Drug Information Center
Project ZdravPlus/USAID

Medicine prices in the Republic of Tajikistan

survey report

February 2005

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Abbreviations

BNF	British National Formulary
EML	Essential medicines list
HAI	Health Action International
HF	Health facility
IMI	International median index
IRP	International reference price
LPG	Lowest price generic equivalent
M	Medicine
MI	Median index
MOH	Ministry of Health
MPR	Median price ratio
MSG	Most sold generic equivalent
MSH	Management Sciences for Health
MSP	Manufacturer's selling price
MUP	Manufacturer's unit price
NGO	Nongovernmental organization
RT	Republic of Tajikistan
SDEC	State Drug Expertise Center
SMUP	Sector median unit price
WHO	World Health Organization

INTRODUCTION

A survey on the prices people pay for medicines in Tajikistan was conducted in February 2005. The research was undertaken by staff at the Drug Information Center with the purpose of defining and comparing the price of medicines in different sectors and regions of the country, and to compare prices of innovator brand and generic medicines with international reference prices.

The retail (patient) price of 34 medicines was collected in the public and private sectors in the Tajikistan capital city Dushanbe, and three regions: Khatlon, Soghd and Districts of Republican Submission. For each medicine, the price of the innovator brand, most sold generic equivalent and lowest priced generic equivalent was sought.

The availability of these medicines was also measured. For twelve medicines the cost of a standard course of treatment was calculated and then analysed to compare the cost with the daily wage of the lowest paid unskilled worker of the state. Price components, from the manufacturer's selling price to the patient price (taxes, mark-ups etc) were also assessed.

BACKGROUND

The population of Tajikistan at the end of 2002 was 6,640,000 people. The area of the republic is 143,100 sq km with a population density of 43.8 people per square kilometre (2003 data).

Medicines are not only financially inaccessible to the majority of the country's population, but are also a heavy burden on the state pharmaceutical budget. Taking into account the decreasing level of personal incomes, affordability of treatments can only be guaranteed through an appropriate national medicine pricing policy and a purchasing strategy. In addition the state policy should seek to improve the public health service infrastructure, increase healthcare financing and promote the rational use of medicines. High prices of medicines are a major barrier to access. In order for medicines to be affordable to all people in Tajikistan it is necessary to base the national pricing policy on accurate and reliable information.

The research was conducted in conformity with a methodology developed by the World Health Organization (WHO) and Health Action International (HAI). The technique described in the manual *Medicine Prices: A new approach to measurement* (WHO/HAI, 2003) describes standardized data collection, analysis and interpretation of the prices of medicines. The manual also describes how to assess price components from the manufacturer's selling price to the patient price.

OBJECTIVES

The research aimed to find answers to the following questions:

- Do prices for the same medicine differ in the public and private sector?
- Do prices for innovator brands differ to generic equivalents?
- Do prices differ in different regions of the country?
- What are the taxes and duties on medicines, and how do theses charges influence the retail price of medicines?
- How affordable are medicines for ordinary people in Tajikistan?

METHODOLOGY

SELECTION OF THE SURVEY REGIONS

Administratively Tajikistan is divided into the following areas:

1. Soghd region is in the north of the Republic which includes 14 districts and 10 cities. The city of Khujand is the major centre of the region.
2. The Khatlon region consists of 24 districts and 6 cities. Kurgan-Tyube is the major city of the region.
3. GBAO (Autonomic Region of Mountainous Badakhshon) is in the west and includes 7 districts and 1 city. The city of Khorog is the major centre of the region.
4. Dushanbe and Districts of Republican Submission. Districts of Republican Submission include 13 districts and 4 cities.

The research was conducted in the capital Dushanbe and three regions: Khatlon, Soghd and DRS (Districts of Republican Submission). We did not included GBAO in the survey as the area is mountainous and difficult to access; and every winter the road to GBAO is closed. As per the methodology, in each of the geographical regions five public sector facilities and five private retail pharmacies were randomly chosen within one day's traveling distance. In total, we surveyed 40 pharmacies (20 public sector and 20 private sector) covering the entire country.

MEDICINE SELECTION

The medicines were selected using the following criteria:

- The medicines should be widely used in various clinical cases for widespread indications and should be accessible in standard forms
- Whether or not the medicines are included on the WHO Essential Medicines List
- Whether the preparations are used to treat widespread conditions such as cardiovascular diseases, diabetes, asthma, respiratory infections and mental disorders.

The WHO/HAI manual lists 30 core medicines that they recommend are surveyed to permit international comparisons. Of these, we surveyed 18 that were known to be available in Tajikistan in the defined strengths and dose forms.

In addition to the core medicines, we selected 16 supplementary medicines which are included both in the *Primary Health Care Clinical Practice Guidelines* and the Tajikistan Essential Medicines List.

See Annex I for a list of the medicines in the analysis (core and supplementary).

We consulted a selection of pharmacists to identify the most sold generic equivalent products.

DATA COLLECTION FORMS

A data collection form, based on the form that accompanies the WHO/HAI manual, was developed for use in the survey. For each medicine (innovator brand, most sold generic equivalent and lowest priced generic equivalent) spaces were provided to indicate availability, the pack size found, pack price, unit price and any notes. The data collection form is included in Annex II[1].

1 Nifedipine retard 20mg tablets was listed in the data collection form but nifedipine 10mg immediate-release tablets was surveyed and included in the analysis. Data for aminophylline tablets was not included in the analysis. Esidrex was surveyed as the innovator brand of hydrochorothiazide but not found in any facility. After the survey, we were informed that Esidrex is a generic.

TRAINING OF SURVEY PERSONNEL

Prior to starting the research, two days of training was provided for data collectors. The data collectors were pharmacists from Tajikistan WHO Pharmaceutical Taskforce, the Ministry of Health in Tajikistan and the Drug Information Center.

DURATION

It took on average between one to one and a half hours plus travel time to survey one pharmacy. Four to five pharmacies were surveyed per day. The total duration of the survey of pharmacies was three weeks. In the Soghd and Khatlon regions we had to collect data from the reserve list of facilities.

Prior to data collection, we developed a weekly detailed plan for visiting pharmacies taking into account peak working hours in pharmacies. Anonymity was offered to pharmacies.

Two data collectors visited each facility and recorded the prices if the medicine was physically available.

ENDORSEMENT

An official letter from the Ministry of Health of Tajikistan and the State Drug Expertise Center was presented to the pharmacies. It provided assurance to directors of the pharmacies of the legitimacy and legality of the research, and emphasized the importance of price and availability issues.

BUDGET

The research budget was developed taking into account all expenses at a preparatory stage: data collectors costs, travel expenses for data collection, accommodation, materials, communication and contingencies.

DATA ENTRY

Data was entered into the Excel workbook that accompanied the manual (unit prices in each facility for each medicine, facility code, region, distance to major hospital etc.). For the unit prices, double entry was undertaken to ensure accuracy. The workbook autochecking system was also used to check the data.

ANALYSIS OF DATA

The median unit price is used instead of mean value because the difference of values between the minimum and maximum can be substantial, which may distort the real price situation. The median value excludes outlier values.

REFERENCE PRICES

Price data collected during the survey was then compared to MSH (Management Sciences for Health) 2003 reference prices. The MSH reference prices are calculated on the basis of prices from recent not-for-profit and for-profit suppliers, of multi-source medicines, to developing countries. MSH median supplier prices were used but where these were not available, median tender prices were used. These prices are available at: http://erc.msh.org

Prices are, therefore, expressed as median price ratios (MPR) – the local median unit price across the facilities surveyed divided by the median unit reference price (in local currency). Median price ratios are only calculated if the medicine was found in 4 or more facilities in a sector.

CONVERSION OF REFERENCE PRICES

The MSH unit prices for the core medicines were pre-entered in the workbook by WHO/HAI. We then entered the MSH unit price for each supplementary medicine. All MSH unit prices are automatically converted into Tajikistan somoni when the exchange rate is entered into the workbook. The exchange rate at the time of data collection was 3.07 somoni per 1 USA dollar (as quoted by the National Bank of Tajikistan). Local unit prices were entered into the workbook in local currency (TJ Somoni).

AFFORDABILITY

To calculate the purchasing power of the population (out-patient treatment), standard treatment courses were defined and entered into the workbook along with the daily salary of the lowest paid government worker. In February 2005 the monthly salary was 12 Somoni (or 0.4 somoni per day). The cost of a course of treatment is then automatically calculated and expressed as the number of days that would need to be worked, by the lowest paid public sector worker, to pay for the course of treatment.

We calculated the cost of treatment, and hence its affordability to the population of Tajikistan, for the following twelve conditions:

Stomach ulcer (ranitidine); diabetes (glibenclamide); hypertension: first degree (hydrochlorothiazide), second degree (atenolol); gonorrhea (ciprofloxacin); arthritis (diclofenac); depression (amitriptyline); asthma (salbutamol); pneumonia (amoxicillin); children's respiratory diseases (co-trimoxazole); cardiac failure (digoxin); and pyelonephritis (nalidixic acid).

The British National Formulary and WHO recommendations were the basis for determining the daily dose and duration of treatment. WHO/HAI have a general recommendation of 7 days for acute conditions, and 30 days for chronic conditions.

RESULTS

PRIVATE SECTOR

Innovator brand products

Only four brand name products were found in 4 or more pharmacies among the 34 products surveyed. These were captopril, diclofenac, loperamide and mebendazole. The median of the median price ratios (MPR) for these four medicines was 42.58 times the international reference prices.

Most sold generic equivalents

The most sold generic products of 25 medicines were found in 4 or more private pharmacies. The median MPR was 2.34 with 50% in the range 1.57 – 3.52.

Lowest price generic equivalents

Of the 34 medicines surveyed, 28 lowest priced generics were found in 4 or more facilities. The median MPR for these items were 2.29 with 50% of the items in the range 1.47 – 3.63.

Table 1: Median MPRs, private sector

	Number of products found in 4 or more pharmacies	Median MPR	MPR 25%-quartile	MPR 75%-quartile
Innovator brands	4	42.58	29.18	55.79
Most sold generic equivalents	25	2.34	1.57	3.52
Lowest price generic equivalents	28	2.29	1.47	3.63

Only four medicines were found in 4 or more facilities in all three forms, as presented in Table 2. Except for captopril, the innovator brand products were very expensive being between 37 times and 79 times the MSH reference prices. There was virtually no difference between the most sold generic and lowest priced generic of each medicine except loperamide (for captopril the most sold generic was the only generic found in the 4 pharmacies). In the case of loperamide, the median price ratio for the lowest price generic was higher than the most sold generic equivalent.

Table 2: Median price ratios, individual medicines, private sector

	MPR Innovator brand	MPR Most sold generic	MPR Lowest price generic
Captopril	4.94	2.47	2.47
Diclofenac	47.90	2.34	2.13
Loperamide	37.27	7.18	11.04
Mebendazole	79.45	3.97	3.97
Amoxicillin	-	3.03	2.84
Co-trimoxazole	-	7.07	4.52
Fluconazole	-	61.37	37.79
Hydrochlorothiazide	-	37.23	37.23
Ranitidine	-	1.57	0.92

Comparing generics prices in the private sector

When the generics of 25 ‘matched’ medicines were compared (both generic forms, most sold and lowest priced, for each medicine) the median price ratio for most sold generic equivalents was 2.34

and the lowest price generic equivalent was 2.13. This is not a great difference and means that generic products are priced competitively in Tajikistan.

Comparison with reference prices

If a MPR is 1 then the local price is the same as the reference price. Table 3 shows three examples, from the private sector, where local prices far exceed, are similar to, and are under the international reference prices (MSH2003). The price of hydrochlorothiazide 25 mg caps/tab far exceeds the reference price (MPR 37 so the local price is 37 times the MSH price), whereas the price of omeprazole 20 mg caps/tab was below the MSH price (MPR 0.25 for the LPG, 0.47 for MSG). Glibenclamide 5mg tablets are similar in price to the MSH price (but slightly higher – MPR 1.59).

Table 3: Variations of local verses international reference prices, private sector

	Innovator Brand	Most sold generic equivalent	Lowest price generic equivalent
Hydrochlorothiazide 25 mg caps/tab.	-	37,23	37,23
Glibenclamide 5 mg caps/tab.	-	1,59	1,59
Omeprazole 20 mg caps/tab.	-	0,47	0,25

Summary for private sector

Availability of innovator brands was low with very high prices. Generic products were available and were generally priced at about double the MSH reference prices. Considering transportation taxes, duties and other charges these appear to be reasonable costs. This reflects a competitive private sector market for generic medicines.

PUBLIC SECTOR

Brand name products

Only four innovator brand products were found, among the 34 items surveyed, in at least 4 of the 20 public sector facilities surveyed. There were captopril, diclofenac, loperamide and mebendazole. The median MPR of these four products in the public sector was 49.44 with 50% in the range 32.12 – 64.96.

Most sold generic equivalent

Twenty-three products were found in 4 or more of the facilities surveyed. The median MPRs for these medicines was 2.33 with 50% in the range 1.58 – 3.42.

Lowest price generic equivalent

Of the 34 medicines surveyed, 26 lowest priced generics were found in 4 or more facilities. The median MPR for these items was 2.36 with 50% in the range 1.45 – 3.42.

Table 4: Median MPRs, public sector

	Number of products found in 4 or more pharmacies	Median MPR	MPR 25%-quartile	MPR 75%-quartile
Innovator brand	4	49.44	32.12	64.96
Most sold generic equivalent	23	2.33	1.58	3.42
Lowest price generic equivalent	26	2.36	1.45	3.42

Three medicines were available in 4 or more facilities in all three forms, as presented in Table 5. The innovator brand products are very expensive being between 41 times and 87 times MSH reference prices. For captopril, generic were only found in 3 public sector facilities. In some cases, such as

hydrochlorothiazide, the generic versions were very expensive compared to the international price. There were other medicines where the local price was less than the international reference price e.g. gentamicin injection.

Table 5: Median price ratios, individual medicines, public sector

	MPR Innovator brand	MPR Most sold generic	MPR Lowest price generic
Captopril	4.27	-	-
Diclofenac	57.48	3.19	2.13
Loperamide	41.41	10.77	13.80
Mebendazole	87.39	3.97	3.97
Amoxicillin	-	3.31	2.84
Enalapril	-	3.17	2.82
Erythromycin	-	2	2
Hydrochlorothiazide	-	33.5	33.5
Levothyroxine	-	7.58	6.81
Metronidazole	-	3.52	3.52
Gentamicin injection	-	0.98	0.98

Comparing generics prices in public sector

When 23 medicines were matched the median price ratio for the most sold generic equivalent was 2.33 and the lowest price generic equivalent was same – 2.33. Therefore, for these medicines, the most sold and cheapest generic products are identically priced in the public sectors facilities surveyed in Tajikistan. In some cases, this is because the most sold product was the only generic equivalent product found in the facility so it was also the lowest priced.

Summary for public sector

Availability of innovator brands was low with very high prices. Generic products were available and were generally priced at about double the MSH reference prices. Considering transportation taxes, duties and other charges these appear to be reasonable prices. This reflects a competitive public sector market.

COMPARING PRICES IN THE PUBLIC AND PRIVATE SECTOR

When comparing the prices of generics found in both sectors, public sector prices were slightly higher than in the private sector - for both the most sold and lowest priced generics.

Table 6: Comparison of median price ratios for medicines in both sectors (all medicines)

	Median MPR Public sector 20 outlets	Median MPR Private sector 21 outlets	Number of medicines found in both sectors
Most sold generic equivalents	2.28	2.04	22
Lowest price generic equivalents	2.36	2.08	26

Table 7 shows MPRs for individual medicines where all three types were found in both the public and private sector.

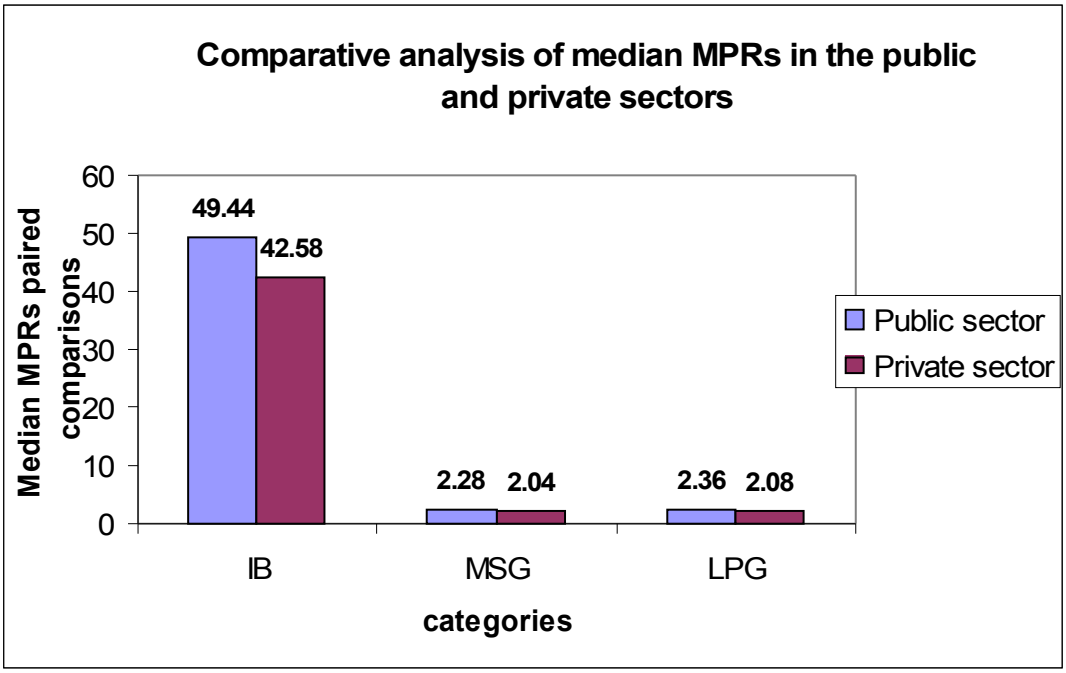
Table 7: MPRs, individual medicines, public and private sector

	Public sector MPRs			Private retail sector MPRs		
	IB	**MSG**	**LPG**	**IB**	**MSG**	**LPG**
Loperamide 2 mg	41.41	10.77	13.80	37.27	7.18	11.04
Mebendazole 100 mg	87.39	3.97	3.97	79.35	3.97	3.97
Diclofenac 25 mg caps/tab	57.48	3.19	2.13	47.9	2.34	2.13

Our conclusion is that these two sectors are functioning in a very similar fashion.

Comparative analysis of median MPRs (matched pairs) in the private and public sectors shows that in the public sector the prices are slightly higher than in the private sector. Note: the analysis for IB was based only on 4 medicines. The analysis for MSGs and LPGs was based on 22 and 26 medicines respectively.

Figure 1: Comparative analysis of median MPRs in the public and private sectors



MEDICINE AVAILABILITY

Most medicines were available in either the public or private facilities as generic products. Few innovator brands were found in either sector.

Products with very low availability (less than 10%) were:

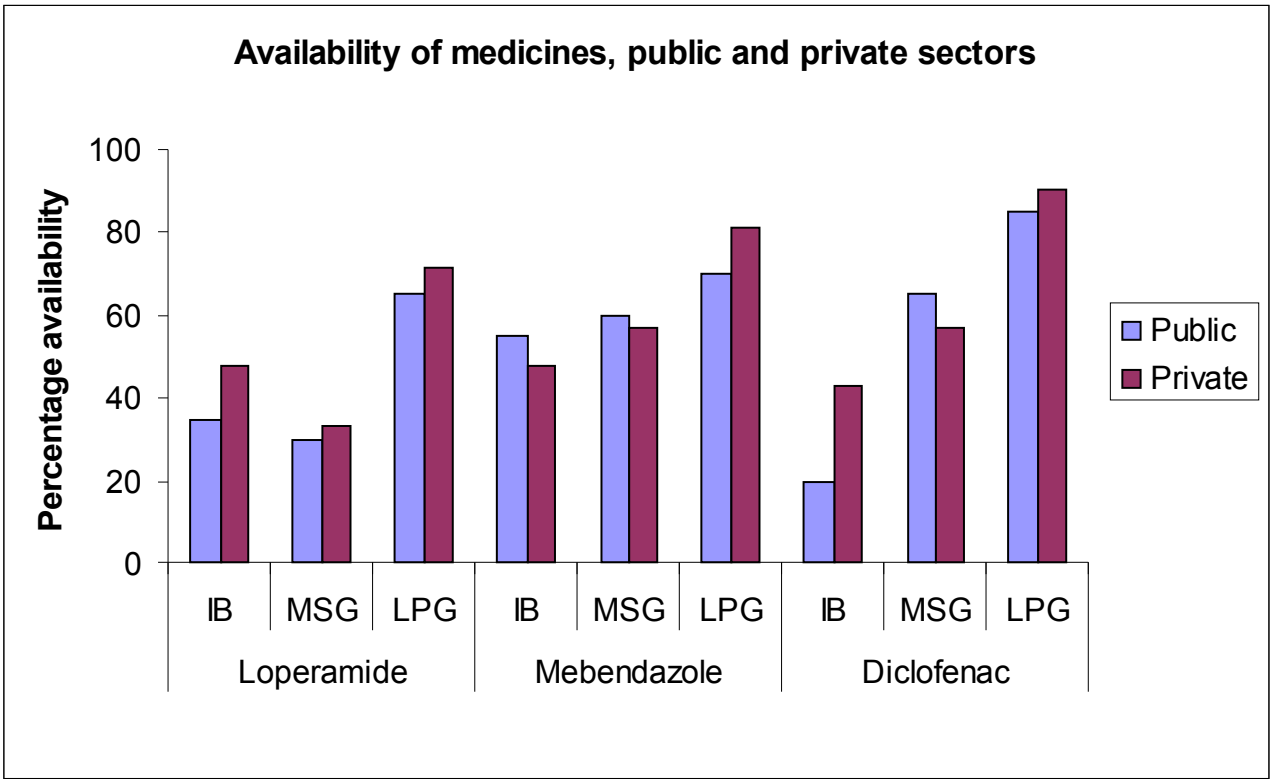
- Phenytoin – not found in any facility surveyed
- Beclometasone – 4.8% private sector
- Carbamazepine – 4.8% public sector and 4.8% private sector
- Metformin – 4.8% private sector
- Amitryptline – 5% public sector and 4.8% private sector)

Public sector availability was 80% or more for the following medicines (generics): amoxicillin, ampicillin, atenolol, ciprofloxacin, erythromycin, furosemide, gentamicin, glibenclamide, ibuprofen,

nifedipine, salbutamol, chloramphenicol, diclofenac, enalapril, metoclopramide, metronidazole and omeprazole.
Private sector availability was 80% or more for the following medicines (generics): amoxicillin, ampicillin, atenolol, ciprofloxacin, erythromycin, furosemide, gentamicin, glibenclamide, ibuprofen, nifedipine, salbutamol, chloramphenicol, diclofenac, co-trimoxazole, hydrochlorothiazide, enalapril, metronidazole and ranitidine.

For the comparative analysis of the availability of medicines in the private and public sectors, we analysed the following medcines: loperamide 2 mg caps/tab, mebendazole 100 mg caps/tab, and diclofenac 5 mg caps/tab. As shown in Figure 2 below, the percentage availability of loperamide was higher in the private sector than the private sector, but for the other two medicine the availability differed depending whether the medicine was the IB, MSG or LPG.

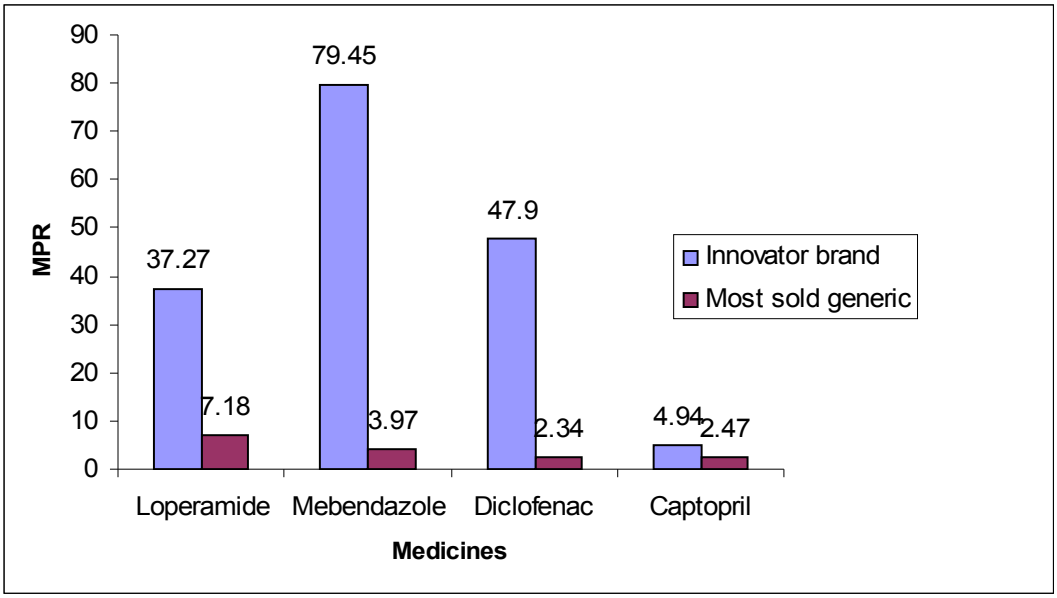
Figure 2: Percentage availability of a selection of medicines, public and private sectors



COMPARATIVE ANALYSIS OF PRICES OF INNOVATOR BRANDS AND GENERICS IN THE PRIVATE SECTOR

There were only a few products sold in both sectors. These were captopril, diclofenac, loperamide and mebendazole. Comparing innovator brand and generic prices for the same medicines, the innovator brand of captopril cost twice as much as the generic equivalent in the private pharmacies. For diclofenac the innovator brand was 20 times the price of the generic products. For loperamide the 'brand premium' was 5 times (comparing to the MSG) and for mebendazole the brand premium was almost 20 times. With only four innovator brands found in more than 4 private pharmacies, it is not meaningful to aggregate and compare brand and generic prices. However, these four examples show that innovator brands are priced many times above generic prices. A policy to promote the use of generic products is needed to make medicines more affordable.

Figure 3: MPRs, innovator brands and most sold generics, in the private sector



AFFORDABILITY OF TREATMENT

The affordability of treatment relates to the unit price of the medicine, the daily dose, the duration of treatment, and the patients ability to pay. The survey measured prices of individual medicines across sectors and then calculated the median cost for a course of therapy and compared the cost to the income of the lowest paid unskilled government worker. As the innovator brand products were rarely available we have limited the analyses to generic products.

We analysed the affordability of treatment for twelve diseases. The monthly wage of a public employee is 12 Somoni, therefore, the daily wage is 0.4 Somoni.

In Table 8 below are examples of the affordability of standard treatment for an acute and a chronic condition when the medicine is purchased in the public sector.

Table 8: Affordability of two treatments when the medicines were purchased in the public sector

Treatment	**Product Type**	**Public Sector**	
		Median Treatment Price	Number of days wages
Pneumonia: Amoxicillin 250mg three times a day x 7 days	Innovator brand		
	Most sold generic	3.68	9.2
	Lowest price generic	3.15	7.9
Diabetes: Glibenclamide 5 mg twice a day x 30 days	Innovator brand		
	Most sold generic	1.8	4.5
	Lowest price generic	1.8	4.5

As shown in the table, a week's course of treatment for pneumonia using the cheapest generic of amoxicillin is 7.9 days' wages of the lowest paid government worker. Clearly this is unaffordable. More than 4 days' pay is required to treat diabetes with glibenclamide for one month. This, too, is unaffordable in the public sector. Data on the affordability of other treatments, in both the public and private sectors, is shown in Table 9.

Table 9: Affordability of standard treatments, public and private sectors.

Treatment	Public sector – days' wages		Private sector – days' wages	
	MSG	LPG	MSG	LPG
Hypertension *Hydrochlorothiazide 25mg daily for 30 days*	27	27	30	30
Hypertension *Atenolol 50mg daily for 30 days*	5	5	5.3	5.3
Adult resp. infects. *Amoxicillin 250mg three times a day for 7 days*	9.2	7.9	8.4	7.9
Pediatric resp. infecs. *Co-trimoxazole paed suspension 10mls daily for 7 days*	N/A	10.5	13.7	8.8
Gonorrhoea *Ciprofloxacin 500mg 1 tab*	0.5	0.5	0.5	0.5
Arthritis *Diclofenac 25mg twice daily for 30 days*	7.5	5	5.5	5
Depression *Amitriptyline 25mg three times a day for 30 days*	N/A	N/A	N/A	N/A
Asthma *Salbutamol inhaler 0.1mg/dose 200 doses*	15	15	15	15
Peptic ulcer *Ranitidine150mg twice daily*	15.8	11.3	18.0	10.5
Cardiovascular disease *Digoxin 0.25mg daily for 30 days*	N/A	4.5	N/A	3.8
Pyelonephritis *Nalidixic acid 500mg four times a day for 7 days*	70	70	70	70

N/A = Not available. In these cases the availability was so poor that analyses was not possible

PRICE COMPONENTS

Currently retail prices for domestic and imported consumer goods are not restricted. Retail prices for pharmaceutical products are established including duties and taxes.

For imported medical products (except for humanitarian aid) according to the current legislation suppliers pay the following taxes:

- 20% VAT
- transportation expenses varying from 6% to 20% depending on the county in which the medicines are purchased, the manufacturer, and the type of transport (train, truck, plane etc)
- 5 % customs duties
- 0.15% customs procedures
- 4% - 5 % tax if sold outside of the Dushanbe city

- 1% tax for sales in Dushanbe city
- 15% markup for the wholesaler
- 15 - 30% mark-up for the retailer.

These additional charges amounted to 123% mark-up on the original price. Of these charges some are unavoidable, such as transport and the margin of the wholesaler and retailer. But if taxes and duties were removed this figure would be reduced to 74%. The government could easily reduce the cost of medicines by removing taxes and duties.

DISCUSSION

Since gaining independence, reforms in the public health service have begun in Tajikistan. One of the priorities is the development of the pharmaceutical sector by improving the availability of good quality medicines and creation of enterprises for manufacturing medicines from local raw materials.

At the present time there is no system for monitoring medicine prices. Public purchasing of medicines at the national level is undertaken without comparative analysis of international medicines prices. In order to address this, it is planned to undertake further evidence gathering among heads of the Ministry of Health and to undertake research in other areas to demonstrate the necessity of monitoring medicine prices using the WHO/HAI methodolgy.

Due to the absence of information on medicines and prices amongst consumers, people have no knowledge about generics and blindly follow the recommendations of doctors. Doctors tend to prescribe expensive, innovator brand (originator) preparations, and not always good quality lower priced generics. The lack of awareness of medicines types, prices, substitution principals etc amongst doctors, pharmacists and consumers is frequently the reason for polypharmacy, irrational use, or lack of access due to high prices that have to be paid by poorer members of the Tajikistan population.

The former system of registering medicines on standard prescriptions is no longer practised. Doctors write out prescriptions on pre-printed pharmaceutical prescriptions with preparations already entered, or on scraps of paper without an official or medical establishment logo.

PROBLEMS ASSOCIATED WITH THE PRICES AND AVAILABILITY OF MEDICINES

One of main problems of government regulation of prices is the affordability of medicines. In addition, if medicines are physically inaccessible, is it possible to address questions about economic availability? The government should only adjust the prices of medicines when the market is saturated and the prices are too high, or there is no competition in the market. Secondly, when there is real price competition in the wholesale market, intervention of the state is undesirable. In today's economic situation, intervention of the government in issues of price control is possible only for those medicines for which the state reimburses the costs.

From the results of this medicine price survey, the Drug Information Center draw the following conclusions:

- Standard treatments for some common conditions are unaffordable to ordinary people in Tajikistan
- The availability of generic medicines in the state pharmacies is slightly lower than in the private pharmacies
- The availability of generic preparations is much higher than innovator brand preparations
- Prices of generic medicines were substantially less than the few innovator brands found
- Prices of medicines in private pharmacies are slightly lower than in the state pharmacies
- The prices of some medicines in Tajikistan are much higher than MSH prices (innovator brands and generics)
- The taxes and duties on medicines need to be removed or at least decreased (the VAT and the custom duties) to improve affordability

RECOMMENDATIONS

On the basis of the evidence gathered the following recommendations can be given to the Government:

- Results of this research should be considered when reviewing the State Medicine Policy
- A meeting should be organized with members of the Association of Pharmacists to discuss the survey results
- A meeting should also be held with the Head of the Tajikistan Ministry of Health to discuss the results.
- Participation in national conferences is needed to attract government attention to the research results
- A strategy is needed to highlight the purpose, and to encourage the importation. of good quality generic medicines
- Doctors should be encouraged to prescribe quality approved generic preparations
- There should be greater price transparency
- Medicine prices, availability and affordability should be regularly monitored.

Research using the WHO/HAI indicators cannot give the full picture of the pharmaceutical sector of Tajikistan. However, the Drug Information Center hopes that the results and the recommendations presented in this report will be studied and provide a basis for a more in-depth study of the pharmaceutical sector of Tajikistan, aiming to make medicines affordable to the country's population.

ANNEX I LIST OF MEDICINES SURVEYED

Core Medicines

Aciclovir	200 mg	cap/tab
Amitriptyline	25 mg	cap/tab
Amoxicillin	250 mg	cap/tab
Atenolol	50 mg	cap/tab
Beclometasone	0.05 mg/dose	inhaler
Captopril	25 mg	cap/tab
Carbamazepine	200 mg	cap/tab
Ciprofloxacin	500 mg	cap/tab
Co-trimoxazole	8+40 mg/ml	suspension
Diazepam	5 mg	cap/tab
Diclofenac	25 mg	cap/tab
Glibenclamide	5 mg	cap/tab
Hydrochlorothiazide	25 mg	cap/tab
Metformin	500 mg	cap/tab
Omeprazole	20 mg	cap/tab
Phenytoin	100 mg	cap/tab
Ranitidine	150 mg	cap/tab
Salbutamol inhaler	0.1 mg/dose	dose

Supplementary medicines

Ampicillin	250mg	tab
Chloramphenicol	500mg	tab
Digoxin	0.25mg	tab
Enalapril	5mg	tab
Erythromycin	250mg	tab
Fluconazole	150mg	cap/tab
Furosemide	40mg	tab
Gentamicin	40mg/ml	injection
Ibuprofen	200mg	tab
Levothyroxine	0,1mg	tab
Loperamide	2mg	cap/tab
Mebendazole	100mg	tab
Metoclopramide	10mg	tab
Metronidazole	250mg	tab
Nalidixic acid	500mg	tab
Nifedipine	10mg	tab

ANNEX II MEDICINE PRICE DATA COLLECTION FORM

Most sold: determined nationally **Lowest price: determined at facility**

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	**Brand name(s)**	**Manufacturer**	**Available tick ✓ for yes**	**Pack size recom-mended**	**Pack size found**	**Price of pack found**	**Unit price (4 digits)**	**Comments**
Aciclovir tab 200 mg	Zovirax	GSK		20			/tab	
Most sold generic equivalent	Aciclovir	Ferein,Russia		20			/tab	
Lowest price generic equivalent				20			/tab	
Amitriptyline tab 25 mg	Tryptizol	MSD		50			/tab	
Most sold generic equivalent	Amitriptyline	Doru Pakhsh Pharm. MFG Comp. Iran		50			/tab	
Lowest price generic equivalent				50			/tab	
Amoxicillin caps/tab 250 mg	Amoxil	SKB (GSK)		20			/tab	
Most sold generic equivalent	Amoxicillin	ZAO «Severnay zvezda»Russia		20			/tab	
Lowest price generic equivalent				20			/tab	
Atenolol tab 50 mg	Tenormin	AstraZeneca		60			/tab	
Most sold generic equivalent	Atenolol	ZAO «Severnay zvezda»Russia		30			/tab	
Lowest price generic equivalent				30			/tab	
Beclometasone inhaler 50 mcg/ dose	Becotide	GSK		1 inhaler: 200 doses			/dose	
Most sold generic equivalent	Beclometasone	Shre Corporation, England		1 inhaler: 200 doses			/dose	
Lowest price generic equivalent				1 inhaler: 200 doses			/dose	
Captopril tab 25 mg	Capoten	BMS		60			/tab	
Most sold generic equivalent	Captopril	Ferein,Russia		60			/tab	
Lowest price generic equivalent				60			/tab	
Carbamazepine tab 200 mg	Tegretol	Novartis		100			/tab	
Most sold generic equivalent	Carbamazepine	Ferein,Russia		100			/tab	
Lowest price generic equivalent				100			/tab	
Ciprofloxacin tab 500 mg	Ciproxin	Bayer		10			/tab	
Most sold generic equivalent	Ciprofloxacin	Russia ZAO «Obolensk»		10			/tab	
Lowest price generic equivalent				10			/tab	

Co-trimoxazole paed suspension (8+40) mg/mL	Septrin	GSK		100 mL			/mL	
Most sold generic equivalent	Co-trimoxazole	Russia Le-pharm		100 mL			/mL	
Lowest price generic equivalent				100 mL			/mL	
Diazepam tab 5 mg	Valium	Roche		20			/tab	
Most sold generic equivalent	Relanium	Europharm, Polfarma		20			/tab	
Lowest price generic equivalent				20			/tab	
Diclofenac tab 25 mg	Voltaren	Novartis		30			/tab	
Most sold generic equivalent	Diclofenac	Russia ZAO «Obolensk»		30			/tab	
Lowest price generic equivalent							/tab	
Fluconazole caps/tab 150 mg	Diflucan	Pfizer		30			/tab	
Most sold generic equivalent	Mikosist 150 mg	Gedeon Richter		30			/tab	
Lowest price generic equivalent				30			/tab	
Glibenclamide tab 5 mg	Daonil	HMR		60			/tab	
Most sold generic equivalent	Glibenclamide	Russia "Semashko"		50			/tab	
Lowest price generic equivalent				60			/tab	
Hydrochlorothiazide tab 25 mg	Esidrex	Novartis		20			/tab	
Most sold generic equivalent	Hypotiazid	Hinoin		20			/tab	
Lowest price generic equivalent				20			/tab	
Metformin tab 500 mg	Glucophage	Merck		100			/tab	
Most sold generic equivalent	Metformin	Poland NILMIS		100			/tab	
Lowest price generic equivalent				100			/tab	
Nifedipine Retard tab 20 mg	Adalat Retard or SL	Bayer		100			/tab	
Most sold generic equivalent	Nifedipine Retard	Russia Ferein		100			/tab	
Lowest price generic equivalent				100			/tab	
Omeprazole caps 20 mg	Losec	AstraZeneca		30			/caps	
Most sold generic equivalent	Omeprazole	Russia ЗАО Brincalov A		30			/caps	
Lowest price generic equivalent				30			/caps	
Phenytoin caps/tab 100 mg	Dilantin	Parke Davis		100			/tab	
Most sold generic equivalent	Phenytoin	Russia, ICN		100			/tab	
Lowest price generic equivalent				100			/tab	
Ranitidine tab 150 mg	Zantac	GSK		60			/tab	
Most sold generic equivalent	Ranitidine	ZAO «Severnay zvezda»Russia		60			/tab	
Lowest price generic equivalent				60			/tab	
Salbutamol inhaler 0.1 mg per dose	Ventoline	GSK		1 inhaler: 200 doses			/dose	

Most sold generic equivalent	Salbutamol	Russia ЗАО Altaivitamin		1 inhaler: 200 doses			/dose	
Lowest price generic equivalent				1 inhaler: 200 doses			/dose	

Supplementary list of medicines

A	B	C	D	E	F	G	H	I
Generic name, dosage form, strength	**Brand name(s)**	**Manufacturer**	**Available tick ✓ for yes**	**Pack size recom-mended**	**Pack size found**	**Price of pack found**	**Unit price (4 digits)**	**Comments**
Aminophylline tab 100 mg	Euphyllin	Byk Gulden		20			/tab	
Most sold generic equivalent	Euphyllin	Russia,Tathimpharm preparat		20			/tab	
Lowest price generic equivalent				20			/tab	
Ampicillin tab 250 mg	Doktacillin	AstraZeneca		20			/tab	
Most sold generic equivalent	Ampicillin	Russia OAO Sintez		20			/tab	
Lowest price generic equivalent				20			/tab	
Chloramphenicol tab 500 mg	Chloromycetin	Pfizer		50			/tab	
Most sold generic equivalent	Chloramphenicol Leciva	Leciva		50			/tab	
Lowest price generic equivalent				50			/tab	
Digoxin tab 0,25 mg	Lanoxin	GSK		30			/tab	
Most sold generic equivalent	Digoxin	Gedeon Richter		30			/tab	
Lowest price generic equivalent				30			/tab	
Enalapril tab 5 mg	Renitec	MSD		28			/tab	
Most sold generic equivalent	Ednit	Gedeon Richter		28			/tab	
Lowest price generic equivalent				28			/tab	
Erythromycin tab 250 mg	Erythrocin	Abbott		20			/tab	
Most sold generic equivalent	Erythromycin	Russia OAO Sintez		20			/tab	
Lowest price generic equivalent				20			/tab	
Furosemide tab 40 mg	Lasix	Hoechst		50			/tab	
Most sold generic equivalent	Furosemide	Russia Moschimpharmpreparat		50			/tab	
Lowest price generic equivalent				50			/tab	
Gentamicin inj 40mg/ml	Garamycin	Schering-Plough		2ml			/ml	
Most sold generic equivalent	Gentamicin	Russia ЗАО		2ml			/ml	

		Brincalov A						
Lowest price generic equivalent				2ml			/ml	
Ibuprofen tab 200 mg	Brufen	Knoll		20			/tab	
Most sold generic equivalent	Ibuprofen	Russia Tathimpharmpreparat		20			/tab	
Lowest price generic equivalent				20			/tab	
Loperamide tab/caps 2 mg	Imodium	Janssen		20			/tab	
Most sold generic equivalent	Loperamide	ZAO «Severnay zvezda»Russia		20			/tab	
Lowest price generic equivalent							/tab	
Levothyroxine tab 100 mg	Eltroxin	GSK		100			/tab	
Most sold generic equivalent	Levothyroxine	Germany Bring. ingelchem		100			/tab	
Lowest price generic equivalent				100			/tab	
Mebendazole tab 100 mg	Vermox	Gedeon Richter		6			/tab	
Most sold generic equivalent	Mebendazole	India GSM-laboratory		6			/tab	
Lowest price generic equivalent				6			/tab	
Metoclopramide tab 10 mg	Maxolon	GSK		50			/tab	
Most sold generic equivalent	Metoclopramide	India Cyper pharm GSM-laboratory		50			/tab	
Lowest price generic equivalent				50			/tab	
Metronidazole tab 250 mg	Flagyl	Rhone Poulenc		20			/tab	
Most sold generic equivalent	Metronidazole	Belmed.preparat,Belorussia		20			/tab	
Lowest price generic equivalent				20			/tab	
Nalidixic acid tab 500 mg	Negram	Winthrop		56			/tab	
Most sold generic equivalent	Nevigramon	Chinoin		56			/tab	
Lowest price generic equivalent				56			/tab	

ANNEX III National Pharmaceutical Sector form

TAJIKISTAN

Population: 6.2 million

Daily wage of lowest paid government worker: 0.4 somon

Rate of exchange (commercial "buy" rate) to US dollars on the first day of data collection: 1US$ = 3.07 Somon

Sources of information: MoH, WHO

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: 149+16medical items

If yes, year of last revision: January 2003.

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 procurement

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? ☐ Yes ☒ No

Are there public health programmes fully implemented by donor assistance which also provide medicines? (e.g. TB, family planning, etc.) ☒ Yes ☐ No

If yes, please specify: Vaccination, IMCI

Distribution

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

If yes, specify levels:

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.)			
Number of inhabitants per qualified pharmacist (approx.)			
Number of pharmacies with qualified pharmacists			
Number of medicine outlets with pharmacy technician			
Number of other licensed medicine outlets			

Private sector

Are there independent pharmacies? ☒ Yes ☐ No Number:
Are there chain pharmacies? ☐ Yes ☒ No Number:
Do doctors dispense medicines? ☐ 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	
Estimated total private medicine expenditure in past year (out of pocket, private insurance, NGO/mission)	
Total value of international medicine aid or donations in past year	

What percentage of medicines by value are imported? %

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):

- Wholesale %
- Retail %

Is there a maximum retail price (sales price)? ☐ Yes ☒ No
(If it varies, give maximum and minimum)

- Maximum:
- Minimum:

Do patients pay professional fees (e.g. dispensing fee)? ☐ Yes ☒ No

If yes, please describe:

"Other" sector
Are there maximum profit margins? ☐ Yes ☒ No

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

- Wholesale %
- Retail %

Is there a maximum sales price? ☐ Yes ☒ No

Insurance, risk-sharing or prepayment schemes
Are there any health insurance, risk-sharing or prepayment schemes or revolving medicine funds? ☐ Yes ☒ No

If yes, please describe:
Are all medicines covered? ☐ Yes ☒ No

If no, state which medicines are covered (e.g. EML, public health programmes):

Are some patients / groups of patients exempted, regardless of insurance coverage? (e.g. children < X yrs, war veterans) ☐ Yes ☒ No

If yes, please specify:
Estimated percentage of population covered %
Is it official policy to supply all medicines free at primary health care level? ☐ Yes ☒ No

If no, are some free? ☒ Yes ☐ No

If yes, tick all that apply:

- θ Tuberculosis
- θ Malaria
- θ Oral rehydration salts
- θ Family planning
- θ Others, please specify:

Are there official user charges/patient co-payments/fees? ☐ Yes ☒ No
Are all medicines supplied free at hospitals? ☐ Yes ☒ No

If no, are some free? ☐ Yes ☒ No

If yes, please specify: