Republic of Moldova

Medicine prices, availability, affordability and price components

Medicine prices matter

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

This survey was conducted in 2011 by Dr. Zinaida Bezverhni and Professor Safta, Department of Social Pharmacy, State Medical and Pharmaceutical University in Chisinau with support from the Medicines Agency and WHO's European Regional Office; 50 essential medicines were surveyed in the public and private sectors.

Medicine price & availability survey

The survey was designed to answer the following questions:

- How efficient are public sector procurement prices?
- What is the availability and patient prices of originator brand products, most sold generic equivalents and lowest priced generic equivalents in the public and private sectors?
- What is the difference in prices and availability between the public and private sectors, and in different regions of Moldova?
- How affordable are medicines, for the treatment of common conditions, for people on the minimum wage?
- What taxes are levied on medicines and what is the level of the various mark-ups that contributes to the retail price of medicines?

Of the 50 essential medicines that were surveyed, 10 were from the WHO/HAI global list of medicines with pre-set strengths, dosage forms and recommended pack sizes[ii], plus 40 selected medicines of national importance. All medicines were on the national Essential Medicines List.

Prices and availability were recorded for the originator brand product (OB) and most sold generic equivalent (MSG) both of which were identified at the national level; and for the lowest priced generic equivalent (LPG) which was determined at each pharmacy. Only 17 originator brand products were registered in Moldova. In the public sector pharmacies, full patient prices was recorded (although it is acknowledged that some medicines or patient groups received medicines either fully or partially subsidized).

Data was collected from a total of 50 public sector pharmacies and 50 private pharmacies across 3 regions of the country: North, South and Centre regions.

Public sector procurement prices were obtained from the Medicines Agency of the Ministry of Health.

This survey found that in Moldova:

- The availability of medicines in public pharmacies (51%) and private pharmacies (58%) was sub-optimal. Eight essential medicines had 30% or less availability in any sector
- Overall the government was procuring lowest priced generics at reasonable prices, however, some individual medicines were very high priced
- Patient prices in public pharmacies were high as medicines are procured from private wholesalers
- Prices of lowest priced generics were 10% lower in private pharmacies compared to public pharmacies
- In public and private pharmacies patients pay about twice the price for originator brands compared to generics, and most sold generics are 30-40% higher priced than lowest priced generics
- Most standard treatments were not affordable for people on low wages, especially to treat pyschoses, schizophrenia, Parkinsons Disease and ulcerative colitis
- Patient prices in Moldova were higher than in Romania, ex-factory prices were 14% higher when compared to 6 European countries.
- In the public sector, cumulative mark-ups were higher in urban areas (about 47-52%) compared to rural areas (about 40-41%). Cumulative mark-ups in the private sector were slightly higher than in the public sector, with little variation between urban and rural areas.
- The wholesaler mark-up was just under 15% in both sectors. Pharmacy mark-ups were about 18-25%, except in the public sector in rural areas (about 14-15%).
- The greatest contribution to the final patient price is the manufacturers selling price / CIF price (over 60%)
- VAT 8% is applied to all medicines

Presentation of price information

The WHO/HAI survey methodology presents prices in local currency (lei) and as median price ratios (MPR). The MPR is calculated by dividing the local price by an international reference price (converted to lei). 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 2010 Management Sciences for

Health (MSH) International Drug Price Indicator Guide[iii] (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); use of reference prices facilitates international comparisons.

Table 1. Measurements in each sector

Measurement	Public sector	Private pharmacies
Price to patient	✓	✓
Availability	✓	✓
Affordability	✓	✓
Procurement price	✓	
No. of pharmacies visited	50	50

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 are considered to indicate acceptable (not excessive) prices.

Affordability

Affordability is calculated as the number of days a person on the minimum salary would have to work to pay for one month's treatment for medicines for chronic conditions, and a 7 day treatment course for acute conditions. At the time of the survey, the lowest paid government worker earned 20 lei per day [equivalent to approximately US$ 1.70 per day][iv].

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

Table 2. Affordability: number of days' wages to purchase standard treatment

		Public sector pharmacies	Private pharmacies
Diabetes			
Glibenclamide 5mg		1.0 MSG/0.9 LPG	1.0 MSG/0.8 LPG
Hypertension			
Atenolol 50mg		0.9 MSG/LPG	1.0 MSG/0.9 LPG
Amlodipine 5mg		3.7 MSG/LPG	3.2 OB 3.9 MSG/3.7LPG
Enalapril 10mg		2.3 MSG/1.7 LPG	2.4 MSG/1.8 LPG
Lisinopril 10mg		3.8 MSG/ 2.7 LPG	3.9 MSG/2.9 LPG
Hydrochloro-thiazide 25mg		-	2.4 MSG/LPG
Asthma			
Salbutamol inhaler 100mcg/dose		2.4 OB 2.2 MSG/LPG	2.6 OB 2.3 MSG/LPG
Arthritis			
Diclofenac 50mg		17.9 OB 1.3 MSG/1.4 LPG	19.1 OB 1.4 MSG/1.5 LPG
Peptic ulcer			
Omeprazole 20mg		1.7 MSG/LPG	1.8 MSG/LPG
Ranitidine 150mg		2.9 MSG/2.5 LPG	3.0 MSG/2.2 LPG
Hypercholesterolaemia			
Simvastatin 20mg		9.9 MSG/8.4 LPG	10.2 MSG/6.5 LPG
Analgesia			
Tramadol		8.1 MSG/8.7 LPG	9.2 MSG/9.3 LPG
Ulcerative colitis			
Sulfasalazine		15.2 MSG/LPG	15.8 MSG/LPG
Parkinsons Disease			
Levodopa+Carbidopa 250+25mg		29.3 MSG/LPG	31.1 MSG/LPG
Schizophrenia			
Clozapine 100mg		46.1 OB	49.9 OB
Anti-psychotic			
Risperidonum 2mg		31.2 OB	32.1 OB
Depression			
Amitriptyline 25mg		2.5 MSG/LPG	2.7 MSG/2.6 LPG
Respiratory tract infection			
adult	Amoxicillin 250mg	0.9 MSG/LPG	0.9 MSG/LPG
	Ciprofloxacin 500mg	5.1 MSG 1.5 LPG	5.4 MSG 1.6 LPG
	Clarithromycin 500mg SR	6.6 MSG	15.5 OB 6.8 MSG
child	Amoxicillin 125mg/5ml susp 60ml	1.3 MSG 1.0 LPG	1.4 MSG 1.3 LPG

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Acute respiratory infections

On average, this low paid worker would need between 1 and 15 days salary to purchase treatment for an acute respiratory infection.

Chronic conditions

The number of days' salary required to pay for medicines for chronic conditions such as diabetes, hypertension, depression, peptic ulcer and asthma ranged between about 0.8 and 18 days depending upon the medicine selected and the sector. Treating pyschoses, schizophrenia and Parkinsons Disease required on average at least 30 days salary to buy 30 days' of treatment.

Should this low paid worker need treatment for hypertension, diabetes and hypercholesterolaemia, then they would have to use 8 and 15 days of salary every month to purchase medicines, depending upon the choice of medicine and where dispensed[v]. This scenario only represents the medicine needs for one person in a family and hence the burden would be much greater if other family members need medicines.

Public sector procurement prices

Public sector procurement prices were obtained centrally from the Ministry of Health (medicines supplied to hospital in-patients). As shown in Table 3, the overall median procurement price for the most sold generics and lowest priced generics were 2.36 and 1.68 times the international reference price respectively (i.e. 136% and 68% more). Of the medicines procured, only 2 were originator brands (clonazepam and clozapine) at 2.39 times the international reference price - for these medicines no generics were procured. 46% of the medicines were procured at 2 or more times the international reference price. Some medicines were procured at very low prices e.g. clonazepam and cephalexin were about 60% below

international reference prices, however, other medicines were procured at much higher prices e.g. hydrochlorothiazide, acetylsalicyclic acid and metronidazole were 31, 24, and 22 times the international reference price respectively.

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

	Originator brand	Most sold generic	Lowest priced generic
Median MPR *(interquartile range)*	2.39	2.36 (*0.84-5.31)*	1.68 *(1.04-3.67)*
Minimum	0.40	0.53	0.44
Maximum	4.38	31.90	31.90
No. of medicines	2	17	45

Table 4 lists those medicines with the highest multiples of international reference prices where there could be opportunities for buying from lower price sources.

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

	Most sold generic	Lowest priced generic
Acetylsalicyclic acid 100mg		24.08
Amitriptiline 25mg	6.35	6.35
Diclofenac 50mg	7.29	7.29
Fluconazole 150mg		6.24
Fluoxetine 20mg	17.22	17.22
Folic acid 1mg		6.59
Hydrochlorothiazide 25mg	31.90	31.90
Metronidazole 500mg		22.44

Public sector availability

The mean availability of the surveyed medicines in the public sector pharmacies was 5.4% for originator brands (17 registered products), 39.6% for most sold generics (n=50) and 49.3% for lowest priced generics (n=50) – see Table 5. The mean availability was 51.2% for any product type[vi].

Table 5. Availability in public sector pharmacies

	Originator brand	Most sold generic	Lowest priced generic
Mean availability	14.6%	39.6%	49.2%
Standard deviation	19.1%	24.8%	26.2%

Tables 6 and 7 list the availability of originator brands (registered) and generics in public sector pharmacies. Unsurprisingly the availability of originator brands is low, but generic versions of many medicines were also poorly available in this sector. Only 10 medicines (generics) had an availability over 80%.

Table 6. Availability of originator brands (registered), public pharmacies

Availability	Medicine
0 %	Carbamazepine SL, metronidazole, sulphasalasine, valproic acid, verapamil
1-20%	Acetylsalicylic acid, amlodipine, clarithromycin SR, diclofenac, fluconazole, loratadine
21 -40%	Clonazepam, clozapine, paracetamol
41 – 60%	Salbutamol inhaler
61-80%	Amiodarone
81-100%	-

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Table 7. Availability of generics, public pharmacies

Availability	Medicine
0 %	Clonazepam, clozapine, phenoxymethylpenicillin
1-20%	Fluoxetine, isosorbide dinitrate, valproic acid
21-40%	Acetylsalicyclic acid, amitriptyline, cephalexin, chlorpromazine, diclofenac, hydrochlorothiazide, imipramine, risperidone, tramadol, trifluoperazine, verapamil
41- 60%	Amiodarone, carbamazepine SL, clarithromycin SR, diazepam, famotidine, fluconazole, glibenclamide, loratadine, levodopa+carbidopa, methotrexate, metronidazole, prednisolone, propranolol, ranitidine, simvastatin, sulfasalazine, trihexyphenidyl
61-80%	Amoxicillin, atenolol, captopril, ciprofloxacin, co-trimoxazole, paracetamol
81-99%	Amlodipine, amoxicillin susp, digoxin, enalapril 5mg&10mg, folic acid, furosemide, lisinopril, omeprazole, salbutamol inhaler
100%	-

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Public sector patient prices

Across the 50 public sector pharmacies surveyed, prices were 7.64, 6.72 and 5.22 times the international reference price for originator brand medicines, most sold generics and lowest priced generics respectively (Table 8).

Table 8. Number of times more expensive: patient prices in the public sector compared to international reference prices

	Originator brand	Most sold generic	Lowest priced generic
Median MPR *(interquartile range)*	7.64 *(2.76-18.74)*	*6.72 (3.23-9.36)*	*5.22 (2.90-7.28)*
Minimum	0.45	0.64	0.64
Maximum	111.76	82.33	43.07
No. of medicines	8	42	45

The median price of the 8 originator brands found in the public sector were 7.64 times the international reference price with some medicines ranging from much lower than the international reference price (0.45 times - or 55% less - for clonazepam 2mg tab) to much higher at 117 times the international reference price for diclofenac 50mg tab.

Most sold generic equivalents were 6.72 times the international reference price, with some medicines ranging from much lower than the international reference price (0.64 times - or 36% less - for carbamazepine SL 200mg tab) to much higher (e.g. fluconazole 150mg caps were 82 times the international reference price).

Lowest priced generic equivalents were 5.22 times the international reference price with some medicines ranging from much lower than the international reference price (e.g. carbamazepine SL 200mg tab) to much higher (e.g. 43 times the international reference price for acetylsalicylic acid 100mg tab).

Table 9 lists those medicines with the highest multiples of international reference prices where there could be opportunities for buying and selling at lower prices.

Table 9. Number of times more expensive: patient prices in the public sector compared to international reference prices

	Originator brand	Most sold generic	Lowest priced generic
Acetylsalicyclic acid 100mg	32.48	43.07	43.07
Ciprofloxacin 500mg		20.33	6.03
Diclofenac 50mg	117.26	8.86	9.00
Fluconazole 150mg		82.33	33.33
Fluoxetine 20mg		23.12	23.12
Folic acid 1mg		14.83	10.99
Hydrochlorothiazide 25mg		33.52	31.24
Metronidazole 500mg			24.16

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Price variation by medicine

Prices varied between pharmacies for only a few originator brands and most sold generic products (this can be seen by looking at the gap between the 25th and 75th percentiles representing 50% of the findings; the wider the gap the wider the variation in price). The greatest variation was seen for some of the lowest priced generics (where it is likely the product differed across the pharmacies surveyed).

Table 10 lists some examples of medicines where price variation between pharmacies in the public sector was greatest.

Table 10. Price variation in the public sector for some lowest priced generics (LPG) and most sold generics (MSG) (patient prices compared to international reference prices)

Medicine and product type	Median	25th percentile	75th percentile
Ciprofloxacin 500mg - LPG	6.03	4.98	20.33
Famotidine 40mg - LPG	5.25	4.21	14.71
Omeprazole 20mg - LPG	3.23	1.02	3.30
Enalapril 10mg - LPG	6.27	3.67	8.73
Isosorbide dinitrate 10mg - LPG	0.89	0.88	2.09
Co-trimoxazole 480mg - LPG	6.12	4.31	12.41
Diazepam 5mg - MSG	16.62	8.30	16.66
Simvastatin 20mg – LPG	8.12	4.59	9.27

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Price variation by product type

Using matched medicines pairs (i.e. where the medicine was available as two product types) originator brands were on average 1.8-2.1 times the price of the generics. This represents the brand premium, how much extra on average a patient would have to pay when purchasing the originator brand. Most sold generics were, on average, 1.3 times (30%) higher priced than the lowest priced generics.

Table 11. Ratio matched pairs of product types, public sector

	Ratio
Originator brand: most sold generic (n=5 medicines)	1.8
Originator brand: lowest priced generic (n=6 medicines)	2.1
Most sold generic: lowest priced generic (n=42 medicines)	1.3

Private sector availability

The mean availability of the surveyed medicines in private pharmacies was 22.8% for originator brands (17 registered products), 45.7% for most sold generics and 55.9% for lowest priced generics. The mean availability was 58% for any product type[vii].

Table 12. Availability in private pharmacies

	Originator brand	Most sold generic	Lowest priced generic
Mean availability	22.8%	45.7%	55.9%
Standard deviation	21.9%	27.1%	30.3%

Tables 13 and 14 list the availability of originator brands and generics in the private pharmacies. Fourteen (14) medicines (generics) had greater than 80% availability. Omeprazole (generic) was the only medicine found in all private pharmacies surveyed. While availability was slightly better in the private sector compared to the public sector, overall availability was sub-optimal in both sectors.

Table 13. Availability of originator brands, private pharmacies

Availability	Medicine
0 %	Co-trimoxazole, metronidazole, sulfasalazine, valproic acid
1-20%	Amlodipine, carbamazepine SL, clarithromycin SR, clozapine, fluconazole, verapamil
21 -40%	Acetylsalicyclic acid, clonazepam
41 – 60%	Diclofenac, loratadine, paracetamol, salbutamol inhaler
61-80%	Amiodarone

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Table 14. Availability of generics, private pharmacies

Availability	Medicine
0 %	Clonazepam, clozapine, isosorbide dinitrate
1-20%	Fluoxetine, phenoxymethylpenicillin, risperidone, trifluoperazine, valproic acid
21 -40%	Acetylsalicyclic acid, chlorpromazine, levodopa+carbidopa, methotrexate, metronidazole, tramadol
41 – 60%	Amiodarone, amitriptyline, atenolol, carbamazepine SL, cephalexin, clarithromycin SR diazepam, hydrochlorothiazide, imipramine, prednisolone, propranolol, simvastatin, sulfasalazine, trihexyphenidyl, verapamil
61-80%	Amlodipine, amoxicillin, , diclofenac, digoxin, fluconazole, loratadine, salbutamol inhaler
81-99%	Amoxicillin susp, captopril, ciprofloxacin, co-trimoxazole, enalapril 5mg&10mg, famotidine, folic acid, furosemide, glibenclamide, lisinopril, paracetamol, ranitidine
100%	Omeprazole

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Mean availability of medicines across private chain pharmacies was higher than in independent pharmacies for all three product types. As well, availability of medicines in private pharmacies owned by pharmacists was less than in pharmacies owned by non-pharmacists

Private sector patient prices

Across the 50 private pharmacies surveyed, prices were 8.70, 6.78 and 4.65 times the international reference price for originator brand medicines, most sold generics and lowest priced generics respectively (Table 15).

Table 15. Number of times more expensive: patient prices in the private sector compared to international reference prices

	Originator brand	Most sold generic	Lowest priced generic
Median MPR *(interquartile range)*	8.70 *(3.44-29.02)*	6.78 *(3.30-9.76)*	4.65 *(3.03-7.12)*
Minimum	0.46	0.67	0.64
Maximum	125.58	84.00	44.30
No. of medicines	10	42	43

The median price of the 10 originator brands found in the private sector was 8.70 times the international reference price with some medicines ranging from much lower than the international reference price (0.46 times - or 54% less - for clonazepam 2mg tab) to much higher at 125 times the international reference price for diclofenac 50mg tab.

Most sold generic equivalents were 6.78 times the international reference price, with some medicines ranging from much lower than the international reference price (0.67 times - or 33% less - for carbamazepine SL 200mg tab) to much higher (e.g. fluconazole 150mg caps were 84 times the international reference price).

Lowest priced generic equivalents were 4.65 times the international reference price with some medicines ranging from much lower than the international reference price (e.g. carbamazepine SL 200mg tab) to much higher (e.g. 44 times the international reference price for acetylsalicyclic acid 100mg tab).

Table 16 lists those medicines with the highest multiples of international reference prices where there could be opportunities for buying and selling at lower prices.

Table 16. Number of times more expensive: patient prices in the private sector compared to international reference prices

	Originator brand	Most sold generic	Lowest priced generic
Acetylsalicyclic acid 100mg	33.75	44.75	44.30
Folic acid 1mg		15.23	14.53
Ciprofloxacin 500mg		21.32	6.23
Diazepam 5mg		12.81	5.28
Diclofenac 50mg	125.58	9.52	9.55
Fluconazole 150mg	107.67	84.00	35.83
Hydrochlorothiazide 25mg		37.06	37.22
Metronidazole 500mg		20.37	24.66

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Overall patient prices were similar in chain pharmacies and independent pharmacies for all product types. Prices of generics showed little variation depending on whether the pharmacies were owned by pharmacists or non-pharmacists, but originator brands were higher priced in pharmacies owned by pharmacists.

Price variation by medicine

In the private sector price variation between the 25th and 75th percentiles for individual medicines was generally less than in the public sector. As shown in Table 17, the greatest variation was seen for captopril 25mg LPG where the 25th and 75th percentiles ranged from MPR 0.74 to 4.65.

Table 17. Price variation in the private sector for some lowest priced and most sold generics (patient prices compared to international reference prices)

Medicine and product type	Median	25th percentile	75th percentile
Amlodipine 5mg - LPG	6.80	3.70	7.25
Captopril 25mg - LPG	2.96	0.74	4.65
Ciprofloxacin 500mg -LPG	6.23	4.85	13.30
Co-trimoxazole 480mg - LPG	4.72	4.49	13.43
Diazepam 5mg - MSG	12.81	8.82	17.56
Enalapril 10mg - LPG	6.86	3.85	8.98

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Price variation by product type

Using matched medicines pairs, originator brands were on average 1.8 times (80%) the price of generics (Table 18). Most sold generics were on average 1.4 times (40%) higher priced than lowest priced generics.

Table 18. Ratio matched pairs of product types, private sector

	Ratio
Originator brand: most sold generic (n=7 medicines)	1.8
Originator brand: lowest priced generic (n=8 medicines)	1.8
Most sold generic: lowest priced generic (n=42 medicines)	1.4

Cross sector comparison of availability

As shown in Tables 5 and 12, the overall availability of the surveyed medicines was sub-optimal in both the public or private sectors. The following medicines, all on the national essential medicines, had low availability (≤30%) across both sectors (any product type): valproic acid, chlorpromazine, clonazepam, clozapine, fluoxetine, isosorbide dinitrate, phenoxymethylpenicillin, and risperidone.

Price variation across sectors

Procurement and patient prices in the public sector

For lowest priced generics, patients in the public sector were paying 211.7% more than government centralized procurement prices (Table 19). For most sold generics, the difference was 86.9%. There was little difference in originator brand prices but the analysis only included two medicines.

Table 19. Percentage difference public sector patient prices to public sector procurement prices for matched pairs of medicines

	Difference
Originator brands (n=2 medicines)	2%
Most sold generics (n=17 medicines)	86.9%
Lowest priced generics (n=44 medicines)	211.7%

Patient prices in the public and private sectors

The patient price of originator brands in the private sector was on average 6.3% higher than in the public sector. While there was no difference in the prices of most sold generics, lowest priced generics in the private sector were 10.8% lower priced than in the public sector (Table 20). For a few medicines the difference in price between sectors was large e.g. the MSG and LPG versions of prednisolone 5mg tab and the MSG version of diazepam 5mg tab were 56% and 30% higher priced in the public sector compared to the private sector respectively. Conversely, the LPG version of diazepam was lower priced in the public sector.

Table 20. Percentage difference private sector patient prices to public sector patient prices for matched pairs of medicines

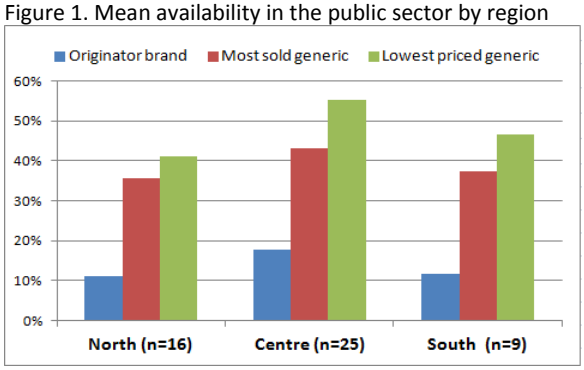
	Difference
Originator brands (n=8 medicines)	6.3%
Most sold generics (n=41 medicines)	-0.2%
Lowest priced generics (n=43 medicines)	-10.8%

Cross region comparison of availability

Public sector

The mean availability of the surveyed medicines in the public sector was lowest in the North region and highest in the Centre region for all three product types (Figure 1). However, in all three regions the overall availability in the public sector was sub-optimal.

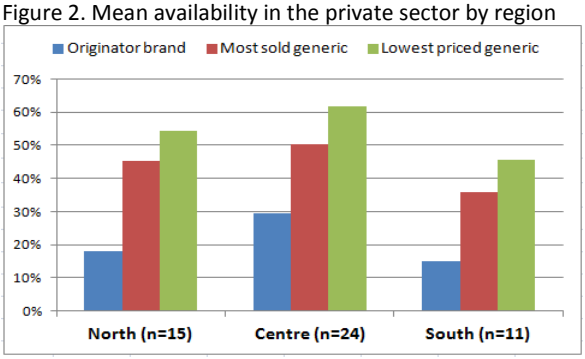
Figure 1. Mean availability in the public sector by region



Private sector

In private pharmacies, the mean availability of the surveyed medicines was lowest in the South region and, as with the public sector, highest in the Centre region for all three product types (Figure 2). But the availability was poor in all regions.

Figure 2. Mean availability in the private sector by region

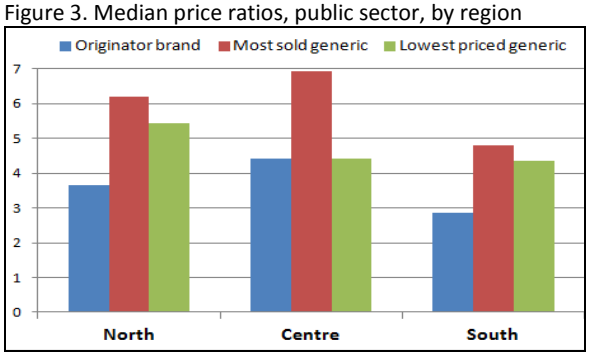


Cross region comparison of patient prices

Public sector

As shown in Figure 3, overall lowest priced generics were highest priced in the North region and most sold generics were highest priced in the Centre region.

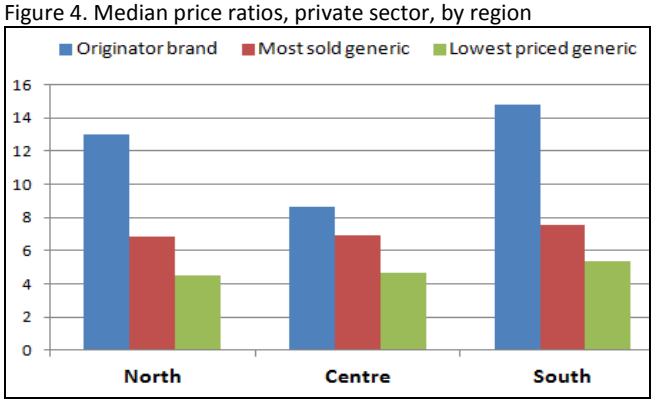
Figure 3. Median price ratios, public sector, by region



Private sector

Overall, private sector patient prices were highest for originator brands in the South region but the data is based on few products (Figure 4). Prices for generics were similar across the 3 regions.

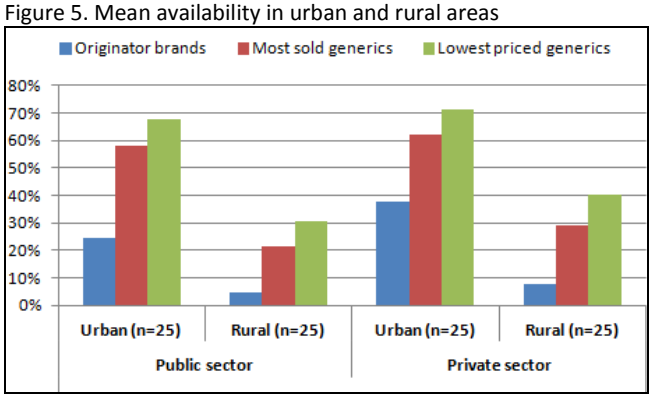
Figure 4. Median price ratios, private sector, by region



Availability in urban and rural areas

In both the public and private sectors, mean availability was highest in urban areas compared to rural areas for all three product types (Figure 5).

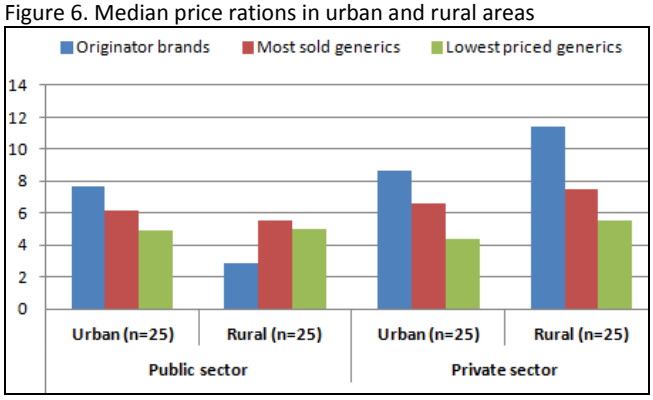
Figure 5. Mean availability in urban and rural areas



Patient prices in urban and rural areas

In the public sector, overall patient prices for originator brands were much higher priced in urban areas that in rural areas, however, there were few medicines in the dataset. For generics, there was little price variation between urban and rural areas (Figure 6). In the private sector, prices in rural areas were higher than in urban areas for all three product types.

Figure 6. Median price rations in urban and rural areas



Medicine price components

The final price paid for a medicine, whether by the government or a patient, reflects the manufacturer's selling price (MSP) plus all the intervening price additions in the supply chain.

In this study price component data was collected for 6 medicines in urban and rural areas in the public and private sectors (originator brands and generics). Starting at the point of sale in a pharmacy, price data was traced back through wholesalers/distributors etc. (through invoices and interviews) to determine the components of the final patient price.

Taxes on medicines

8% VAT is applied to all medicines

Cumulative mark-ups

In the public sector, cumulative mark-ups were higher in urban areas (approx. 47-52%) compared to rural areas (approx 40-41%) as shown in Table 21. In the private sector, cumulative mark-ups were approx. 47-52% in urban areas and 44-52% in rural areas. There was little difference in cumulative mark-ups between imported and locally manufactured products.

Table 21. Cumulative mark-ups, public and private sectors

Urban /rural	Product type	Imported/ locally manufact.	Cumulative mark-ups	
			Public	Private
Urban	OB	Imported	47.18-49.39%	47.65-51.68%
	Gen	Imported	49.36-51.78%	47.12-49.59%
	Gen	Local	48.59%	50.55%
Rural	OB	Imported	40.87 – 40.92%	51.47-51.75%
	Gen	Imported	40.59-41.53%	44.19-51.78%
	Gen	Local	40.08%	50.55%

Wholesaler and pharmacy mark-ups

As shown in Table 22, there was little difference in the wholesaler mark-up between sectors, product types, locations and for imported or locally manufactured medicines (14.5-14.97%).

Pharmacy mark-ups were greater than wholesaler mark-ups, except in the public sector in rural areas (Table 23). In the public sector, pharmacy mark-ups were higher in urban areas (approx. 20-25%) compared to rural areas (14-15%). In the private sector, mark-ups in urban regions (approx. 20-25%) were similar to rural areas (approx. 18-25%). Pharmacy mark-ups in rural public sector facilities (14-15%) were less than rural private sector pharmacies (approx. 18-25%).

Pharmacy mark-ups varied only slightly between imported and locally manufactured medicines within each sector.

Table 22. Wholesaler mark-ups, public and private sectors

Urban /rural	Product type	Imported/ locally manufactured	Mark-ups	
			Public	Private
Urban	OB	Imported	14.97%	14.97%
	Generic	Imported	14.50-14.97%	14.97%
	Generic	Local	14.97%	14.97%
Rural	OB	Imported	14.97%	14.97%
	Generic	Imported	14.97%	14.87-14.97%
	Generic	Local	14.97%	14.97%

Table 23. Pharmacy mark-ups, public and private sectors

Urban /rural	Product type	Imported/ locally manufactured	Mark-ups	
			Public	Private
Urban	OB	Imported	20.16-22.79%	21.20-24.91%
	Generic	Imported	22.77-24.98%	20.71-22.95%
	Generic	Local	22.61%	24.43%
Rural	OB	Imported	14.67-15%	24.68-24.95%
	Generic	Imported	14.93-14.98%	18.08-25%
	Generic	Local	14.73%	24.13%

Contributions to the final patient price

Across the 6 medicines in the price component analysis, the manufacturers selling price was the greatest

contribution to the final patients price (for originator brands and generics, public and private sector, imported and locally manufactured).

Figure 7 shows the contribution of each stage to the final patient price (45.8 lei) for generic imported salbutamol inhaler in the urban private sector. The manufacturers selling price is 68% of the final patient price. Very similar data was seen for the originator brand in the private sector and both product types in the public sector.

Figure 8 shows the data for generic imported salbutamol inhaler in the rural private sector. In this case the wholesale and retail (pharmacy) mark-ups contribute slightly more to the patient price (45.58 lei) but the manufacturers selling price is the largest contributor at 66%.

Figure 7. Price components salbutamol inhaler, generic, imported, urban private sector

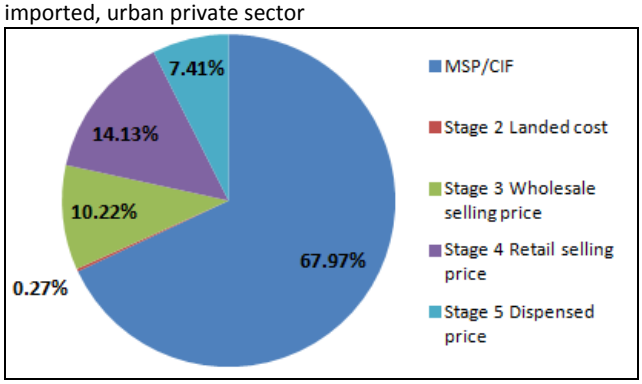
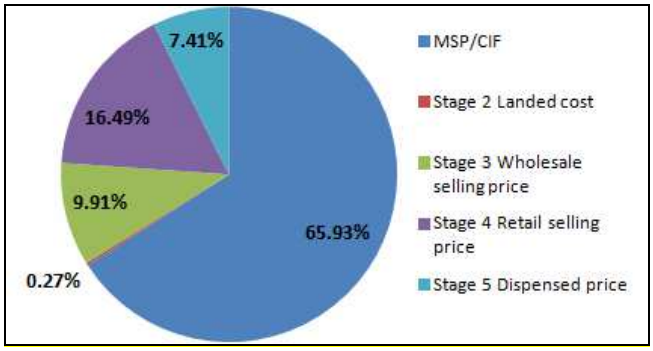


Figure 8. Price components salbutamol inhaler, generic,imported rural private sector



International price comparisons

Patient prices of 23 medicines in the private sector of Moldova where compared with patient prices in six European countries; Bulgaria, Hungary, Germany, Italy, Lithuania and Romania. There were too few originator brand prices to draw conclusions, however, overall patients prices of lowest priced generics in the private sector in Moldova were lower priced than in Bulgaria (11% lower), Germany (87% lower) and Italy (64% lower), similar to Lithuania and Hungary, but higher priced than in Romania (13%).

Overall ex-factory prices in Moldova were 14% higher than in the other European countries.

Recommendations of the investigators:

- To improve affordability, expand the outpatients medicines benefit package of the national health insurance scheme to include all medicines on the national Essential Medicines List and have a safety-net for the poor.
- Ensure all medicines on the market are good quality, publish the results of quality testing, and promote the use of low priced quality-assured generics.
- Review the method used to establish the manufacturers' registration price.
- Permit generic substitution and provide incentives for the dispensing of low priced quality-assured generics.
- Apply regressive mark-ups at the wholesale and retail levels.
- Identify the causes of low medicine availability.
- Exempt VAT on essential medicines and consider recouping lost revenue by increasing taxes on unhealthy goods such as alcohol, cigarettes and sugary drinks.
- Medicine pricing and procurement activities should be undertaken by separate units (rather than the current system where both are undertaken by the Medicines Agency).
- Establish systems to regularly monitor medicine prices and availability.
- Encourage the establishment of a publicly-accessible medicine price information exchange in Europe.

Further information

Contact Dr. Zinaida Bezverhni, Department of Social Pharmacy, State Medical and Pharmaceutical University, Chisinau, Republic of Moldova. Phone: +373 68623590, +373 22 727866, E-mail: zinaida03@yahoo.com

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

World Health Organization
REGIONAL OFFICE FOR Europe

hai GLOBAL

[i] WHO/HAI Measuring medicine prices, availability, affordability and price components, 2008; http://haiweb.org/medicineprices/

[ii] Reflecting the global burden of disease, WHO/HAI Measuring medicine prices, availability, affordability and price components, 2008

[iii] http://erc.msh.org

[iv] 1 USD = 11.8012 lei

[v] One antihypertensive (atenolol, amlodpine enalapril or lisinopril) one anti-diabetic (glibenclamide) and one antihypercloesterolaemia (simvastatin)

[vi] Not counting availability twice when both originator and generic equivalents were found in the same pharmacy

[vii] Not counting availability twice when both originator and generic equivalents were found in the same pharmacy