Policies favoring the use of generic medicines should be continued. Physicians, pharmacists and the public should be educated about the economic benefits of generic use.

Other recommendations include:

- To regularly monitor medicine prices (public procurement and patient prices) to monitor the effects of policies on medicine prices, and to make this information transparent (particularly to patients)
- To establish public outlets with reduced prices in rural and remote regions in order to improve the affordability of treatments
- Centralize all 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. To aid transparency, procurement prices should be published on a freely accessible website.

Annex I Map of Kyrgyzstan



- Bishkek is separate administrative area

Annex II Kyrgyzstan Pharmaceutical Sector

Date: 25.02.05

Population: 5 million.

Daily wage of lowest paid government worker 20 soms

Rate of exchange (commercial "buy" rate) to US dollars on the first day of data collection: \$1 = 41,00

Sources of information: National Bank of Kyrgyzstan

General information on the pharmaceutical sector

Is there a formal National Medicines Policy document covering both the public and private sectors?

Yes No

Is an Essential Medicines List (EML) available? Yes No

If yes, state total number of medicines on national EML: 305

If yes, year of last revision: 2004

If yes, is it (tick all that apply):

- National
- Regional
- Public sector only
- Both public and private sectors
- Other (please specify):

If yes, is the EML being used (tick all that apply):

- For registration of medicines nationally
- Public sector procurement only
- Insurance and/or reimbursement schemes
- Private sector
- Public sector

Is there a policy for generic prescribing or substitution? Yes No

Are there incentives for generic prescribing or substitution? Yes No

Public procurement¹

Is procurement in the public sector limited to a selection of essential medicines? Yes No

If no, please specify if any other limitation is in force:

Type of public sector procurement (tick all that apply):

International, competitive tender

Open

Closed (restricted)

National, competitive tender

Open

Closed (restricted)

Negotiation/direct purchasing

Are the products purchased all registered? Yes No

Is there a local preference?² Yes No

Are there public health programmes fully implemented by donor assistance which also provide medicines? Yes No

(e.g. TB, family planning, etc.)

If yes, please specify:

Distribution³

Is there a public sector distribution centre/warehouse? Yes No

If yes, specify levels: 1st level

Are there private not-for-profit distribution centres: Yes No
e.g. missions/nongovernmental organizations?

If yes, please specify:

Number of licensed wholesalers:

Retail

	Urban	Rural	Overall
Number of inhabitants per pharmacy (approx.)	1642	6000	2662 (in average)
Number of inhabitants per qualified pharmacist (approx.)			1930
Number of pharmacies with qualified pharmacists			1878
Number of medicine outlets with pharmacy technician			
Number of other licensed medicine outlets			1042

1 If there is a public procurement system, there is usually a limited list of items that can be procured. Products procured on international tenders are sometimes registered in the recipient country only by generic names. Import permits to named suppliers are issued based on the approved list of tender awards. An open tender is one that is publicly announced; a closed one is sent to a selection of approved suppliers.

2 A local preference means that local companies will be preferred even if their prices are not the cheapest. Local preference is normally in the range of 10–20%.

3 The public sector often has a central storage and distribution centre which may have at least one sublevel. The private not-for-profit sector may be dominated by one type of NGO (e.g. church missions), but may also comprise others such as Bamako Initiative type projects, Red Cross or Red Crescent Society, Médecins Sans Frontières.

Private sector⁴

Are there independent pharmacies? Yes No Number: 1878
Are there chain pharmacies? Yes No Number: no data
Do doctors dispense medicines?⁵ Yes No

If yes, approximate coverage or % of doctors who dispense:

Are there pharmacies or medicine outlets in health facilities? Yes No

Financing

(Give approximate figures, converted to US dollars at current exchange rate: commercial “buy” rate on the first day of data collection)

Type of expenditure	Approximate annual budget (US dollars)
National public expenditure on medicines including government insurance, military, local purchases in past year	\$ 997012,8
Estimated total private medicine expenditure in past year (out of pocket, private insurance, NGO/mission)	\$ 24,9 mln
Total value of international medicine aid or donations in past year	\$ 211 047
What percentage of medicines by value are imported?	<u>90 %</u>

Government price policy

Is there a medicines regulatory authority? Yes No

Is pricing regulated? Yes No

Is setting prices part of market authorization/registration? Yes No

Do registration fees differ between:

- Innovator brand and generic equivalents Yes No
- Imported and locally produced medicines Yes No

Public sector

Are there margins (mark-ups) in the distribution chain? Yes No

- Central medical stores %
- Regional store %
- Other store (specify) %
- Public medicine outlet %

Are there any other fees or levies? Yes No

If yes, please describe:

Private retail sector

Are there maximum profit margins? Yes No

If yes (if they vary, give maximum and minimum):

⁴ Retail outlets may be called pharmacies, medicine outlets, drug stores, chemists, etc. They may be run/owned by a qualified pharmacist (with diploma) or another category: e.g. pharmacy technician, or a lay person with short training.

⁵ Many countries allow doctors to dispense and sell medicines.

Annex III List of medicines surveyed

Medicine Name	Medicine Strength	Dosage Form	Target Pack Size	Core List (yes/no)	"Innovator" Product			Most Sold Generic Version (Nat'l)		
					Name	Manufacturer	Country of Production	Name	Manufacturer	Country of Production
Aciclovir	200 mg	tablet	25	yes	Zovirax	GSK		Aciclovir	Shelkovsky plant of vitamins	Russia
Amitriptyline	25 mg	tablet	100	yes	Triptizole	MSD		Amitriptyline	ICN	Russia
Amoxicillin	250 mg	tablet	21	yes	Amoxil	SKB (GSK)		Amosin	Synthez	Russia
Atenolol	50 mg	tablet	60	yes	Tenormin	AstraZeneka		Atenolol	Balkan pharma	Bulgaria
Beclometasone	200 dose (50 mcg per dose)	inhaler	200	yes	Becotide	GSK		Beclometasone	Galena	Czech Republic
Captopril	25 mg	tablet	60	yes	Capoten	BMS		Captopril N.S.	Shelkovsky plant of vitamins	Russia
Carbamazepine	200 mg	tablet	100	yes	Tegretol	Novartis		Finlepsin	AWD	Germany
Ceftriaxone	1 g	powder for injection	1 vial	yes	Rocephin	Roshe		Ceftriaxone	Kievmedpreparat	Ukraine
Ciprofloxacin	500 mg	tablet	1	yes	Ciproxin	Bayer		Ciprosan	Sun Pharmaseuticals	India
Co-trimoxazole	(8+40) mg/ml	suspension	100ml	yes	Bactrim	Roshe		Co-trisole	Aydanpharmaa	Kyrgyzstan
Diclofenac	25 mg	tablet	100	yes	Voltaren	Novartis	Swiss	Diclofenac	Shelkovsky plant of vitamins	Russia
Fluoxetine	20 mg	tablet/capsule	30	yes	Prozac	Lilly		Portal	Lek	Slovenia
Glibenclamide	5 mg	tablet	60	yes	Daonil	HMR		Maninil 5	Berlin-Chemie	Germany
Hydrochlorothiazide	25 mg	tablet	30	yes	Dichlotride	MSD		Hypothiazide	Chemical and pharmaceutical plant of Borshagovsk	Ukraine
Nifedipine retard	20 mg	retard	100	yes	Adalat retard	Bayer		Corinfar retard	AWD	

		tablet								
Omeprazole	20 mg	capsule	30	yes	Losec	AstraZeneka		Omez	Dr Reddy's laboratories	India
Phenytoin	100 mg	tablet	100	yes	Dilantin	Pfizer		Difenin	Chemical and pharmaceutical plant of Lugansk	Ukraine
Ranitidine	150 mg	tablet	60	yes	Zantac	GSK		Ranisan	PRO.MED.CS Praha a.S.	Czech Republic
Salbutamol	200 doses (0.1mg per dose)	inhaler	200 dose inhaler	yes	Ventolin	GSK		Salbutamol	Semashko Moschimpharmpreparaty	Russia
Ampicillin	250 mg	tablet	28	no	Pentrexil	BMS		Ampicillini trihydras	Borisovsky plant of medpreparatov	Belarus
Clonazepam	2 mg	tablet	30	no	Rivotril	Roshe		Clonazepam	Polfa	Poland
Diazepam	10 mg	tablet	50	no	Valium	Roshe		Diazepam	Balkan pharma	Bulgaria
Fluconazole	150 mg	tablet	1	no	Diflucan	Pfizer		Micosist	Gedeon Richter	Hungary
Furosemide	40 mg	tablet	50	no	Lasix	Hoechst		Furosemide	Sopharma	Bulgaria
Gentamicin	40 mg/ml	solution for injection	1 amp	no	Garamicin	Schering-Plough		Gentamicini sulfas	Belmedpreparaty	Belarus
Mebendazole	100 mg	tablet	6	no	Vermox	Gedeon Richter	Hungary			
Metronidazole	250 mg	tablet	20	no	Flagil	Rhone-Pouleng Rorer	France	Trichopol	Polfa	Poland
Verapamil	80 mg	tablet	100	no	Isoptin	Knoll		Verapamil	Ferane (Bryntsalov)	Russia

Annex IV Survey timetable

	Dates
Stakeholder meeting	October 2004
Appoint advisory group and survey planning and preparations	December 2004- January 2005
Training of data collectors	26-27 January 2005
Data collection period	February – May 2005
Data analysis	June 2005
Preparation of draft reports	2005

Annex V Medicine Price Data Collection Form

Анкета по сбору цен на лекарственные средства Основной список

A	B	C	D	E	F	G	H	I
Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте ✓)	Target pack size	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единицу	Коммента рии
Aciclovir 200 мг, tab	Зовиракс	GSK		25			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Ацикловир	Щелковский витаминовый завод		25			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				25			/таб	
Amitriptyline 25 мг, таблетки	Триптизол	MSD		100			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Амитрипти ллин-Акри	Акрихин		100			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				100			/таб	
Amoxicillin, tab 250 мг	Амоксил	SKB (GSK)		21			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Амосин	Синтез		21			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				21			/таб	
Atenolol 50 мг, tab	Тенормин	АстраЗенека		60			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Атенолол	Балкан фарма		60			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				60			/таб	

A	B	C	D	E	F	G	H	I
Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте √)	Рекомендован ный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единицу	Коммента рии
Beclometasone inhaler 50 мкг/доза	Бекотид	GSK		200 доз			/доза	
<i>Наиболее продаваемый непатентованный аналог</i>	Насобек (Беконазе)	Галена, Чехия (Глаксовелком)		200 доз			/доза	
<i>Наиболее дешевый непатентованный аналог</i>				200 доз			/доза	
Glibenclamide 5 мг, tab	Даонил	HMR		60			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Манинил 5	Берлин Хеми		60			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				60			/таб	
Hydrochlorothiazide 25 мг, tab	Дихлотрид	MSD		30			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Гидрохлорт иазид	Борщаговский завод		30			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				30			/таб	
Diclofenac 25 мг, tab	Вольтарол	Новартис		100			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Диклофенак	Щелковский витаминовый завод		100			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				100			/таб	

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Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте √)	Рекомендован ный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единицу	Коммента рии
Captopril 25 мг, tab	Капотен	BMS		60			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Каптоприл Н.С.	Щелковский витаминовый завод		60			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				60			/таб	
Carbamazepine 200 мг, tab	Тегретол	Novartis		100			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Финлепсин	AWD		100			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				100			/таб	
Co-trimoxazole 8+40 мг/мл, suspension	Бактрим	Roche		1 фл. 100 мл			/мл	
<i>Наиболее продаваемый непатентованный аналог</i>	Ко-трайзол	Айдан Фарма		1 фл. 100 мл			/мл	
<i>Наиболее дешевый непатентованный аналог</i>				1 фл. 100 мл			/мл	
Nifedipine retard 20 мг, tab	Адалат ретард	Bayer		100			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Коринфар ретард	AWD		100			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				100			/таб	

A	B	C	D	E	F	G	H	I
Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте ✓)	Рекомендован ный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единицу	Коммента рии
Omeprazole 20 мг, tab	Лосек	AstraZeneca		30			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Омез	Dr. Reddy's laboratories		30			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				30			/таб	
Ranitidine 150 мг, tab	Зантак	GSK		60			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Ранисан	PRO.MED.C S Praha a. S.		60			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				60			/таб	
Salbutamol 0,1 мг/доза, inhaler	Вентолин	GSK		200 доз			/доза	
<i>Наиболее продаваемый непатентованный аналог</i>	Сальбутамо л	МХФП им. Семашко		200 доз			/доза	
<i>Наиболее дешевый непатентованный аналог</i>				200 доз			/доза	
Ceftriaxone 1 г, powder for injection	Роцефин	Roshe		1 флакон			/флакон	
<i>Наиболее продаваемый непатентованный аналог</i>	Цефтриаксо н	КМП		1 флакон			/флакон	
<i>Наиболее дешевый непатентованный аналог</i>				1 флакон			/флакон	

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Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте ✓)	Рекомендован ный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единицу	Коммента рии
Ciprofloxacin 500 мг, tab	Ципроксин	Bayer		1			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Ципросан	Sun Pharmaceutical s, Индия		1			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				1			/таб	
Fluoxetine 20 мг, tab	Прозак	Lilly		30			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Портал	Lek		30			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				30			/таб	
Phenytoin, 100 мг tab	Дилантин	Pfizer		100			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Дифенин			100			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				100			/таб	

Анкета по сбору цен на лекарственные средства
Дополнительный список

A	B	C	D	E	F	G	H	I
Наименование, лекарственная форма, дозировка/концентрация	Торговое наименование	Производитель	Наличие (если есть поставьте √)	Рекомендованный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единицу	Комментарии
Ampicillin 250 мг, таблетки	Пентрексил	BMS		28			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Ампициллина тригидрат	Борисовский завод медпрепаратов		28			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				28			/таб	
Verapamil 80 мг, tab	Изоптин	KNOLL		100			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Верапамил	Ферейн (Брынцалов-А)		100			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				100			/таб	
Gentamicin 40 мг/мл sol for injection	Гарамицин	Schering-Plough		1 амп			/мл	
<i>Наиболее продаваемый непатентованный аналог</i>	Гентамицина сульфат	Белмедпрепараты		1 амп			/мл	
<i>Наиболее дешевый непатентованный аналог</i>				1 амп			/мл	

A	B	C	D	E	F	G	H	I
Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте √)	Рекомендова нный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единиц у	Коммента рии
Diazepam 10 мг, tab	Валиум	Roche		50			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Диазепам	Балканфарма		50			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				50			/таб	
Clonazepam 2 мг, tab	Ривотрил	Roche		30			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Клоназепам	Польфа		30			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				30			/таб	
Mebendazole 100 мг, tab	Вермокс	Janssen		6			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>				6			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				6			/таб	
Metronidazole 250 мг, tab	Флагил	Рон Пуленг Рор		20			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Трихопол	Польфа		20			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				20			/таб	

A	B	C	D	E	F	G	H	I
Наименование, лекарственная форма, дозировка/концентрация	Торговое наименован ие	Производител ь	Наличие (если есть поставьте √)	Рекомендова нный размер упаковки	Имеющийся в наличии размер упаковки	Цена за имеющуюся в наличии упаковку	Цена за единиц у	Коммента рии
Fluconazole 150 мг, tab	Дифлюкан	Пфайзер		1			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Микосист	Гедеон Рихтер		1			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				1			/таб	
Furosemid 40 мг, tab	Лазикс	Ноеchst		50			/ таб	
<i>Наиболее продаваемый непатентованный аналог</i>	Фуросемид	Софарма, Болгария		50			/таб	
<i>Наиболее дешевый непатентованный аналог</i>				50			/таб	

Annex VI Private Sector Retail Price Ratios

No	Medicine Name	Medicine Type	Medicine Price Ratio (MPR)
1	Aciclovir	Brand	
1	Aciclovir	Most Sold	0,50
1	Aciclovir	Lowest Price	0,57
2	Amitriptyline	Brand	
2	Amitriptyline	Most Sold	
2	Amitriptyline	Lowest Price	4,81
3	Amoxicillin	Brand	
3	Amoxicillin	Most Sold	3,83
3	Amoxicillin	Lowest Price	3,54
4	Ampicillin	Brand	
4	Ampicillin	Most Sold	1,68
4	Ampicillin	Lowest Price	1,68
5	Atenolol	Brand	
5	Atenolol	Most Sold	4,23
5	Atenolol	Lowest Price	2,62
6	Beclometasone inhaler	Brand	
6	Beclometasone inhaler	Most Sold	
6	Beclometasone inhaler	Lowest Price	
7	Captopril	Brand	5,42
7	Captopril	Most Sold	1,39
7	Captopril	Lowest Price	1,39
8	Carbamazepine	Brand	
8	Carbamazepine	Most Sold	7,23
8	Carbamazepine	Lowest Price	1,59
9	Ceftriaxone injection	Brand	5,10
9	Ceftriaxone injection	Most Sold	
9	Ceftriaxone injection	Lowest Price	
10	Ciprofloxacin	Brand	
10	Ciprofloxacin	Most Sold	
10	Ciprofloxacin	Lowest Price	6,75
11	Clonazepam	Brand	
11	Clonazepam	Most Sold	1,85
11	Clonazepam	Lowest Price	1,85
12	Co-trimoxazole suspension	Brand	18,05
12	Co-trimoxazole suspension	Most Sold	4,74
12	Co-trimoxazole suspension	Lowest Price	4,91
13	Diazepam	Brand	
13	Diazepam	Most Sold	1,90
13	Diazepam	Lowest Price	1,78
14	Diclofenac	Brand	
14	Diclofenac	Most Sold	3,51
14	Diclofenac	Lowest Price	2,88
15	Fluconazole	Brand	
15	Fluconazole	Most Sold	83,69
15	Fluconazole	Lowest Price	31,70
16	Fluoxetine	Brand	
16	Fluoxetine	Most Sold	
16	Fluoxetine	Lowest Price	
17	Furosemide	Brand	
17	Furosemide	Most Sold	
17	Furosemide	Lowest Price	2,54
18	Gentamicin injection	Brand	

18	Gentamicin injection	Most Sold	2,20
18	Gentamicin injection	Lowest Price	2,56
19	Glibenclamide	Brand	
19	Glibenclamide	Most Sold	5,92
19	Glibenclamide	Lowest Price	4,16
20	Hydrochlorothiazide	Brand	
20	Hydrochlorothiazide	Most Sold	7,84
20	Hydrochlorothiazide	Lowest Price	8,71
21	Mebendazole	Brand	99,11
21	Mebendazole	Most Sold	
21	Mebendazole	Lowest Price	
22	Metronidazole	Brand	41,84
22	Metronidazole	Most Sold	16,47
22	Metronidazole	Lowest Price	3,62
23	Nifedipine Retard	Brand	
23	Nifedipine Retard	Most Sold	4,52
23	Nifedipine Retard	Lowest Price	4,42
24	Omeprazole	Brand	
24	Omeprazole	Most Sold	1,16
24	Omeprazole	Lowest Price	0,48
25	Phenytoin	Brand	
25	Phenytoin	Most Sold	
25	Phenytoin	Lowest Price	
26	Ranitidine	Brand	
26	Ranitidine	Most Sold	3,92
26	Ranitidine	Lowest Price	1,66
27	Salbutamol inhaler	Brand	1,82
27	Salbutamol inhaler	Most Sold	1,19
27	Salbutamol inhaler	Lowest Price	1,13
28	Verapamil	Brand	5,06
28	Verapamil	Most Sold	1,74
28	Verapamil	Lowest Price	1,51

Annex VII Percentage availability of medicines in the private sector

Medicine name	Core list	Innovator Brand	Most sold generic	Lowest price
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				generic
Aciclovir	yes	0.0	36.7	53.3
Amitriptyline	yes	0.0	0.0	53.3
Amoxicillin	yes	0.0	36.7	93.3
Ampicillin	no	0.0	30.0	100.0
Atenolol	yes	0.0	13.3	100.0
Beclometasone inhaler	yes	0.0	0.0	0.0
Captopril	yes	50.0	46,7	90,0
Carbamazepine	yes	0,0	40,0	70,0
Ceftriaxone injection	yes	26,7	0,0	10,0
Ciprofloxacin	yes	0,0	0,0	43,3
Clonazepam	no	0,0	23,3	23,3
Co-trimoxazole suspension	yes	26,7	20,0	60,0
Diazepam	no	0,0	53,3	53,3
Diclofenac	yes	6,7	36,7	93,3
Fluconazole	no	3,3	13,3	43,3
Fluoxetine	yes	0,0	0,0	3,3
Furosemide	no	10,0	10,0	96,7
Gentamicin injection	no	3,3	36,7	100,0
Glibenclamide	yes	0,0	73,3	80,0
Hydrochlorothiazide	yes	0,0	93,3	96,7
Mebendazole	no	76,7		6,7
Metronidazole	no	13,3	70,0	100,0
Nifedipine Retard	yes	0,0	76,7	80,0
Omeprazole	yes	0,0	36,7	86,7
Phenytoin	yes	0,0	6,7	10,0
Ranitidine	yes	0,0	36,7	90,0
Salbutamol inhaler	yes	23,3	66,7	96.7
Verapamil	no	26,7	30,0	90,0

Annex VIII. Affordability of standard treatments purchased in the private sector

#	Condition	Treatment	Duration (days)	Number of days' wages to purchase treatment		
				IB	MSG	LPG
1	Arthritis	Diclofenac 25mg twice a day	30		2.2	1.8
2	Asthma	Salbutamol inhaler 0.1mg/dose 200 doses	1 inhaler	7.3	4.8	4.5
3	Depression	Amitriptyline 25mg 3 times a day	30			6.8
4	Diabetes	Glibenclamide 5mg twice a day	30		3.0	2.1
5	Hypertension	Hydrochlorothiazide 25mg daily	30		1.7	1.9
6	Hypertension	Atenolol 50mg daily	30		2.4	1.5
7	Hypertension	Captopril 25mg twice a day	30	17.6	4.5	4.5
8	Gonorrhoea	Ciprofloxacin 500 mg tablet	1			0.4
9	Peptic ulcer	Omeprazole 20mg twice a day	30		28.0	11.5
10	Peptic ulcer	Ranitidine 150mg twice a day	30		12.0	5.1
11	Respiratory tract infection: adults	Amoxicillin 250mg 3 times a day	7		2.8	2.6
12	Respiratory tract infection: children 6 months -5 years	Co-trimoxazole susp 8+40mg/ml 5ml twice a day	7	9.3	2.5	2.5

Annex IX Letter of endorsement

To whom it may concern

Medicine price survey

Dr Saliya Karymbaeva, Head of Drug Information Centre, will be undertaking a survey of medicine prices in Bishkek, Chui, Jalal-Abad, Osh, Naryn and Batken oblasts during February – May 2005. This requires the collection of price information at a sample of retail pharmacies and other medicine outlets, as well as the collection of information on price composition at different points in the supply chain, from manufacturer to consumer.

The survey follows methods promoted by the World Health Organization and Health Action International and is designed to help identify ways of improving the affordability of medicines in Kyrgyzstan.

We understand that the results will be publicly available by the end of December, 2005 and that complete anonymity of individual pharmacies and medicine outlets will be assured. A prior appointment will be made with each pharmacy to be visited at a date and time convenient to staff.

On behalf of Ministry of Health, I would be grateful if you would provide full access to the information needed for this survey.

Sh. Urkunbaev

Director-General, Department of Drug Provision and Medical Equipment of MoH

Bishkek

Date number