

Pakistan

Medicine prices, availability, affordability & price components

Medicine prices matter

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

This survey was conducted in 2004 by The Network for Consumer Protection, Islamabad and studied the price, availability and affordability of 29 important medicines (25 of which were on the NEDL).

This survey found that in Pakistan:

- Public health facilities had extremely low availability of essential medicines
- Public procurement of medicines is efficient in achieving low prices for the medicines - but inadequate in supplying needed quantities to patients from government health facilities.
- Medicines for common treatments were unaffordable and out of reach to the poor when purchased in the private sector
- Originator brands were more likely to be found in the private sector than generics
- Overall originator brands were 47% more expensive than generic equivalents – however this could be up to 7 times (600%) more expensive for some medicines
- Adherence to regulated maximum prices was largely but not entirely observed
- Total cumulative mark-up in the private sector is typically 25% for locally produced generic medicines

Generally, across the WHO Eastern Mediterranean Region, a similar picture emerges: reasonably efficient public sector procurement, people having to pay for medicines in the private sector at frequently unaffordable prices; and the need for stronger government action to introduce or improve national medicines policies and effective pricing policiesⁱⁱ.

Pakistan

Pakistan is the sixth most populous country in the world with a currently estimated population of approximately 158 million people, 66% of who live in rural areas. Pakistan is a low income country with per capita GDP of US\$ 736 (2004).

Approximately one third (29.2 %) of the population or about 45 million people live below the official national

poverty line. Poverty varies significantly among rural (34%) and urban areas (19.1%) and from province to province, for example from 24% percent in urban Sindh to 51% percent in rural Sindh, with pockets of extreme poverty in some places.

Pakistan spent 2.4% of its GDP on health in 2003 with health expenditure per capita reaching US\$ 4.0. Private health expenditure accounts for 72% and public expenditure for 28% (WHO, 2003) of total expenditure on health. 98% of private health expenditure is out-of-pocket spending which means that all medicine costs usually have to be covered by the patients.

Since Pakistan has a federal political system, health care provision is decentralized and is primarily the responsibility of the provincial governments. The Federal Ministry of Health is responsible for national policy, planning, coordination and the implementation of the six national health programs on family planning, immunization, HIV/AIDS; tuberculosis, malaria and nutrition.

Communicable diseases are the most prevalent and leading causes of sickness and death include gastroenteritis, respiratory infections, congenital abnormalities, tuberculosis, malaria, and typhoid fever.

The National Drug Policy (1997) promotes the essential drug concept and the use of the National Essential Drug List, for example by mandating all government and semi-government health institutions to conduct bulk procurement in accordance with the list; however there is poor adherence to this.

Medicine prices are regulated by the government. The Price Review Committee, a subcommittee of the Drug Registration Board formed under the Drug Act 1976 sets the maximum wholesale and retail price for each registered product. Since 1993, medicines have been categorized as price controlled (about 800 medicines) or decontrolled. Periodic across-the-board price increases on account of the general rate of inflation and changes in the exchange rate of the rupee, etc. is applied for these 800 controlled medicines. For those in the decontrolled category, a more liberal system operates through which higher price increases are allowed at regular intervals.

Pakistan has a rapidly growing pharmaceutical industry with a market value of approx. US\$ 1.72 billion. More than 400 manufacturing companies operate in the country, meeting around 95% of the country's pharmaceutical requirements.

Medicine price & availability survey

The survey was designed to answer the following questions:

- What is the availability of originator brand products and generic equivalents of selected essential medicines in public and private health sectors?
- What is the difference in the prices of originator brand products and generic equivalents in the private sector?
- How affordable are medicines for treatment of common conditions for people with low income?
- How do prices of medicines in Pakistan compare to the same products in other countries?
- 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?

A total of 29 medicines were surveyed between July and September 2004, all selected from the WHO/HAI core list of medicines with pre-set dosage forms, strengths and recommended pack sizesⁱⁱⁱ. Prices and availability were recorded for the originator brand product (OB) which was determined at the national level; and for the lowest priced generic equivalent (LPG) which was determined at each facility.

Data was collected from a total of 30 public sector facilities and 48 private pharmacies across four provinces - North Western Frontier Province (NWFP), Balochistan, Sindh and Punjab) - and the Islamabad Capital Territory. Dispensaries in government health facilities were only surveyed for the availability of the selected medicines since patients do not pay directly for medicines in public health sector facilities.

Public sector procurement prices were obtained from provincial health departments of two provinces - NWFP and Sindh.

Table 1. Measurements in each sector

Measurement	Public sector	Private sector
Price to patient		✓
Availability	✓	✓
Affordability	✓	✓
Procurement price	✓	
No. of facilities visited	30	48

Presentation of price information

The WHO/HAI survey methodology presents prices in local currency and as median price ratios (MPR). The MPR is calculated by dividing the local price by an international reference price (converted to local currency). An MPR of 1 means the local price is equivalent to the reference price whereas an MPR of 2 means the local price is twice the reference price. The international reference prices used for this survey were taken from the 2003 Management Sciences for Health (MSH) *International Drug Price Indicator Guide*^{iv} (the MSH Guide pulls together information from recent price lists of large, non-profit generic medicine suppliers and thus reflects the prices governments could be expected to pay for medicines); the use of reference prices facilitates international comparisons.

Interpretation of findings

Country specific factors such as pricing policies; market size; competition; national economic and other factors

may influence prices. For the purposes of these surveys, in a low or middle income countries an MPR of less than or equal to 1 for public sector procurement prices and public sector patient prices are considered to indicate acceptable (not excessive) prices.

Affordability

Affordability is calculated as the number of days the lowest paid unskilled government worker would have to work to pay for one month's treatment for medicines for chronic conditions, and a treatment course for acute conditions. At the time of the survey, the lowest paid government worker earned 62.3 Pakistani Rupees (PKR) per day [equivalent to US\$ 1.03 per day at the time of the survey]^v.

Having to spend more than 1 day's income per month on family medicine needs could be considered to be unaffordable. Table 2 demonstrates how many days this worker would have to work to purchase various treatments.

Overall, a low paid unskilled government worker would generally need one day's (or less) to 3 day's wages for treating an acute condition such as a respiratory infection, while treating chronic conditions ranged between 1 to 7.7 days when using lowest priced generics or 1.4 to 36.4 days' wages if purchasing originator brand products.

Should this low paid worker need treatment for hypertension, arthritis and a peptic ulcer, then they would have to use 7.6 to 53.1 days of salary every month to purchase needed medicines – depending upon the choice of medicine, and whether brand or generic was dispensed^{vi}.

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

	OB	LPG
Diabetes		
metformin	1.9	1.6
glibenclamide	1.4	0.9
Hypertension		
atenolol	2.9	1.1
captopril	6.4	4.2
losartan	24.9	5.4
nifedipine retard	4.8	-
Arthritis		
diclofenac	4.5	1.7
Peptic ulcer		
omeprazole	23.7	4.8
ranitidine	8.5	6.5
Asthma		
beclometasone inhaler	3.1	-
salbutamol inhaler	1.4	1.4
Depression		
Amitriptyline	1.4	-
Fluoxetine	36.4	7.7
Respiratory tract infection		
adult		
	amoxicillin	1.0
	ciprofloxacin	11.3
child	cotrimoxazole susp	0.4
		0.3

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Public sector procurement prices

Public sector procurement prices were obtained centrally from two provinces, NWFP and Sindh, from the provincial health departments as the other two provinces i.e. Punjab and Balochistan refused to provide procurement prices.

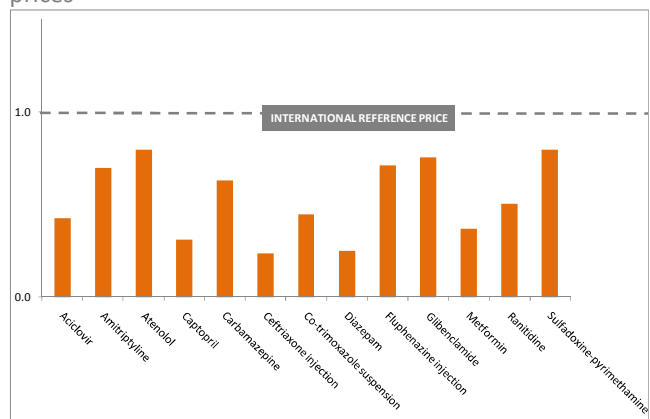
The overall procurement price for the lowest priced generic versions was 0.57 times the international reference price (i.e. 43% less). Two originator brand medicines (of the 14 survey medicines procured) were being procured for the public sector at 2.24 times the international reference price (table 3).

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

	Originator brand	Lowest priced generic
Median MPR (interquartile range)	2.24 (1.6 - 2.9)	0.57 (0.4 - 0.7)
Minimum	1.0	0.2
Maximum	3.5	1.0
No. of medicines	2	14

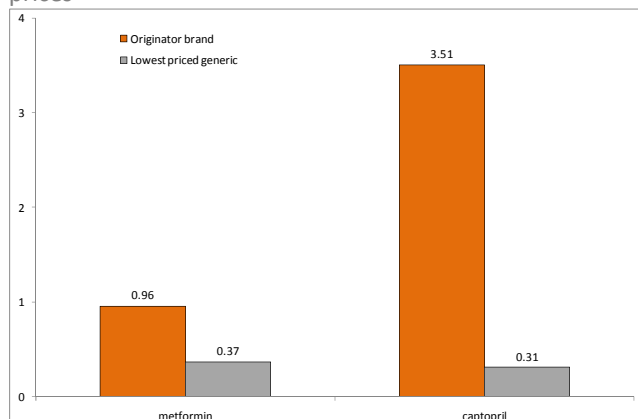
All of the generic medicines were procured at under the international reference price. In fact, 75% of the generic medicines procured were 0.74 times or less than the international reference prices, providing evidence of efficient procurement practices (figure 1).

Figure 1. Number of times more expensive: public sector procurement prices compared to international reference prices



However one province procured two originator brand medicines – metformin and captopril - which were procured at 2.6 and 11.3 times the price of the price paid for the generic equivalent that was procured in the other province (figure 2).

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



Public sector availability

Availability data only was collected from the 30 public sector facilities as patients do not pay directly for medicines in public health sector facilities. Availability of generic equivalents for the 29 surveyed medicines in public sector facilities was extremely low with a median percent availability of 3.3%. If we excluded the medicines that are not on the essential drugs list (fluconazole, lovastatin, nifedipine, ranitidine) & the antiretrovirals (indinavir, nevirapine & zidovudine which are available only in specialized centers), the median availability is still only a very low 15.5% (table 4).

Table 4. Availability in public facilities

	Originator brand	Lowest priced generic
Median availability (interquartile range)	0%	3.3% (0 - 33.3%)
Median availability for essential medicines (interquartile range)	0%	15.0% (3.3-47.5%)

Table 5 presents the availability of the surveyed medicines in the public sector. Only 6 medicines were found in at least in half of the government health facilities, namely metformin (73.3%), amoxicillin (66.7%), atenolol (66.7%) diazepam (60%), captopril (56.7%) and ciprofloxacin (50%). Some other important essential medicines that should be available at all levels of care according to the national essential drugs list had very low or non-availability; sulfadoxine-pyrimethamine (3.3%), salbutamol inhaler (3.3%), and no carbamazepine or phenytoin was found in any of the public health facilities.

Table 5. Availability in public facilities

Availability	Medicine
0 %	beclometasone inhaler, carbamazepine, hydrochlorothiazide, indinavir, losartan, lovastatin, nevirapine, nifedipine retard, phenytoin, zidovudine
1 - 10%	aciclovir, fluconazole, fluoxetine, fluphenazine inj, ranitidine, salbutamol inhaler, sulfadoxine-pyrimethamine
11 - 40%	amitriptyline, ceftriaxone inj., co-trimoxazole susp, diclofenac, glibenclamide, omeprazole
41 – 50%	ciprofloxacin
51-60%	captopril, diazepam
61 – 80%	amoxicillin, atenolol, metformin
>80%	none

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Private sector patient prices

Price and availability data was collected from 48 private retail pharmacies; overall the prices of originator brands were 3.36 times the international reference price compared to 2.26 times for the lowest priced generic equivalents (table 6).

Table 6. Number of times more expensive: patient prices in the private sector compared to international reference prices

	Originator brand	Lowest priced generic
Median MPR (interquartile range)	3.36 (2.2 – 5.9)	2.26 (1.1-3.6)
Minimum	0.72	0.2
Maximum	26.2	7.0
No. of medicines	23	21

The lowest priced generic equivalents were just over double the international reference price with some medicines much lower than the international price (0.7 times - 30% less - for salbutamol inhaler) and others much higher (up to 7 times for ciprofloxacin).

Originator brands were just over three times the international reference price with some medicines ranging from much lower than the international reference price (0.7 times - or 30% less - for salbutamol inhaler) and others much higher (up to 26 times for ciprofloxacin (table 7).

Some medicines were higher multiples of the international reference price in both originator brand and generic versions – indicating that there could be room for lower prices – namely ciprofloxacin, diclofenac, fluoxetine, and ranitidine; 4 medicines equating to 16% of the surveyed medicines which were found in either originator and/or generic version. The reason for the low price ratio for losartan may have been the high reference price.

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

	OB	LPG
losartan	0.9	0.2
salbutamol inhaler	0.7	0.7
omeprazole	4.1	0.8
metformin	1.2	1.0
ranitidine	5.8	4.4
fluoxetine	21.2	4.5
diclofenac	15.2	5.7
ciprofloxacin	26.2	7.0

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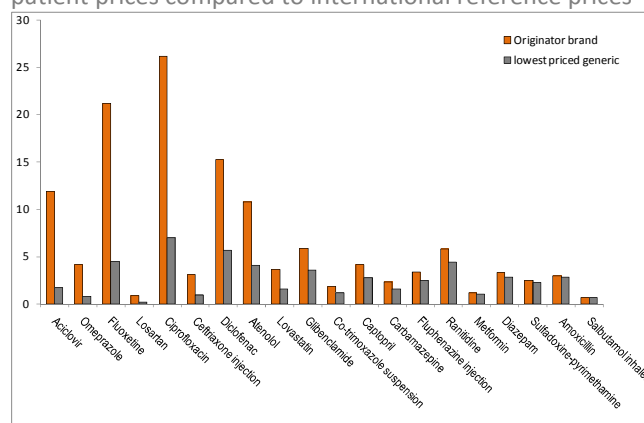
Originator brand medicines were overall 47% more than their lowest priced generic equivalents (table 8).

Table 8. Ratio matched pairs of the different types of medicines

	Ratio
Originator brand: lowest priced generic (n=20 matched pairs)	1.47

Both originator and generic versions of the same medicines were being sold; figure 3 demonstrates the differences in price for originator brands and lowest priced generic equivalents - these multiples range from 1 times (i.e. the same) for amoxicillin and salbutamol inhaler to 7 times for aciclovir.

Figure 3. Number of times more expensive: private sector patient prices compared to international reference prices



Private sector availability

Originator brands were more available than generics in private pharmacies. The median availability of the originator brands surveyed was 54.2%; and the availability of the lowest priced generic equivalents surveyed was 31.3% (table 9).

Table 9. Availability in private sector outlets

	Originator brand	Lowest priced generic
Median availability (interquartile range)	54.2% (14.6 – 83.3%)	31.3% (6.3 – 50%)

Originator brands were more widely available on 15 out of the 20 occasions when both originator and generic versions were found - even when the originator brands were many times more expensive than the lowest priced generic equivalents, for example, originator brand diclofenac was much more available than the lowest priced generic, despite being 2.7 times (370%) more expensive (Table 10).

Table 10. Availability and number of times more expensive: originator brands to lowest priced generics in private pharmacies

	Availability		Number of times OB:LPG
	OB	LPG	
losartan	40%	13%	4.5
ciprofloxacin	65%	67%	3.7
ceftriaxone inj	65%	54%	3.2
diclofenac	81%	31%	2.7
atenolol	85%	58%	2.7
lovastatin	29%	13%	2.3

Table 11 presents the availability of any version of the surveyed medicines in the private sector; common medicines such as hydrochlorothiazide, aciclovir, phenytoin, fluconazole, amitriptyline, beclometasone inhaler, lovastatin, losartan as well as the antiretrovirals were found in less than 40% facilities.

Table 11. Availability in private pharmacies

Availability	Medicine
0 %	hydrochlorothiazide, indinavir, nevirapine, zidovudine
1-10%	aciclovir, fluconazole, phenytoin
11 -40%	amitriptyline, beclometasone inhaler, lovastatin, losartan
41 – 50%	none
51-60%	fluphenazine inj., fluoxetine, nifedipine retard
61 – 80%	captopril, ceftriaxone inj., ciprofloxacin, diazepam, omeprazole
>80%	amoxicillin, atenolol, carbamazepine, co-trimoxazole susp, diclofenac, glibenclamide, metformin, ranitidine, salbutamol inhaler, sulfadoxine-pyrimethamine

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Compliance with the pricing regulations by private retail pharmacies

The maximum retail price of regulated medicines must be printed on each medicine box. However, when medicines are bulk packaged, for example 50 strips of 10 tab/foil strip, the controlled price is printed only on the main carton not on the individual strips, therefore patient will usually not see the maximum retail price. Packs can also be split up, and informants reported that single generic tablets can be sold at similar prices as originator brand product prices.

Medicine prices in private retail pharmacies are set by the Ministry of Health. The small variation in the prices of the same medicine in different pharmacies and regions suggests that there is generally adherence to selling at the regulated prices.

Price components

The Drugs Act of 1976 regulates the import, export, manufacture, storage, distribution and sale of medicines in Pakistan. For locally manufactured medicines – which account for an estimated 95% of national pharmaceutical requirements - by law wholesalers can mark-up prices by a maximum of 2% and retailers by 15% of the patient price; and local distribution accounts for around 5% of the final patient price^{vii}. Cumulative mark-up for locally produced generic products is around 25%.

Recommendations of the investigators

- Interventions are urgently needed to improve access to essential medicines in the public sector, especially for the poorest who cannot afford access to basic treatments through the private sector.
 - Increase transparency and efficiency of procurement procedures by focusing purchasing on the Essential Drug List
 - Review procurement methods including maximizing the purchasing power by pooling procurement of basic essential drugs at district, provincial and federal government level
 - Build capacity of staff at critical management levels to better manage drug supplies and related logistics
 - Strengthen distribution systems to achieve better availability of essential medicines at primary health care level
 - Increase budget allocation for procurement of medicines
 - Consider innovative financing mechanisms to increase available funds for essential drugs in public sector.
- Improve affordability of and access to medicines in the private sector by
 - Creating further incentives for production and sales of good quality locally produced medicines.
 - Creating incentives to operate more medicine outlets adhering to national standards (i.e. selling registered products at controlled prices, etc.) in rural areas to improve physical access to good quality and affordable medicines.
 - Consider innovative financing mechanisms that can support the sale of a small group of essential medicines (used for treatment of most common diseases) at manufacturer's cost price in private retail pharmacies
- Regulations, laws and policies related to access to medicines should be reviewed or introduced as needed including:
 - Medicine pricing policies should be regularly reviewed.
 - Individual medicines prices should be regularly reviewed.
 - Monitoring of adherence to maximum retail prices and trends of price changes.
 - Drug promotion practices should be reviewed and regulated to improve access to unbiased and appropriate information about medicines and treatments both for the public and health professionals.
 - Medicine pricing practices of dispensing physicians should be assessed to create more transparency about the prices they charge. Review of regulations to deal with any unethical practices may be necessary.
 - Generic prescribing and substitution should be allowed and promoted.

4. Drug regulatory authority functions should be strengthened to assure the quality of all marketed medicines, with regular monitoring of manufacturers and importers on quality standards.
5. Education of the public and health professionals is needed to:
 - Build trust and create demand for low priced good quality generics instead of higher priced originator brands.
 - Widely and regularly disseminate medicine prices information to the public and health professionals to facilitate informed decision making about prescribing and purchasing of medicines
 - Improve the rational use of medicines by promoting clinical guidelines, formularies and independent and unbiased continuing education of health professionals.
6. Establish a nation-wide system to regularly monitor medicine prices, make prices public and initiate legal action against those selling at higher than the approved prices.

Further information, contact The Network for Consumer Protection, Islamabad, Pakistan.
 Email main@thenetwork.org.pk

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



ⁱ WHO/HAI, Measuring medicine prices, availability, affordability and price components <http://haiweb.org/medicineprices/>

ⁱⁱ Prices, availability and affordability of medicines in the World Health Organization Eastern Mediterranean Region: a synthesis report of medicine price surveys undertaken in selected World Health Organization Eastern Mediterranean Region countries (in press).

ⁱⁱⁱ Reflecting the global burden of disease, WHO/HAI Medicine Prices, a new approach to measurement, 2003

^{iv} <http://erc.msh.org>

^v 1 USD = PKR 60.5

^{vi} One antihypertensive (atenolol, captopril, losartan or nifedipine retard); diclofenac for arthritis, and one ulcer healing drug (omeprazole or ranitidine)

^{vii} Additionally, each pharmaceutical manufacturer contributes 1% of gross profit, before deduction of income tax, towards a Central Research Fund maintained by the Federal Government. This is incorporated into the manufacturers selling price as it is 1% of profits not a percentage of the cost price