World Health Organization
REGIONAL OFFICE FOR Europe

Republic of Moldova
Health Policy Paper Series No. 11

MEDICINE PRICES, AVAILABILITY, AFFORDABILITY AND PRICE COMPONENTS IN THE REPUBLIC OF MOLDOVA (2011)

Ministry of Health of the Republic of Moldova
Health Action International Global
Medicines and Medical Devices Agency
SUMF "Nicolae Testemitanu"

World Health Organization
REGIONAL OFFICE FOR Europe

MEDICINE PRICES, AVAILABILITY, AFFORDABILITY AND PRICE COMPONENTS IN THE REPUBLIC OF MOLDOVA (2011)

Keywords

DRUG COSTS
DRUG INDUSTRY – STANDARDS
ECONOMICS, PHARMACEUTICAL
PHARMACEUTICALS AND BIOLOGICALS
QUALITY CONTROL
REPUBLIC OF MOLDOVA

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
UN City, Marmorvej 51
DK-2100 Copenhagen Ø Denmark
Tel.: +45 45 33 70 00; Fax: +45 45 33 70 01

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office web site (http://www.euro.who.int/pubrequest).

Contents

Abbreviations VII
Acknowledgements VIII
Executive summary IX
1. Introduction 2
1.1 Pharmaceutical sector in the Republic of Moldova 2
1.2 Survey objectives 5
2. Methodology 6
2.1 Survey medicines 6
2.2 Product types 6
2.3 Sampling 8
2.3.1 Sectors 8
2.3.2 Survey areas 8
2.3.3 Medicine outlets sampled 9
2.4 Training of data collectors 10
2.5 Data collection 11
2.6 Data entry 11
2.7 Data analysis 12
2.7.1 Availability 12
2.7.2 Prices 12
2.7.3 Affordability 13

3. Findings 14
3.1 Medicine availability 14
3.1.1 Medicine availability by sector 14
3.1.2 Availability of individual medicines in the public sector 14
3.1.3 Availability of individual medicines in the private sector 16
3.1.4 Medicine availability by region 18
3.1.5 Medicine availability in urban and rural areas 18
3.1.6 Medicine availability in chain and independent pharmacies 19
3.1.7 Medicine availability in pharmacies owned by pharmacists and non-pharmacists 20
3.2 Medicine prices 21
3.2.1 Public sector procurement prices 21
3.2.2 Patient prices in the public sector 22
3.2.3 Patient prices in the private sector 24
3.2.4 Patient prices by region, public and private sectors 28
3.2.5 Patient prices in urban and rural areas, public and private sectors 29
3.2.6 Price variations across sectors 30
3.3 Affordability 31
3.4 Medicine price components 34
3.4.1 Cumulative mark-ups 34
3.4.2 Wholesalers and retailers mark-ups 35
3.4.3 Percentage contribution to the final patient price 36

3.5 Dynamics of medicine prices in the Republic of Moldova 38
3.6 International price comparisons 40
3.6.1 Patient prices 40
3.6.2 Manufacturer ex-factory prices 43
4. Conclusions 45
4.1 Medicine availability 45
4.2 Centralized government procurement prices 45
4.3 Patient prices 45
4.4 Affordability 46
4.5 Price components 46
4.6 International price comparisons 47
5. Recommendations 48
6. References 49
7. Annexes 50
Annex I List of medicines included in the survey 50
Annex II Letter of endorsement 51
Annex III Availability of medicines in the public and private sectors 52
Annex IV Prices (as MPRs) in the public and private sectors 53
Annex V Patient prices in chain and independent pharmacies in the private sector 54
Annex VI Patient prices in private pharmacies owned by pharmacists and non-pharmacists 55
Annex VII Patient prices across regions, public and private sector 56
Annex VIII Patient prices in urban and rural areas, public and private sectors 57
Annex IX Medicine price components 58
Annex X Private sector patient prices in the Republic of Moldova and selected European countries 64
Annex XI Manufacturers' ex-factory prices in the Republic of Moldova and selected European countries 66

ABBREVIATIONS

CIF	cost, insurance, freight
EML	essential medicines list
FDC	family doctor centre
GDP	gross domestic product
HAI	Health Action International
IRP	international reference price
LPG	lowest priced generic (equivalent)
MDL	Moldovan lei (currency)
MPR	median price ratio
MSH	Management Sciences for Health
MSG	most-sold generic (equivalent)
MSP	manufacturer selling price
OB	originator brand
SMFU	State Medical and Pharmaceutical University (Nicolae Testemitanu)
TB	tuberculosis
MSH	Management Sciences for Health
ÖBIG	Austrian Public Health Institute Gesundheit Österreich GmbH
VAT	value-added tax

ACKNOWLEDGMENTS

The following people were members of the Working Group for this study:

- Vladimir SAFTA (Working Group leader), Habilitated Doctor of Pharmacy, Social Pharmacy Chair "Vasile Procopisin", SMFU Nicolae Testemitanu
- Zinaida BEZVERHNI (survey administrator), Doctor of Pharmacy, Social Pharmacy Chair "Vasile Procopisin", SMFU Nicolae Testemitanu
- Rita SEICAS (expert), Prime Deputy Director of Medicines Agency
- Mihail BRUMAREL (expert), Doctor in Pharmacy, Head of Social Pharmacy Chair "Vasile Procopisin", SMFU Nicolae Testemitanu
- Mihail LUPU (expert), Doctor in Pharmacy, Deputy Director of Medicines Agency
- Stela ADAUJI (expert), Doctor in Pharmacy, Head of Social Pharmacy "Vasile Procopisin", SMFU Nicolae Testemitanu

The following people were members of the Steering Committee for this study, as approved by Order (146-d) of the Minister of Health of the Republic of Moldova (Mr Andrei Usatii) (8 April 2011):

- Viorel SOLTAN, Deputy Minister of Health
- Mihail LUPU, Deputy Director, Medicines Agency
- Maria COJOCARU-TOMA, Head of Department, Medicines Agency
- Vladimir SAFTA, Professor, SMFU Nicolae Testemitanu
- Lucia ȚURCANU, Head of Department, Medicines Agency
- Rita SEICAȘ, Prime Deputy Director, Medicines Agency
- Veaceslav STRATU, President, Association of Pharmacists in the Republic of Moldova

The Working Group members are grateful for the work of the data collectors and the cooperation of the pharmacists, who provided the data. In addition, they wish to thank the following people for the support provided in undertaking this study:

- Nina SAUTENKOVA, Programme Manager, Heath Technologies and Pharmaceuticals, WHO Regional Office for Europe
- Margaret EWEN, Coordinator, Global Project (Pricing), Health Action International Global & Coordinator, WHO/HAI Project on Medicine Prices and Availability.

This report was produced through the Biennial Collaborative Agreements (BCAs), covering 2010–2013, between the Ministry of Health of the Republic of Moldova and the World Health Organization. The publication forms part of the Health Policy Papers series launched in 2011 with the aim of strengthening the health system in the Republic of Moldova in line with the national health policy and strategy for the development of the health-care system. It has been prepared under the guidance of Mr Andrei Usatii, Minister of Health of the Republic of Moldova and Jarno Habicht, representative of the WHO.

This document has been produced with the financial assistance of the EU within the technical assistance programme coordinated by WHO. The objectives of the programme include strengthening the stewardship of health sector investments, better monitoring of performance, and ensuring greater use of evidence in policy decisions. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

EXECUTIVE SUMMARY

In September–October 2011 a national survey of medicine prices, availability, affordability and price components was undertaken by Dr Zinaida Bezverhni and Professor Vladimir Safta (Department of Social Pharmacy, State Medical and Pharmaceutical University (Nicolae Testemitanu), Chisinau), with support from the Medicines Agency and WHO Regional Office for Europe, using WHO/Health Action International methodology.

Methodology

Patient prices were collected from a total of 50 public sector facilities and 50 private pharmacies across the North, Central and South regions of the country. Public sector procurement (tender) prices were obtained from the Medicines Agency. Data were collected for 50 essential medicines (with specific strength and dosage forms, and particular pack sizes). For each medicine, data were collected on the originator brand, the generic equivalent with the most sales (product identified centrally) and the lowest priced generic in the pharmacy. Full patient prices were recorded. Affordability was assessed by means of the number of days' wages needed by those on the minimum wage in order to purchase standard treatments for acute and chronic diseases. Price components in the pharmaceutical supply chain (mark-ups, taxes, and so on) were measured for a selection of imported and locally produced medicines. Prices in the Republic of Moldova were compared with those in six European countries.

Findings

Across the 50 survey medicines, availability was low in both the public (51%) and private (58%) sectors. Across both sectors, availability was lower in rural areas than urban areas, and was greatest in the central region. In the private sector, availability was lower in independent pharmacies and those owned by pharmacists, compared to chain pharmacies and those owned by non-pharmacists.

About half of the medicines procured by the Government's centralized process were more than twice the international reference price. Some medicines were procured at very high prices, despite the availability of competitively priced products on the international market.

Overall, patient prices in the public and private sectors were high, even for the lowest priced generics, which were about five times the international reference prices. Many medicines were procured at very high prices. Patients were paying 30–40% more for the generics sold the most than lowest priced generics (in both sectors). Prices in the private sector were 11% lower than in the public sector for the lowest priced generics, but about the same for the products with the highest sales. Patients in the public sector were paying about 200% more than the government-centralized procurement prices (generics). In the public sector, prices were highest in the central region for the most-sold generics and in the North region for the lowest priced generics. In the private sector, prices were highest in the southern region (generics) and in rural areas. Generics prices were similar in chain and independent pharmacies. Prices were similar in pharmacist-owned pharmacies and those owned by non-pharmacists.

The majority of medicines – especially those used to treat chronic diseases – were not affordable for people on minimum wages. At least half their monthly income was needed to purchase a month's treatment for conditions such as Parkinson's disease, various psychoses, schizophrenia, and ulcerative colitis. About a week's wages was needed to purchase treatment for hypercholesterolaemia, and many antihypertensives were unaffordable.

Cumulative mark-ups in the public sector were higher in urban areas (about 49%) compared to rural areas (41%). Mark-ups in the private sector were a little higher than in the public sector, with small variations between rural and urban areas. Wholesaler mark-ups were slightly less than 15% in both sectors. In the public sector, pharmacy mark-ups were higher in urban areas (approximately 20–25%) compared to rural areas (14–15%); they were similar in the private sector. The largest contribution (60–70%) to the final patient price was the manufacturers' selling prices/cost, insurance, freight. A total of 8% value-added tax is applied to all medicines.

Patient prices for the lowest priced generics in the private sector in the Republic of Moldova were lower than in Bulgaria (11% lower), Germany (87% lower) and Italy (64% lower); they were similar to Lithuania and Hungary, but higher than in Romania (13%). Overall ex-factory prices in the Republic of Moldova were 14% higher than in these European countries.

Recommendations

- Expand the national health insurance scheme's outpatients medicines benefit package to include all medicines on the national essential medicines list.
- Promote the use of low-priced quality-assured generics.
- Apply regressive mark-ups at the wholesale and retail levels.
- Identify the causes of low medicine availability.
- Exempt essential medicines from value-added tax and consider recovering lost revenue by increasing taxes on unhealthy goods, such as alcohol, cigarettes and sugary drinks.
- Review the method used to establish the manufacturers' registration price.
- Ensure medicine pricing and procurement activities are undertaken by separate units (rather than the current system, whereby both are undertaken by the Medicines Agency).
- Establish systems to monitor regularly medicine prices and availability.

1. Introduction

According to WHO, one third of the world's population lacks access to the medicines they need. A key barrier to access is the cost of medicines. Rapidly rising costs of health care and high medicine prices are a growing concern worldwide, especially in countries in which patients are required to pay the full price of medicines. WHO estimates that total health expenditure was 12% of gross domestic product (GDP) in the Republic of Moldova in 2009 *(1)*. Government expenditure on health represents 13.0% of the total government budget. Private health expenditure is 49.5% of total health expenditure.

1.1 Pharmaceutical sector in the Republic of Moldova

A national medicines policy exists in the Republic of Moldova, which covers medicine financing, pricing and procurement. Pharmaceutical policy implementation is assessed by the Medicines Agency within the Ministry of Health. The Medicines Agency undertakes procurement and pricing activities, as well as being involved in regulatory activities. The country's essential medicines list (EML) was last updated in 2011 *(2)*.

1.1.1 Centralized government procurement system

In 2006 the procurement of medicines for hospital inpatients was centralized and transferred to the Medicines Agency.[1] A summary of the general characteristics of the centralized procurement procedure is shown in Table 1.1. In recent years about 1500 medicines have been procured annually, at a total cost of about 375 million lei (MDL).

Table 1.1. Centralized procurement of medicines in the Republic of Moldova, 2006–2011

	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
Organized tenders	46	41	46	37	57
Budget (million MDL)	316.396	328.399	391.946	375.611	–
Average no. of participants (bidders)	18	17	18	17	20
Medicines	1288	1216	1331	1551	1485

Source: Data from the Statistical Yearbook 2012 *(3)*.

1 Regulation of the Medicines Agency, approved via Republic of Moldova Government Decision No. 1252, 1 December 2005.

The Pharmaceutical Committee of the Ministry of Health decides what medicines will be procured. The list is not restricted to medicines on the EML. Open tenders are conducted annually with registered distributers. Tenders are awarded to the bidder offering the lowest price. Each hospital receives supplies from the company that is awarded the tender (that is, there is no central medicines store).

1.1.2 Medicine supply

Medicines for hospital inpatients are procured through the Ministry of Health's centralized procurement system and provided free of charge to certain groups of inpatients (pensioners, children, registered disabled, and so on).
Medicines for outpatients are provided through:

- national programmes to supply insulin, analgesics for palliative care, medicines to treat HIV/AIDs, tuberculosis (TB) and other conditions;[2]
- family doctor centres (FDCs) (government owned)
    - reimbursed medicines – the insurance company pays a fixed amount and the patient pays the balance, which is usually about half the total cost;
    - non-reimbursed medicines – the patient pays the total cost;
- private pharmacies
    - reimbursed medicines – the insurance company pays a fixed amount and the patient pays the balance, which is usually about half the total cost;
    - non-reimbursed medicines – the patient pays the total cost.

Mandatory social health insurance was introduced in 2004 and is implemented through the National Health Insurance Company. Insurance premiums are set at 7% of salary (3.5% paid by the individual, 3.5% by the employer). There are a number of exemptions from premiums, including pregnant women, children under five years old, and the elderly. Coverage by the insurance system is incomplete. Since the introduction of mandatory social health insurance, the balance of private–government expenditure is shifting, but private expenditure as a proportion of total health care spending is still high and much of this spending is a result of the cost of medicines, which are not generally included in the benefits package *(4)*.

About 95% of medicines on the market are imported. There are 25 licensed pharmaceutical manufacturers in the Republic of Moldova, which hold 17.8% and 17.3% of the market share by value and volume produced, respectively.

2 As with hospital inpatients, medicines are obtained through the Ministry of Health's central procurement system and provided free of charge to patients.

1.1.3 Price controls

A price reform process commenced in 2010 with the introduction of a registration price system whereby the manufacturers' price is set at the time of product registration. Prices are set using external reference pricing across 15 countries: Belarus, the Czech Republic, France, Germany, Greece, Hungary, Lithuania, Poland, Romania, the Russian Federation, Slovakia, Slovenia, Switzerland, Turkey, the United Kingdom and Ukraine. Prices are collated annually from web sites that publish wholesaler prices. The average of the lowest price across three countries is used. Prices of generically equivalent products already on the market in the Republic of Moldova are not considered. If the exchange rate increases or decreases by 5% or more, the registration price can change. It is planned to only use as a reference countries with populations of under 10 million people and similar levels of GDP to the Republic of Moldova (although this stipulation is not yet enforced). Companies cannot market a medicine at an invoice price above the registration price.

Mark-ups in the pharmaceutical supply chain are regulated at up to 15% for the wholesaler mark-up and up to 25% for the retail mark-up.

The pharmaceutical system in rural areas is underdeveloped compared to urban areas *(5)*, especially in terms of population coverage by pharmacies and pharmacy personnel. Over 870 community-based pharmacies and subsidiaries currently operate in the Republic of Moldova, of which 350 are chain pharmacies and 520 are independent pharmacies. Chain pharmacies include Felicia, Farmacia Familiei, Orient, Hippocrates, Gedeon Richter, Trei V-Farm, and Casa Farm. These chains usually have their own warehouses.

A number of factors have influenced the price of medicines in the Republic of Moldova, including:

- unjustified price increases for some medicines over recent years;
- low purchasing power of citizens;
- lack of a legalized operational system for monitoring the prices of medicines;
- cases of miscommunication to the public regarding the reality of responsibilities for setting medicine prices.

It became obvious that a better understanding was needed of the prices that people pay for medicines, the affordability of treatments and the availability of medicines within facilities.

1.2 Survey objectives

In September–October 2011, State Medical and Pharmaceutical University (SMFU) Nicolae Testemitanu conducted a nationwide study on medicine prices and availability, the affordability of standard treatments for common conditions, and price components in the pharmaceutical supply chain (mark-ups, and so on).

The aim of the survey was to assess the price and availability of selected medicines across the various sectors and regions of the Republic of Moldova, and to provide evidence-based recommendations on policies and interventions to improve the availability and affordability of medicines for the country's population.

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 pharmacies in different regions of the Republic of Moldova?
- What are the prices of originator brand products, most-sold generic equivalents and lowest priced generic equivalents in the public and private sectors in different regions of the Republic of Moldova?
- What is the difference in prices and availability between the public and private sectors, and in different regions of the Republic of Moldova?
- What are prices of medicines procured by the Government?
- How do prices in the Republic of Moldova compare with international reference prices?
- How affordable are medicines for the treatment of common conditions, for people earning the minimum wage?
- What taxes are levied on medicines and what is the level of the various mark-ups contributing to the retail price of medicines?
- How do prices of selected essential medicines in the Republic of Moldova compare to other European countries?

2. Methodology

The survey used a standardized methodology developed by WHO and Health Action International (HAI) *(5)*. This survey tool has been used in over 90 national and subnational surveys across the globe, with the findings available on a publicly accessible database.

2.1 Survey medicines

In accordance with the WHO/HAI methodology, 50 medicines used in the treatment of a range of acute and chronic conditions were selected for inclusion in the survey. They included:

- 10 medicines from the 14 on the WHO/HAI global core list of medicines – core list medicines are included to allow for international comparisons;
- 40 supplementary medicines of importance in the Republic of Moldova.

The following medicines on the WHO/HAI global core list were excluded from the survey, as none of these products were registered in the Republic of Moldova.

- Amoxicillin 500 mg cap/tab (this was replaced by amoxicillin 250 mg cap/tab)
- Ceftriazone 1 g injection
- Co-trimoxazole 40+200 mg/5 ml suspension
- Paracetamol 120 mg/5 ml suspension

Supplementary medicines were selected from the State Nomenclature of Medicines. It is worth noting that only those medicines with an international reference price (IRP) were selected (see section 2.7).

For each medicine, data were collected for a specific strength and dosage form, and for a recommended pack size. Where the recommended pack size was not found in a pharmacy, data were collected for the next largest pack size. It is worth noting that each medicine surveyed was a specific strength and dosage form. Other strengths and dosage forms may have been available but were not included in the survey. All survey medicines were included in the national EML. See Annex I for the list of medicines in the survey.

2.2 Product types

For each of the 50 survey medicines, data were collected for three product types.

1. **Originator brand (OB)** – this is the product which was marketed interna-

tionally, generally a patented product. Identification of the OB was carried out centrally prior to data collection, and the product name and manufacturer were entered on the data collection form).

2. **Most-sold generic (MSG) equivalent** – contains the same active substance(s) and identical dosage form and strength as the OB and generally marketed under a commercial or trade name. For each survey medicine, data from the Medicines Agency were used to identify the generic with the highest sales volume nationally (this was done prior to data collection, with the product name and manufacturer entered on the data collection form).
3. **Lowest priced generic (LPG) equivalent** – contains the same active substance(s) as the OB and MSG, and is usually marketed under a commercial name (but sometimes under the international nonproprietary name). The LPG product was identified at each pharmacy visited.

Annex I lists the OBs and MSG products surveyed.

In the public sector, full patient prices were recorded (although it is acknowledged that some medicines or patient groups received medicines that were either fully or partially subsidized).

Five survey medicines were selected in order to measure price components (see Table 2.1). For each medicine, data were collected for the OB and commonly used generics, and were a mix of imported and locally produced products.

Table 2.1. Medicines selected to measure price components

Medicine	Strength and dosage form	Therapeutic category
Diclofenac	50 mg tab	Analgesic/NSAIM
Fluconazole	150 mg tab	Antifungal
Loratadine	10 mg tab	Antiallergy
Paracetamol	500 mg tab	Analgesic/NSAIM
Salbutamol	100 mcg/dose inhaler	Asthma

Note. NSAIM: non-steroidal anti-inflammatory medication.
Source: compiled by the authors based on HAI recommendations *(5)*.

In addition to price and availability information, in each private pharmacy surveyed, information was collected regarding: (a) whether the pharmacy was owned by a pharmacist or non-pharmacist; and (b) whether it was a chain or independent pharmacy.

2.3 Sampling

2.3.1 Sectors

Patient prices and availability data were collected from the public sector – that is, state-owned FDCs and subsidiaries of these centres – as well as from from private community-based pharmacies. Government procurement prices for the 2010 tender were collected from the Medicines Agency.

2.3.2 Survey areas

The Republic of Moldova is divided into three regions (North, Central and South). Each region is characterized by its socioeconomic development, ethnography and folklore, locality infrastructure, and so on.

Data were collected from public and private sector medicine outlets in all three regions. Table 2.2 lists the 35 district centres and 2 municipalities from which data were collected. In rural areas data were collected from one village, selected at random.

Table 2.2. Regions, district centres and municipalities

3 regions		
North	Central	South
35 district centres		
Briceni, Donduseni, Drochia, Edinet, Falesti, Floresti, Glodeni, Ocnita, Rezina, Riscani, Singerei, Soldanești, Soroca, Telenesti	Anenii Noi, Calarasi, Criuleni, Dubasari, Hincești, Ialoveni, Nisporeni, Orhei, Straseni, Ungheni	Cahul, Ceadir-Lunga, Cantemir, Causeni, Cimislia, Comrat, Leova, Stefan Voda, Taraclia, Vulcanesti, Basarabeasca
2 municipalities		
Balti	Chisinau	

Source: compiled by the authors based on HAI recommendations *(5)*.

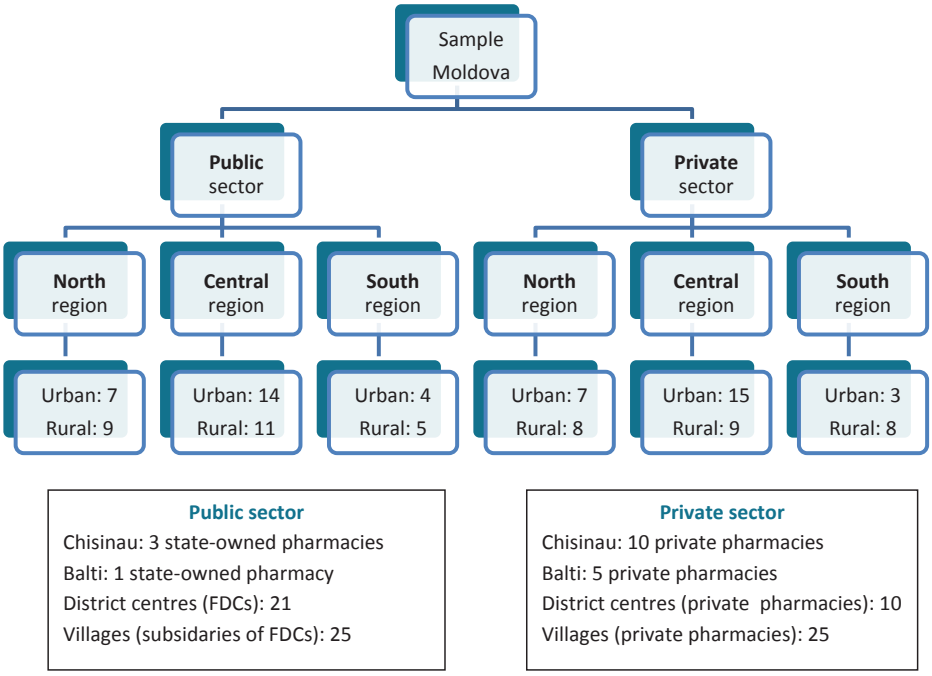
2.3.3 Medicine outlets sampled

Medicine price and availability data were collected from 50 public sector medicine outlets (pharmacies, FDCs, or subsidies of FDCs) and 50 private retail pharmacies across the three regions. Fig. 2.1 shows the distribution across the public and private sectors. Of the 100 medicine outlets in the sample, 50 were in urban areas (cities) and 50 were in rural areas (villages).

A mix of chain and independent pharmacies were included in the private sector sample. Two to three pharmacies in each of the five pharmacy chains were included. These five chains were located in a mix of regions (Chisinau, North and South).

Medicine price component data were collected in Chisinau, and in one rural and one urban area in the North and South regions (resulting in a total of three urban areas and two rural areas). Data on mark-ups and other charges in the supply chain were collected, working back in the supply chain from retailers, to wholesalers, to suppliers, and so on.

Fig. 2.1. Survey sample



Source: compiled by the authors based on HAI recommendations *(5)*.

2.4 Training of data collectors

A training workshop for survey personnel was held on 26–27 September 2011. Presentations were given on survey preparations, preparing for fieldwork, data collection and data entry. After each presentation, discussions focused on possible issues that might arise in the field and how these should be resolved.

As part of the training workshop, collecting data from a local pharmacy and completing the data collection form was piloted. These data were not included in the survey itself.

The following materials were prepared and distributed to participants.

- Official letter of endorsement addressed to the managers of data collection points (pharmacies) from the Ministry of Health, signed by the Deputy Minister (see Annex II).

- List of data collection points.
- Copies of presentations:
    - measuring medicine prices and availability (motivation, importance, goal, plan);
    - survey methodology;
    - data collection procedure;
    - how to fill in the medicine price data collection form;
    - data entry in the automated Excel workbook;
    - ensuring data quality.

2.5 Data collection

Medicine price and availability data were collected between 28 September 2011 and 7 October 2011 by pharmacy inspectors and other pharmacists working with the Medicines Agency, along with two pharmacy students. These data collectors visited the medicine outlets in pairs whenever possible, and collected data on medicine availability and prices using the standardized data collection form. Supervisors checked all forms at the end of each day of data collection, and validated the data collection process by collecting data at 20% of the medicine outlets and comparing their results with those of the data collectors. No inconsistencies were found. The survey administrator and leader checked the data collection forms prior to data entry.

Medicine price component data were collected in late October 2011 (once the medicine availability data had been collated and analyzed). Price component data were collected both in the public and private sectors and in urban and rural areas by the survey leaders.

2.6 Data entry

Data were entered by trained personnel into a pre-programmed Excel workbook, which was provided as part of the WHO/HAI methodology. Data entry was checked using the "double entry" and "data checker" functions of the Excel workbook. The data were also reviewed by the HAI technical adviser for possible erroneous entries, and potential outliers were verified and corrected as necessary.

2.7 Data analysis

2.7.1 Availability

The availability of individual medicines is calculated as the percentage (%) of pharmacies in which the medicine was found. Mean (average) availability is also reported for the overall "basket" of medicines surveyed. The availability data only refer to the day of data collection at each particular pharmacy and therefore may not reflect average monthly availability of medicines at each pharmacy.

2.7.2 Prices

Medicine prices are expressed as medians in local currency, and also as ratios relative to a standard set of IRPs:

$$\textit{Median price ratio (MPR)} = \frac{\textit{median local unit price}}{\textit{IRP}}$$

The ratio is thus an expression of how much greater or less the local medicine price is than the IRP, e.g. an MPR of 2 would mean that the medicine price in the Republic of Moldova is twice that of the IRP. Median price ratios for patient prices were only calculated for medicines with price data from at least four medicine outlets. The exchange rate used to calculate MPRs was US$ 1 = MDL 11.8012; this was the commercial "buy" rate on 26 August 2011 provided by the National Bank of Moldova.

The source of the IRPs was the 2010 Management Sciences for Health (MSH) *International drug price indicator guide (6)*. These reference prices are the medians of recent procurement prices offered by profit-making and non-profit-making suppliers of generic products. These suppliers typically sell in bulk to governments or large nongovernmental organizations and prices are therefore relatively low representing efficient bulk procurement without the costs of shipping or insurance. MSH 2010 prices were available for all survey medicines except clarithromycin SR tab.

Prices are presented for individual medicines, as well as for the overall "basket" of medicines surveyed. Median values have been used in the price analysis as a better representation than averages of the midpoint value. The magnitude of price and availability variations is presented as the interquartile range. A quartile is a percentile rank that divides a distribution into four equal parts. The range of values containing the central half of the observations – that is, the range between the 25th and 75th percentiles – is the interquartile range.

Sub-analyses of patient price and availability data included:

- regional variations
- urban versus rural areas
- chain versus independent pharmacies (private sector)
- pharmacies owned by pharmacists versus non-pharmacists (private sector).

Patient prices in the Republic of Moldova for 23 commonly used medicines to treat acute and chronic conditions were compared with prices in a selection of European countries. International price data were purchased from the Austrian Public Health Institute Gesundheit Österreich GmbH (ÖBIG) in Vienna (WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies). Registered ex-factory manufacturer prices in the National Catalogue Medicine Prices for Manufacturers *(7)* in the Republic of Moldova were compared with ex-factory prices in the selected European countries.

2.7.3 Affordability

The affordability of treating a selection of common acute and chronic conditions for adults and children was assessed by comparing the median cost of medicine treatment using standard regimens, to the minimum daily wage of MDL 20 (approximately US$ 1.70 per day). Thus, affordability is expressed as the number of days needed by a person that earns the minimum wage to purchase a course of treatment for an acute condition (7 days), or a month's supply of medicine to treat a chronic condition (30 days). Although it is difficult to assess affordability, treatments for an acute condition costing more than one days' wages, or a 30-day supply of medicines to treat chronic diseases are generally considered to be unaffordable.

3. FINDINGS

3.1 Medicine availability

3.1.1 Medicine availability by sector

As shown in Table 3.1, the mean availability of OBs was 5.3% and 8.3% in public and private sector pharmacies, respectively. For generics, the mean availability was higher, but still sub-optimal. For MSGs and LPGs, the mean availability was lower in the public sector than in the private sector.

The availability of any product type was slightly higher in the private sector (58.0%) than in the public sector (51.2%).

Table 3.1. Mean (%) availability of medicines in the public and private sectors

Product type	Mean (%) availability (standard deviation), public sector	Mean (%) availability (standard deviation), private sector
OBs	5.3 (13.3)	8.3 (17.0)
MSGs	39.6 (24.8)	45.7 (27.1)
LPGs	49.2 (26.2)	55.9 (30.3)
Any product type	51.2	58.0

Source: compiled by the authors based on HAI recommendations *(5)*.

3.1.2 Availability of individual medicines in the public sector

Table 3.2 lists the availability of OBs and generics in public sector pharmacies. Unsurprisingly, the availability of OBs is low, but generic versions of many medicines were also scarcely available in the public sector. No pharmacy had all 50 survey medicines in stock (as either OBs or generics) on the day of data collection.

Only 10 medicines (generics) had over 80% availability in this sector; amlodipine tabs, amoxicillin suspension, digoxin tabs, enalapril 5 mg and 10 mg tabs, folic acid tabs, furosemide tabs, lisinopril tabs, omeprazole tabs and salbutamol inhaler.

Generics of three medicines (clonazepan, clozapine and phenoxymethylpenicillin) were not found in any of the public sector medicine outlets involved in the survey, despite their inclusion on the national EML.

Annex III lists the availability of individual medicines in the public sector.

Table 3.2. Availability of OBs and generics in the public sector

Availability	OBs	Generics
0%	Amitriptyline, amoxicillin, amoxicillin suspension, atenolol, captopril, carbamazepine SL, cephalexin, chlorpromazine, ciprofloxacin, co-trimoxazole, diazepam, digoxin, enalapril 5 mg and 10 mg, famotidine, fluoxetine, furosemide, hydrochlorothiazide, imipramine, isosorbide dinitrate, levodopa + carbidopa, lisinopril, methotrexate, metronidazole, omeprazole, phenoxymethylpenicillin, propranolol, ranitidine, risperidone, simvastatin, sulphazaline, tramadol, trifluoperazine, valproic acid, verapamil	Clonazepam, clozapine, phenoxymethylpenicillin
1–20%	Acetylsalicylic acid, amlodipine, clarithromycin, diclofenac, fluconazole, glibenclamid, loratadine,	Fluoxetine, isosorbide dinitrate valproic acid
21–40%	Clonazepam, clozapine, paracetamol	Acetylsalicylic acid, amitriptyline, cephalexin, chlorpromazine, diclofenac, hydrochlorothiazide, imipramine, risperidone, tramadol, trifluoperazine, verapamil

41–60%	Salbutamol inhaler	Amiodarone, carbamazepine SL, clarithromycin, diazepam, famotidine, fluconazole, glibenclamide, loratadine, levodopa + carbidopa, methotrexate, metronidazole, prednisolone, propranolol, ranitidine, simvastatin, sulphazaline, trihexyphenidyl
61–80%	Amiodarone	Amoxicillin, atenolol, captopril, ciprofloxacin, co-trimoxazole, paracetamol
81–99%	-	Amlodipine, amoxicillin suspension, digoxin, enalapril 5 mg and 10 mg, folic acid, furosemide, lisinopril, omeprazole, salbutamol inhaler
100%	-	-

Note: Dosage form is tab/cap unless otherwise stated.
Source: compiled by the authors based on HAI recommendations *(5)*.

3.1.3 Availability of individual medicines in the private sector

Table 3.3 lists the availability of OBs and generics in the private pharmacies assessed. Availability was over 80% for 14 medicines (generics). Omeprazole (generic) was the only medicine found in all private pharmacies involved.

While availability was slightly better in the private sector compared to the public sector, overall availability was sub-optimal in both sectors. Annex III lists the availability of individual medicines in the private sector.

Table 3.3. Availability of OBs and generics in the private sector

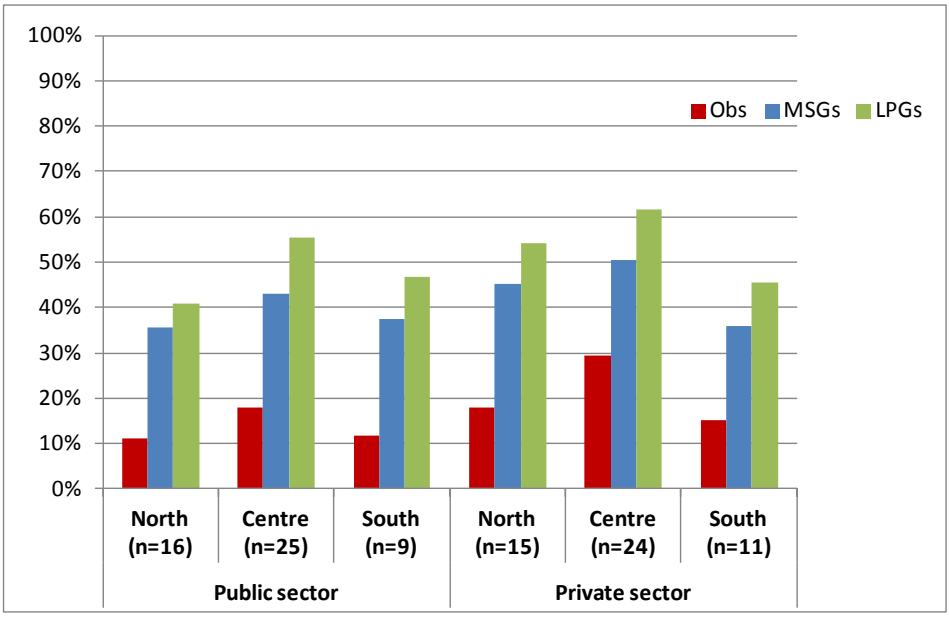
Availability	OBs	Generics
0%	Amitriptyline, amoxicillin, amoxicillin suspension, atenolol, captopril, cephalexin, chlorpromazine, ciprofloxacin, co-trimoxazole, diazepam, digoxin, enalapril 5 mg and 10 mg, famotidine, fluoxetine, furosemide, glibenclamide, hydrochlorothiazide, imipramine, isosorbide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

Source: compiled by the authors based on HAI recommendations *(5)*.

3.1.4 Medicine availability by region

Across the three regions surveyed, in the public sector mean availability was highest in the Central region for OBs (6.6%), MSGs (43.0%) and LPGs (55.3%), as shown in Fig. 3.1. The Central region had the highest medicine availability in the private sector as well; OBs 10.7%, MSGs 50.5% and LPGs 61.7%. However, across all regions, medicine availability was sub-optimal in both sectors.

Fig. 3.1. Mean (%) availability of medicines by geographical region in the public and private sectors



Source: compiled by the authors based on HAI recommendations *(5)*.

3.1.5 Medicine availability in urban and rural areas

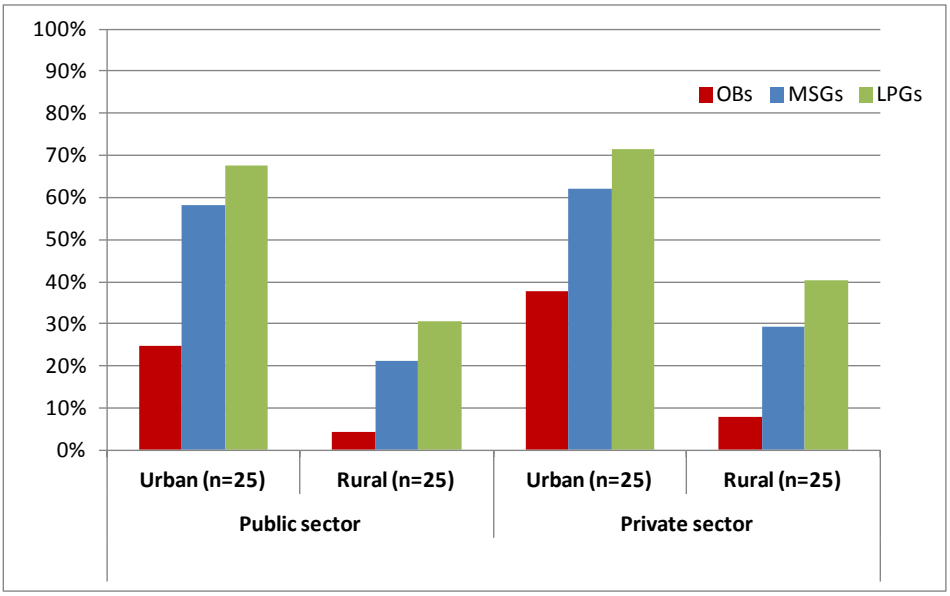
As shown in Fig. 3.2, in both the public and private sectors the mean availability of medicines in rural areas was less than in urban areas, for all product types.

In the public sector, the mean availability of OBs, MSGs and LPGs in urban areas was 9.0%, 58.1% and 67.7% respectively. In rural areas, mean availability was 1.6% for OBs, 21.2% for MSGs and 30.6% for LPGs.

In the private sector, the mean availability of OBs, MSGs and LPGs in urban areas was 13.7%, 62.2% and 71.5%, respectively. In rural areas, mean availability was 2.9% for OBs, 29.3% for MSGs and 40.3% for LPGs.

It is interesting to note that in both sectors, generic medicine availability in rural areas was low (40% or below). In both sectors, the nationally identified MSG products were not as readily available as other low-priced generics.

Fig. 3.2. Mean (%) availability of medicines in rural and urban areas by sector



Source: compiled by the authors based on HAI recommendations *(5)*.

3.1.6 Medicine availability in chain and independent pharmacies

As shown in Table 3.4, mean availability of medicines across the 11 private chain pharmacies was higher than across the 39 private independent pharmacies for all three product types. For OBs, mean availability in the chain pharmacies surveyed was more than twice that of the independent pharmacies (14.3% and 6%, respectively). For MSGs, availability was significantly higher (64.9%) in the chain pharmacies than in the independent pharmacies (40.3%), as was also the case for LPGs (76.4% chain and 50.2% independent).

Table 3.4. Mean (%) availability of medicines in chain and independent pharmacies in the private sector

Product type	Mean (%) availability, chain pharmacies (n=11)	Mean (%) availability, independent pharmacies (n=39)
OBs	14.3	6.6
MSGs	64.9	40.3
LPGs	76.4	50.2

Source: compiled by the authors based on HAI recommendations *(5)*.

3.1.7 Medicine availability in pharmacies owned by pharmacists and non-pharmacists

The mean availability of medicines in private pharmacies owned by pharmacists was less than in pharmacies owned by non-pharmacists (see Table 3.5). For OBs, mean availability was 6.8% across the 24 pharmacies surveyed that were owned by pharmacists, whereas it was 9.7% in the 26 pharmacies sampled that were owned by non-pharmacists. For MSGs, availability was lower (41.3%) in pharmacist-owned pharmacies than in pharmacies owned by non-pharmacists (49.8%). For LPGs, availability was 50.9% and 60.5%, respectively**.**

The majority of pharmacist-owned pharmacies were located in rural areas, where medicine availability was lower overall.

Table 3.5. Mean (%) availability of medicines in pharmacies owned by pharmacists or non-pharmacists in the private sector

Product type	Mean (%) availability, Pharmacist-owned pharmacies (n=24)	Mean (%) availability, pharmacies owned by non-pharmacists (n=26)
OBs	6.8	9.7
MSGs	41.3	49.8
LPGs	50.9	60.5

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2 Medicine prices

3.2.1 Public sector procurement prices

Table 3.6 shows the prices that the Moldovan Government pays for medicines procured through the centralized procurement system.

For the two medicines procured as OBs, the median MPR was 2.39 (139% more than IRPs; for example, clonazepam MPR = 0.40, clozapine MPR = 4.38). Neither medicine was procured as a generic. Across the 17 MSGs products procured, the median MPR was 2.36 (136% more than IRPs), with half the medicines – the interquartile range – between 0.84 and 5.31 times the IRP. For LPGs, the median MPR was 1.68 (across 45 medicines), which is 68% more than IRPs, with half the medicines between 1.04 and 3.67 times the IRP.

Table 3.6. Public sector procurement prices (centralized procurement) compared to IRPs

	OBs	MSGs	LPGs
Median MPR	2.39	2.36	1.68
25th percentile MPR	–	0.84	1.04
75th percentile MPR	–	5.31	3.67
Minimum MPR	0.40	0.53	0.44
Maximum MPR	4.38	31.90	31.90
Number of medicines	2	17	45

Source: compiled by the authors based on HAI recommendations *(5)*.

Just under half of the medicines (46%) were procured at two or more times the IRP. Some medicines were procured at very low prices; for example, clonazepam and cephalexin were about 60% under their IRPs. However, other medicines were procured at much higher prices, such as hydrochlorothiazide, acetylsalicylic acid and metronidazole at 31, 24, and 22 times their IRPs, respectively. Table 3.7 lists those medicines with the highest multiples of IRPs, whereby there could be opportunities for buying from lower price sources.

Table 3.7. Medicines with high public procurement prices compared to IRPs

Medicine	MSGs MPR	LPGs MPR
Hydrochlorothiazide	31.90	31.90
Acetylsalicylic acid		24.08
Metronidazole		22.44
Fluoxetine	17.22	17.22
Diclofenac	7.29	7.29
Folic acid		6.59
Amitriptyline	6.35	6.35
Fluconazole		6.24

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.2 Patient prices in the public sector

3.2.2.1 Overall patient prices in the public sector

In the public sector the median MPR for OBs was 7.64 (664% more than the IRPs), with half the medicines priced between 2.76 and 18.74 times the IRPs. Across 42 MSG products, the median MPR was 6.72, with half the medicines priced between 3.23 and 9.36 times the IRPs. For LPGs (45 medicines), the median MPR was 5.22, with half the medicines priced between 2.90 and 7.28 times the IRPs (see Table 3.8 for all the related figures).

Table 3.8. Patient prices in the public sector compared to IRPs

	OBs	MSGs	LPGs
Median MPR	7.64	6.72	5.22
25th percentile MPR	2.76	3.23	2.90
75th percentile MPR	18.74	9.36	7.28
Minimum MPR	0.45	0.64	0.64
Maximum MPR	117.26	82.33	43.07
Number of medicines	8	42	45

Source: compiled by the authors based on HAI recommendations *(5)*.

For all three product types, some medicines were much lower priced than the IRPs, while others were much higher. For example, the OBs ranged from 0.45 times the IRPs

(55% less) for clonazepam tablets, to 117 times higher for diclofenac tablets. MSGs ranged from 0.64 times the IRPs (36% less) for carbamazepine SL tablets, to 82 times higher for fluconazole capsules. Overall, LPGs were a little over 5 times the IRPs, with carbamazepine SL tablets at 36% below, to acetylsalicyclic acid tablets at 43 times higher than the IRPs.

Table 3.9 lists those medicines with the highest multiples of IRPs, whereby there could be opportunities for buying and selling at lower prices.

Annex IV lists the MPRs of individual medicines in the public sector.

Table 3.9. Medicines with high patient prices compared to IRPs in the public sector

Medicine	OBs MPR	MSGs MPR	LPGs MPR
Acetylsalicyclic acid	32.48	43.07	43.07
Fluconazole	–	82.33	33.33
Hydrochlorothiazide	–	33.52	31.24
Metronidazole	–	–	24.16
Fluoxetine	–	23.12	23.12
Folic acid	–	14.83	10.99
Ciprofloxacin	–	20.33	6.03
Diclofenac	117.26	8.86	9.00

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.2.2 Price variation by medicine in the public sector

Prices varied across public sector medicine outlets for only a few OBs and MSG products.[3] The greatest variation was seen for some of the LPGs (whereby it is likely that the product differed across the outlets surveyed). Table 3.10 lists medicines for which price variation in the public sector was greatest. The greatest variation was seen with ciprofloxacin, for which the price variation was fourfold across half the LPGs found. Half the prices of the MSG diazepam (Relium (Polfa SA)) showed a twofold variation across the public sector outlets in which it was stocked.

3 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.

Table 3.10. Price variation in the public sector

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

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.2.3 Price variation by product type in the public sector

Using matched medicines pairs (that is, where the medicine was available as two product types), OBs were on average 1.8–2.1 times the price of the generic equivalents. This represents the brand premium; namely, how much extra on average a patient would have to pay when purchasing the OB. MSGs were, on average, priced 1.3 times higher than their LPGs in the public sector (see Table 3.11).

Table 3.11. Ratios of matched pairs of product types in the public sector

	No. of medicines	Ratio
OBs: MSGs	5	1.8
OBs: LPGs	6	2.1
MSGs: LPGs	42	1.3

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.3 Patient prices in the private sector

3.2.3.1 Overall patient prices in the private sector

In the private sector the median MPR for OBs was 8.70 times the IRP (770% higher), with half the medicines priced between 3.44 and 29.02 times the IRPs (see Table 3.12). Across 42 MSG products, the median MPR was 6.78, with half the medicines priced between 3.30 and 9.76 times the IRPs. For LPGs (43 medicines), the median MPR was 4.65, with half the medicines priced between 3.03 and 7.12 times the IRPs.

Table 3.12. Patient prices in the private sector compared to IRPs

	OBs	MSGs	LPGs
Median MPR	8.70	6.78	4.65
25th percentile MPR	3.44	3.30	3.03
75th percentile MPR	29.02	9.76	7.12
Minimum MPR	0.46	0.67	0.64
Maximum MPR	125.58	84.00	44.30
No. of medicines	10	42	43

Source: compiled by the authors based on HAI recommendations *(5)*.

As with the public sector, in the private sector some medicines were priced much lower than the IRPs, while others were much higher. For example, the OBs ranged from 0.46 times the IRPs (54% less) for clonazepam tablets, to 125 times higher for diclofenac tablets. MSGs ranged from 0.67 times the IRPs (33% less) for carbamazepine SL tablets, to 84 times higher for fluconazole capsules. Overall, LPGs were 4.65 times the IRPs, with carbamazepine SL tablets at 53% below, to acetylsalicyclic acid tablets at 44 times higher than the IRPs.

Table 3.13 lists those medicines with the highest multiples of IRPs, whereby there could be opportunities for buying and selling at lower prices.

Annex IV lists the MPRs of individual medicines in the public sector.

Table 3.13. Medicines with high patient prices compared to IRPs in the private sector

Medicine	OBs MPR	MSGs MPR	LPGs MPR
Fluconazole	107.67	84.00	35.83
Diclofenac	125.58	9.52	9.55
Metronidazole	–	20.37	24.66
Acetylsalicyclic acid	33.75	44.75	44.30
Hydrochlorothiazide	–	37.06	37.22
Ciprofloxacin	–	21.32	6.23
Folic acid	–	15.23	14.53
Diazepam	–	12.81	5.28

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.3.2 Price variation by medicine in the private sector

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 3.14, the greatest variation was seen for the LPG captopril 25 mg, whereby the 25th and 75th percentiles ranged from MPR 0.74 to MPR 4.65 (a sixfold difference).

Table 3.14. Price variation in the private sector

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

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.3.3 Price variation by product type in the private sector

Using matched medicine pairs, OBs were on average 1.8 times (80%) the price of the generics (see Table 3.15). MSGs were 1.4 times higher priced than the LPGs in the private sector (that is, on average patients buying the most commonly sold generics are paying about 40% more than if they were to purchase LPGs).

Table 3.15. Ratios of matched pairs of product types in the private sector

	No. of medicines	Ratio
OBs: MSGs	7	1.8
OBs: LPGs	8	1.8
MSGs: LPGs	42	1.4

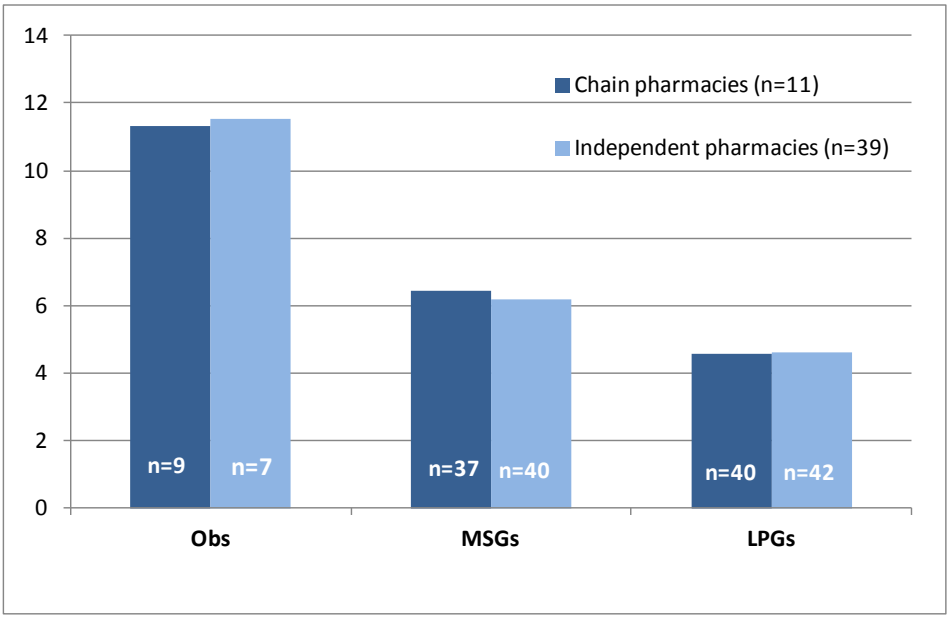
Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.3.4 Patient prices in chain and independent pharmacies

As shown in Fig. 3.3, overall patient prices were similar in chain pharmacies and independent pharmacies for OBs, MSGs and LPGs.

Annex V contains further summary data (percentiles, minimum MPR, maximum MPR, and so on).

Fig. 3.3. Patient prices in chain and independent pharmacies in the private sector



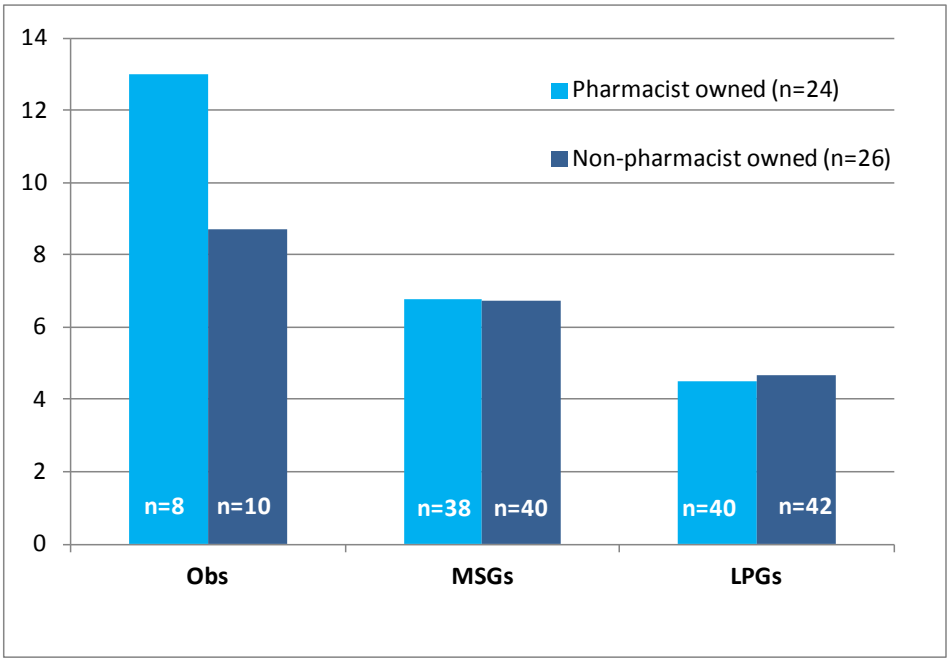
Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.3.5 Patient prices in pharmacies owned by pharmacists and non-pharmacists

Overall, patient prices for generic medicines (MSGs and LPGs) showed little variation across pharmacies, according to whether they were owned by pharmacists or non-pharmacists. This was not the case for the originator medicines; median MPRs were 13.0 for pharmacies owned by pharmacists and 8.70 for those owned by non-pharmacists (see Fig. 3.4).

Annex VI contains further summary data (percentiles, minimum MPR, maximum MPR, and so on).

Fig. 3.4. Patient prices in pharmacies owned by pharmacists and non-pharmacists in the private sector



Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.4 Patient prices by region, public and private sectors

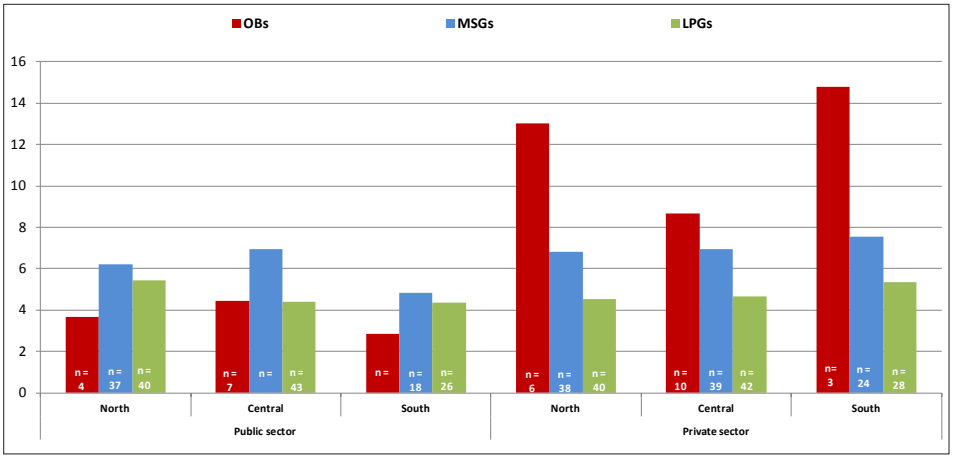
In the public sector, median patient prices were highest in the Central region for OBs and MSGs, compared to the North and South regions (see Fig. 3.5). For LPGs the North had higher prices (median MPR 5.42) compared to the Central region (median MPR 4.42) and the South (median MPR 4.34).

In the private sector, median patient prices were slightly higher in the South region for all three product types. LPGs had a median MPR of 5.33 in the South, whereas in the North and Central regions prices were slightly lower (median MPRs of 4.51 and 4.64, respectively). In the Central region, OBs were much lower priced than in the other two regions.

It should be taken into account that OB data are based on only few price points (in both sectors).

Annex VII contains further summary data (percentiles, minimum MPR, maximum MPR, and so on).

Fig. 3.5. Median patient prices by geographical region in the public and private sectors



Source: compiled by the authors based on HAI recommendations *(5)*.

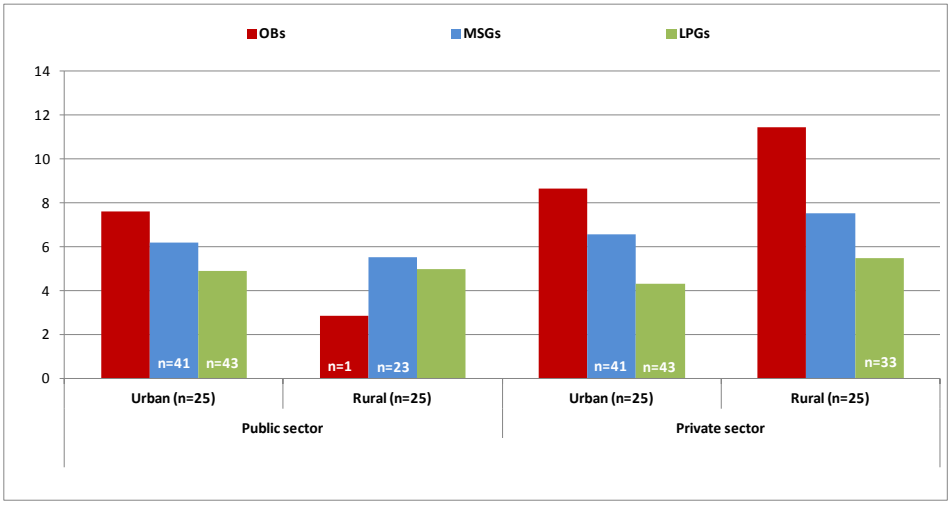
3.2.5 Patient prices in urban and rural areas, public and private sectors

In the public sector, overall patient prices for OBs were much higher in urban areas (median MPR 7.63) than in rural areas (median MPR 2.87); however, there were only few medicines in the dataset. For MSGs and LPGs, there was less price variation between urban and rural areas (see Fig. 3.6). MSGs had a median MPR of 6.20 in urban areas and 5.53 in rural areas, and LPGs were at MPR 4.93 and MPR 5.01, respectively.

In the private sector, prices in rural areas were higher than those in urban areas for all three product types. LPGs had a median MPR of 5.50 in rural areas and 4.34 in urban areas. OBs were higher priced in rural areas (median MPR 11.45) than in urban areas (median MPR 8.68).

Annex VIII contains further summary data (percentiles, minimum MPR, maximum MPR, and so on).

Fig. 3.6. Median patient prices in urban and rural areas in the public and private sectors



Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.6 Price variations across sectors

3.2.6.1 Public procurement prices and patient prices in the public sector

Table 3.16 shows differences in public sector patient prices and public sector procurement prices for medicines found in both the public and the centralized government procurement sectors (matched pairs of medicines).

Across 44 LPG products found in both the public and procurement sectors, patients in the public sector were paying 211.7% more than the government procurement price (centralized procurement). For MSGs, the difference was 86.9%, but there was little difference in OB prices (however, the analysis only included two medicines).

Table 3.16. Differences in procurement and patient prices in the public sector

Product type	Public sector procurement prices, median MPR	Public sector patient prices, median MPR	% difference between patient prices and procurements prices
OBs (n=2)	2.39	2.44	2.0
MSGs (n=17)	2.36	4.42	86.9
LPGs (n=44)	1.68	5.24	211.7

Source: compiled by the authors based on HAI recommendations *(5)*.

3.2.6.2 Comparison of patient prices in the public and private sectors

The patient prices for OBs in the private sector were on average 6.3% higher than those in the public sector. For MSGs, prices were very similar across the two sectors and for LPGs the patient prices in the private sector were 10.8% lower than those in the public sector (see Table 3.17).

Table 3.17. Differences in public sector and private sector patient prices

Product type	Public sector patient prices, median MPR	Private sector patient prices, median MPR	% difference between private and public sectors
OBs (n=8)	7.64	8.12	6.3
MSGs (n=41)	6.58	6.57	-0.2
LPGs (n=43)	5.22	4.65	-10.8

Source: compiled by the authors based on HAI recommendations *(5)*.

3.3 Affordability

Affordability was assessed as the number of days a person on the official minimum daily salary would have to work in order to purchase standard treatment regimens. According to the legislation, at the time of the survey the minimum salary was MDL 600 per month or MDL 20 per day (approximately US$ 1.70 per day).[4] The median cost of treatments in MDL was calculated from the price data collected in the public and private sectors. WHO/HAI consider treatments to be unaffordable if a person on the minimum salary has to work more than one day to purchase a course of treatment for an acute condition or to purchase 30 days' supply of medicines used to treat chronic diseases.

Table 3.18 lists how many days a worker on the minimum salary would have to work to purchase various treatments. This assessment is based on patients paying the full price. However, it should be noted that many of the medicines listed are fully or partially reimbursed by the state budget, in outpatient/ambulatory settings, from the compulsory health insurance fund.

For antimicrobials to treat respiratory tract and other infections, the cost of a course of treatment ranged from 0.9 days' wages for amoxicillin capsules (generics) in the public and private sectors, to 15.5 days for the OB clarithromycin in the private sector. It is interesting to

4 Republic of Moldova Law on the payroll system in budgetary sector, No. 335-XVI, dated 23 December 2005.

note that the MSG versions of a number of antimicrobials were less affordable than the LPG versions (for example, purchasing the MSG ciprofloxacin required over 5 days' wages, whereas the lowest priced version required less than 2 days' wages).

For chronic diseases, a few conditions required less than 1 days' wages to purchase 30 days' supply, such as the generic glibenclamide (tablets) for diabetes and atenolol for hypertension (in both the public and private sectors). However, most medicines to treat hypertension required more than 1 day's wages (for example, amlopidine cost 3.2–3.9 days' wages; enalapril 10 mg cost 1.7–2.4 days' wages; and lisinopril cost 2.7–3.9 days' wages, depending on the product type and sector). Buying one salbutamol inhaler to treat asthma required a little over 2 days wages' and purchasing simvastatin for hypercholesterolaemia required 6.5 days' wages.

Those on the minimum wage would have to pay at least half their monthly income to purchase 30 days' treatment of some medicines, including:

- clozapine for schizophrenia (over 46 days' wages)
- risperidone for psychoses (over 31 days' wages)
- levodopa + carbidopa for Parkinson's disease (over 29 days' wages)
- sulfasalazine for ulcerative colitis (over 15 days' wages).

Where OBs were available, examples were available whereby there was little difference in the affordability of treatment using these products, compared to treatment with LPGs (e.g. salbutamol inhaler and amlodipine). However, there were also examples of OBs being significantly less affordable than generic equivalents (e.g. purchasing the OB diclofenac to treat arthritis requires 19.1 days' wages in the private sector, whereas the MSG requires 1.4 days' wages).

The treatment costs in Table 3.18 refer to medicines only and do not include the costs of consultations and diagnostic tests. Further, chronic diseases often require treatment with combination therapy that can increase costs and further reduce affordability. Should a hypertensive diabetic on the minimum wage need treatment for hypercholesterolaemia,[5] then 8 to 15 days' wages would be needed to pay for 30 days' treatment, depending on the choice of medicine and where it is dispensed. In addition, diseases rarely affect only one member of a family. Each month a family in which a parent has arthritis requiring diclofenac, and a child has asthma requiring a salbutamol inhaler needs to spend 3.5 to 21.7 days' wages on these treatments, depending on the product types purchased and where they are dispensed.

Clearly many treatments are simply not affordable for those on low incomes, when paying full prices, even when purchasing the lowest priced medicines.

5 One antihypertensive (atenolol, amlodpine enalapril or lisinopril), one anti-diabetic (glibenclamide) and one antihypercloesterolaemia (simvastatin).

Table 3.18. Number of days' wages needed to purchase treatments in the public and private sectors

Treatment	Number of days' wages, public sector			Number of days' wages, private sector		
	OB	MSG	LPG	OB	MSG	LPG
RESPIRATORY TRACT AND OTHER INFECTIONS						
Amoxicillin 250 mg cap x 21	–	0.9	0.9	–	0.9	0.9
Amoxicillin 125 mg/5 ml susp. 60 ml	–	1.3	1.0	–	1.4	1.3
Ciprofloxacin 500 mg cap x 14	–	5.1	1.5	–	5.4	1.6
Cephalexin 250 mg cap x 21	–	1.3	1.2	–	1.3	1.2
Clarithromycin 500 mg cap x 7	–	6.6		15.5	6.8	–
Co-trimoxazole 480 mg tab x 14	–	1.1	0.5	–	1.2	0.4
Metrondazole 500 mg tab x 21	–	–	2.1	4.8	1.8	2.1
DIABETES						
Glibenclamide 5 mg tab x 60	–	1.0	0.9	–	1.0	0.8
HYPERTENSION						
Atenolol 50 mg tab x 30	–	0.9	0.9	–	1.0	0.9
Amlodipine 5 mg tab x 30	–	3.7	3.7	3.2	3.9	3.7
Captopril 25 mg x 30	–	1.6	0.6	–	1.7	0.6
Enalapril 5 mg tab x 30	–	2.0	1.3	–	2.4	1.8
Enalapril 10 mg tab x 30	–	2.3	1.7	–	2.4	1.8
Hydrochlorothiazide 25 mg tab x 30	–	–	–	–	2.4	2.4
Lisinopril 10 mg tab x 30	–	3.8	2.7	–	3.9	2.9
Verapamil 40 mg x 180	–	9.3	9.3	–	9.4	9.2
HYPERCHOLESTEROLAEMIA						
Simvastatin 20 mg tab x 30	–	9.9	8.4	–	10.2	6.5
ASTHMA						
Salbutamol inhaler 100 mcg x 200 doses	2.4	2.2	2.2	2.6	2.3	2.3
ARTHRITIS / ANALGESIA						
Paracetamol 500 mg tab x 120	3.5	1.3	1.3	3.6	1.3	1.3
Diclofenac 50 mg tab x 60	17.9	1.3	1.4	19.1	1.4	1.5
Tramadol 50 mg x 120	–	8.1	8.7	–	9.2	9.3
ULCER						
Omeprazole 20 mg x 30	–	1.7	1.7	–	1.8	1.8
Ranitidine 150 mg x 60	–	2.9	2.5	–	3.0	2.2

Famotidine	–	5.0	1.8	–	5.2	1.4
DEPRESSION / PSYCHOSES						
Amitriptyline 25 mg tab x 30	–	2.5	2.5	–	2.7	2.6
Imipramine 25 mg tab x 90	–	6.5	6.5	–	6.8	6.8
Fluoxetine 20 mg tab x 30	–	5.0	5.0	–	–	–
Clozapine 100 mg tab x 90	46.1	–	–	49.9	–	–
Risperidone 2 mg tab x 90	31.2	–	–	32.1	–	–
OTHER						
Sulfasalazine 500 mg tab x 120	–	15.2	15.2	–	15.8	15.8
Levodopa+Cabidopa 250/25 mg x 90	–	29.3	29.3	–	31.1	31.1

Source: compiled by the authors based on HAI recommendations *(5)*.

3.4 Medicine price components

The final price paid for a medicine reflects the manufacturer selling price (MSP) plus all add-on costs in the supply chain.

In this study, price component data were collected for six medicines in urban and rural areas in the public and private sectors (OBs and generics). Starting at the point of sale in a pharmacy, prices were traced back through wholesalers/distributors and so on, to determine the mark-ups and other components that make up the final patient price.

3.4.1 Cumulative mark-ups

In the public sector, cumulative mark-ups were higher in urban areas (approximately 47–52%) than in rural areas (approximately 41%), as shown in Table 3.19. In the private sector, cumulative mark-ups in urban areas were in the same range at approximately 47–52%, while in rural areas it was slightly less at 44–52% (but more than the mark-ups in rural areas within the public sector).

There was little difference between cumulative mark-ups for OBs and generics in urban public and urban private sector facilities, and rural public sector facilities. In rural areas of the private sector, cumulative mark-ups of some generics (44–51%) were lower than OBs (51%).

Cumulative mark-ups for locally produced generics were similar to imported OBs and generics.

Annex IX lists the cumulative mark-ups for all medicines for which data were collected.

Table 3.19. Cumulative mark-ups in urban and rural areas and in the public and private sectors

Urban/rural	Product type	Imported/ locally produced	Cumulative mark-ups (%)	
			Public sector	Private sector
Urban	Originator	Imported	47.18–49.39	47.65–51.68
	Generic	Imported	49.36–51.78	47.12–49.59
	Generic	Local	48.59	50.55
Rural	Originator	Imported	40.87–40.92	51.47–51.75
	Generic	Imported	40.59–41.53	44.19–51.78
	Generic	Local	40.08	50.55

Source: compiled by the authors based on HAI recommendations *(5)*.

3.4.2 Wholesaler and retailer mark-ups

As shown in Table 3.20, there was little difference (14.50–14.97%) in wholesaler mark-ups between sectors, product types, location and according to whether the medicine was imported or locally manufactured.

Table 3.20. Wholesaler mark-ups in the public and private sectors

Urban/rural	Product type	Imported/ locally produced	Wholesaler mark-up (%)	
			Public sector	Private sector
Urban	Originator	Imported	14.97	14.97
	Generic	Imported	14.50–14.97	14.97
	Generic	Local	14.97	14.97
Rural	Originator	Imported	14.97	14.97
	Generic	Imported	14.97	14.87–14.97
	Generic	Locally produced	14.97	14.97

Source: compiled by the authors based on HAI recommendations *(5)*.

Table 3.21 gives percentage pharmacy mark-ups in the public and private sectors. Pharmacy mark-ups are applied to the wholesale procurement price (rather than the more common practice of applying it to the wholesale selling price).

In the public sector, pharmacy mark-ups were higher in urban areas (approximately 20–25%) than in rural areas (14–15%). In the private sector, mark-ups in urban areas were similar to those in rural areas (approximately 20–25% and 18–25%, respectively). Pharmacy mark-ups in rural public sector facilities were less than in rural private sector pharmacies (approximately 14–15% and 18–25%, respectively).

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

Annex IX lists the wholesaler and pharmacy mark-ups for medicines for which data were collected.

Table 3.21. Pharmacy mark-ups in the public and private sectors

Urban/rural	Product type	Imported/ Locally produced	Mark-ups (%)	
			Public sector	Private sector
Urban	Originator	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	Originator	Imported	14.67–15.0	24.68–24.95
	Generic	Imported	14.93–14.98	18.08–25.0
	Generic	Local	14.73	24.13

Source: compiled by the authors based on HAI recommendations *(5)*.

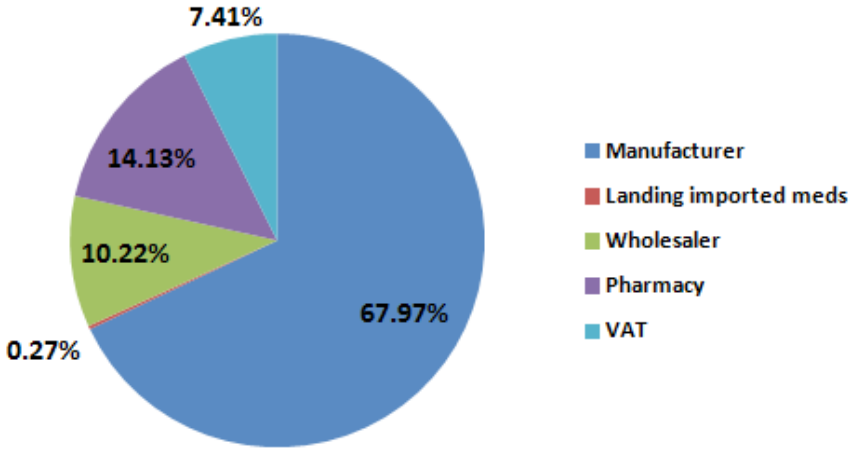
3.4.3 Percentage contribution to the final patient price

Across the six medicines in the price component analysis, the MSP was the greatest contribution to the final patient price (for OBs and generics, in both the public and private sectors, and for imported and locally manufactured medicines).

Fig. 3.7 shows the contribution of each stage to the final patient price (MDL 45.8) for a generic imported salbutamol inhaler in the urban private sector. The MSP is 67.97% of

the final patient price. Similar data were gathered for the OB in the private sector, and both product types in the public sector. A value-added tax (VAT) component of 8% is applied to all medicines.

Fig. 3.7. Price components for an imported generic salbutamol inhaler in the urban private sector

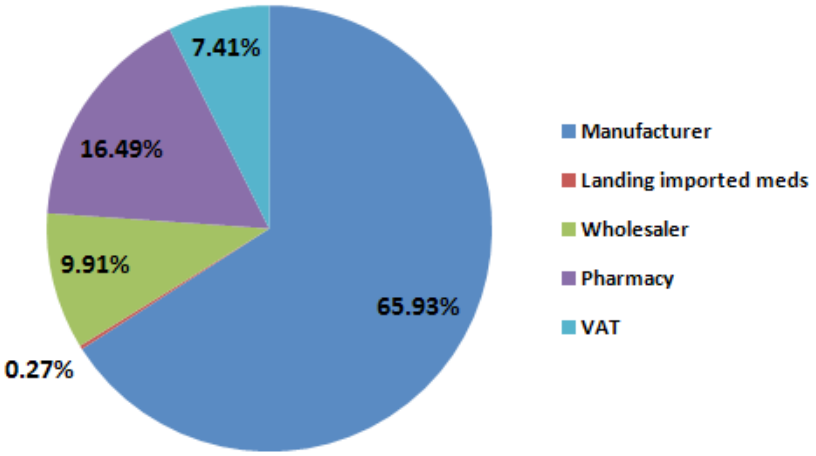


Source: compiled by the authors based on HAI recommendations *(5)*.

Fig. 3.8 shows the data for a generic imported salbutamol inhaler in the rural private sector. In this case the add-on costs (in particular the higher pharmacy mark-up) contribute to a slightly higher patient price (MDL 45.58), but the MSP is still the largest contributor at 65.93%.

Annex IX lists the percentage contributions of each price component to the final patient price for all medicines for which data were collected.

Fig. 3.8. Price components for an imported generic salbutamol inhaler in the rural private sector



Source: compiled by the authors based on HAI recommendations *(5)*.

3.5 Dynamics of medicine prices in the Republic of Moldova

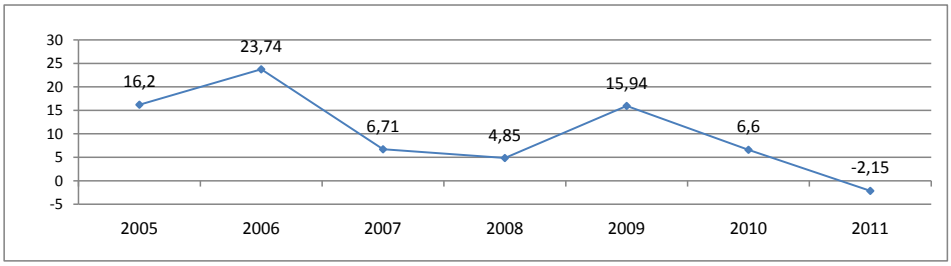
The survey findings reported above relate to a single point in time. It is important to also monitor price trends. In the absence of a system of regular price monitoring in the Republic of Moldova, results of some surveys were used to access price changes over time *(5)*, as well as analyses undertaken by the Medicines Agency in 2011 *(8)*.

Fig. 3.9 and Fig. 3.10 present the dynamics of price indexes and the share of medicine price bands during the period 2005–2011. As shown in Fig. 3.9, there was greater price stability for medicines from June 2010.[6] From 2010 to 2011 a decreasing price trend was seen, as shown in Fig. 3.10.

Fig. 3.11 shows the fall in low-priced medicines from 2006 to 2011, while the share of higher priced medicines was increasing. However, between 2010 and 2011, there was a small increase in the share of low-priced medicines, along with a small decrease in the share of higher priced medicines. From 2009 to 2011, the share of medicines priced between MDL 10 and 50 was relatively stable.

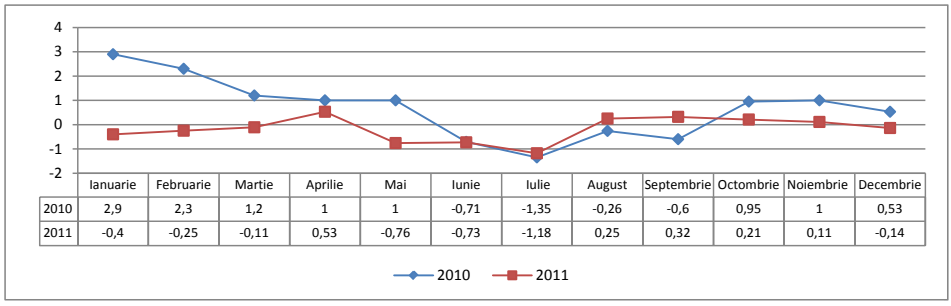
6 Regulation concerning the approval and registration of producers' prices for medicines, approved via Republic of Moldova Government Decision No. 525, 22 June 2010.

Fig. 3.9. Dynamics of medicine price indexes, 2005–2011



Source: data from Medicines Agency Activity Report 2012 *(8)*.

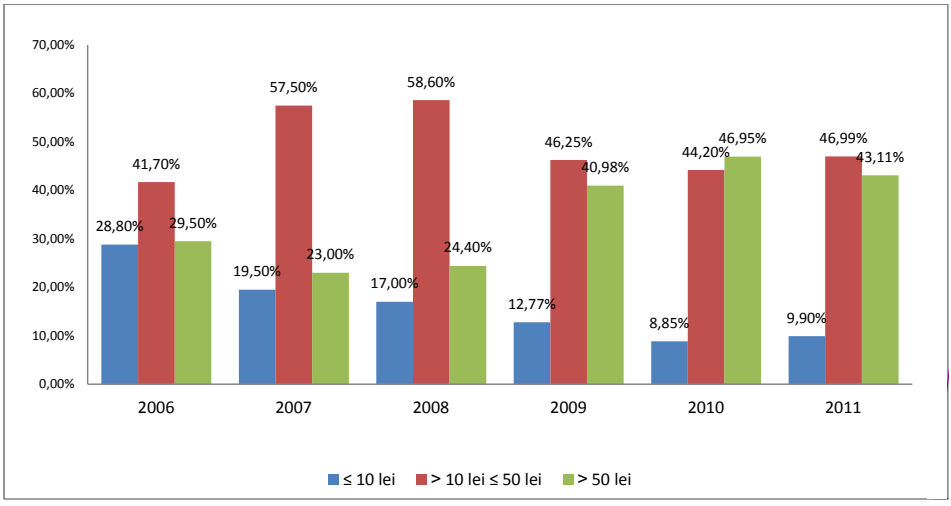
Fig. 3.10. Dynamics of medicine price indexes, 2010–2011



	Ianuarie	Februarie	Martie	Aprilie	Mai	Iunie	Iulie	August	Septembrie	Octombrie	Noiembrie	Decembrie
2010	2,9	2,3	1,2	1	1	-0,71	-1,35	-0,26	-0,6	0,95	1	0,53
2011	-0,4	-0,25	-0,11	0,53	-0,76	-0,73	-1,18	0,25	0,32	0,21	0,11	-0,14

Source: data from Medicines Agency Activity Report 2012 *(8)*.

Fig. 3.11. Share (%) of three medicine price bands, 2006–2011



Source: compiled by the authors based on HAI recommendations *(5)*.

3.6 International price comparisons

3.6.1 Patient prices

Patient prices of 23 medicines in the private sector of the Republic of Moldova were compared with patient prices in six European countries: Bulgaria, Hungary, Germany, Italy, Lithuania and Romania.

The price in the Republic of Moldova was the median price across the private sector pharmacies that were evaluated. These prices were converted to euro using the exchange rate of €1 = MDL 15.6831.[7] All patient prices include VAT where applicable. Where prices of multiple packs of a product were available in comparator countries, the price of the pack size closest to the Moldovan pack size was chosen.

3.6.1.1 OBs

As shown in Table 3.22, overall OB patient prices in the Republic of Moldova were 0.84 times (16%) lower than in Bulgaria, 0.27 times (73%) lower than in Germany, and 0.65 times (35%) lower than in Italy. Moldovan prices were very similar to prices in Lithuania for OBs. OB prices in the Republic of Moldova were 1.17 times (17%) higher than in Hungary and 1.13 times (13%) higher than in Romania. However, it should be borne in mind that these comparisons were based on only a few medicines.

Table 3.22. Summary of ratios of Moldovan OB prices to comparator country OB prices in the private sector

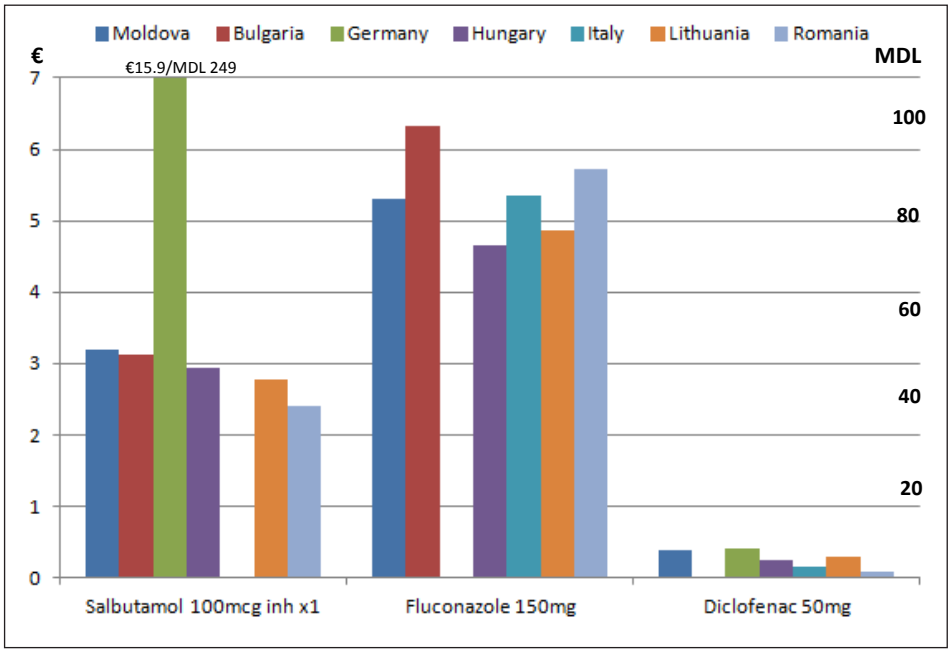
	Median ratio, MDA/ comparator country	Minimum ratio	Maximum ratio	No. of medicines
Bulgaria	0.84	0.72	1.27	5
Germany	0.27	0.09	0.98	6
Hungary	1.17	1.09	1.63	4
Italy	0.65	0.08	2.60	5
Lithuania	1.01	0.62	1.34	8
Romania	1.13	0.87	4.88	6

Source: compiled by the authors based on HAI recommendations *(5)*.

7 Oanda currency conversion, 1 October 2011.

Fig. 3.11 shows examples of medicines for which patient prices for OBs in the Republic of Moldova were higher than in some or all of the comparator countries. The median price for one salbutamol 100 mcg/dose inhaler (manufactured by GSK) was MDL 52 (approximately €3.20) in the Republic of Moldova but only about MDL 38 (€2.40) in Romania. The OB version of fluconazole 150 mg (Pfizer) was MDL 86.28 (approximately €5.30) for 1 capsule in the Republic of Moldova but about MDL 73 (€4.66) in Hungary. For a diclofenac 50 mg tab, the median price in the Republic of Moldova (MDL 6.37, about €0.39) was higher than in all comparator countries, excluding Germany.

Fig. 3.12. Median patient prices for selected OBs in the private sector in the Republic of Moldova and comparator countries



Notes: Prices for fluconazole and diclofenac are for 1 tab/cap; prices for salbutamol are for 1 inhaler; €1 = MDL 15.68.
Source: compiled by the authors based on HAI recommendations *(5)*.

3.6.1.2 LPGs

For LPGs, median prices in the Republic of Moldova were 0.89 times (11%) lower than prices in Bulgaria. Prices ranged from 60% lower in the Republic of Moldova for omeprazole 20 mg cap to 167% higher in the Republic of Moldova for an amlodipine 5 mg tab (see Table 3.23). Prices in the Republic of Moldova were considerably lower (0.13

times lower, 87%) than German prices. Across 20 medicines, all prices in the Republic of Moldova were lower than those in Germany. Overall, prices in the Republic of Moldova were similar to prices in Hungary and Lithuania, but there were large variations across individual medicines. Overall Moldovan prices were 0.36 times (64%) lower than those in Italy. Prices of LPGs were 13% higher in the Republic of Moldova than those in Romania.

Table 3.23. Summary of ratios of LPG prices in the Republic of Moldova to comparator country LPG prices in the private sector

	Median ratio MDA/ comparator country	Minimum ratio	Maximum ratio	No. of medicines
Bulgaria	0.89	0.40	2.67	19
Germany	0.13	0.02	0.73	20
Hungary	0.96	0.15	4.40	18
Italy	0.36	0.07	1.40	15
Lithuania	0.95	0.07	2.00	20
Romania	1.13	0.5	4.00	19

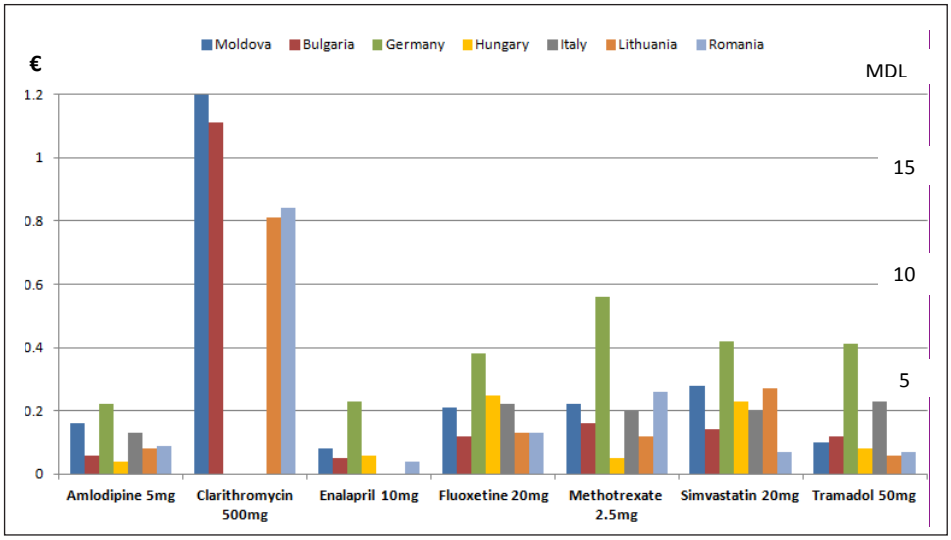
Note. MDA is the International Organization for Standardization (ISO) country code for the Republic of Moldova.

Source: compiled by the authors based on HAI recommendations *(5)*.

Fig. 3.12 shows median prices in euro for some individual LPGs in the private sector. While prices in Germany were higher than in the Republic of Moldova, in other comparator countries prices of individual medicines were often far lower than in the Republic of Moldova. For example, one dose of methotrexate 2.5 mg was MDL 3.45 (€0.22 in the Republic of Moldova but only MDL 0.78 (€0.05) in Hungary, and one simvastatin 20 mg tab was MDL 4.33 (€0.28) in the Republic of Moldova but far less, at MDL 1.1 (€0.07) in Romania.

Annex X lists the private sector OB and LPG patient prices (in euro) in the Republic of Moldova and the comparator countries in which data were available.

Fig. 3.13. Median patient prices for selected LPGs in the private sector in the Republic of Moldova and comparator countries



Notes: Prices are for 1 tab/cap; €1 = MDL 15.68.

Source: compiled by the authors based on HAI recommendations *(5)*.

3.6.2 Manufacturer ex-factory prices

Manufacturers' ex-factory prices in the Republic of Moldova (from the National Catalogue Medicine Prices for Manufacturers *(7)*) were converted to euro and compared with ex-factory prices in the six comparator countries (data provided by ÖBIG).

There were a total of 55 cases in which the ex-factory price of a specific manufacturer in the Republic of Moldova could be compared with one of the European countries. Across these, the median price in the Republic of Moldova was 14% higher than in the comparator country (see Table 3.24). These ranged from a Panadol 500mg tab (GSK), which was priced 92% lower in the Republic of Moldova than in Italy, to Gedeon Richter's brand of simvastatin 20 mg tab, which was priced 6.8 times (580%) higher in the Republic of Moldova compared to Romania.

Ex-factory prices in the Republic of Moldova were 44% higher than Romania. The ÖBIG data stated that for Romania, an import mark-up of 8.5% was included in the ex-factory price for imported products, so it is likely that the price differential was even greater.
Fig. 3.13 shows three examples of medicines for which the ex-factory price in the Republic of Moldova was higher than in the comparator countries.

Annex XI lists the ex-factory prices (in euro) in the Republic of Moldova and the comparator countries for which comparisons were possible.

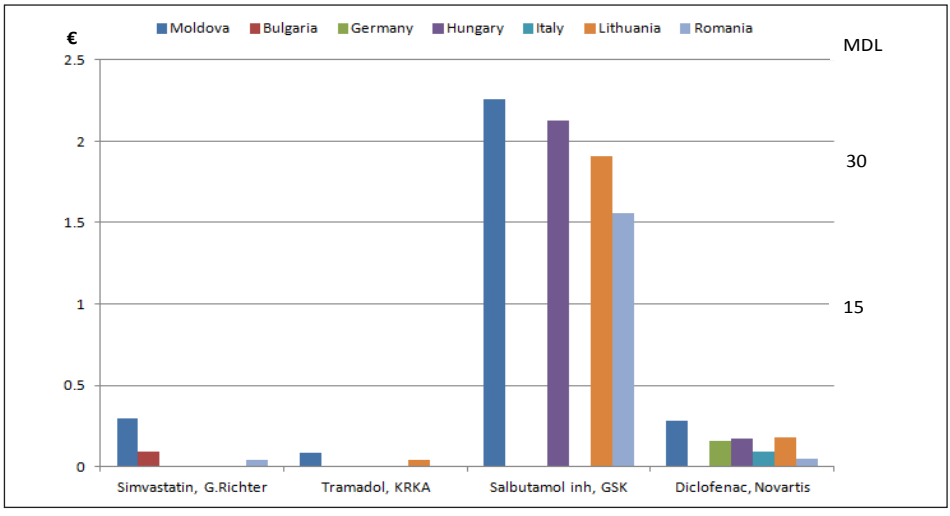
Table 3.24. Summary of ratios of ex-factory prices in the Republic of Moldova to comparator country prices

	Median ratio, MDA/ comparator country	Minimum ratio	Maximum ratio	No. of medicines
Bulgaria	1.14	0.83	3.32	9
Germany	0.24	0.13	1.76	4
Hungary	1.16	1.03	1.68	6
Italy	0.80	0.08	3.02	5
Lithuania	0.93	0.51	1.98	17
Romania	1.44	0.97	6.80	14
Overall	1.14	0.08	6.80	55

Note. MDA is the International Organization for Standardization (ISO) country code for the Republic of Moldova.

Source: compiled by the authors based on HAI recommendations *(5)*.

Fig. 3.14. Examples of ex-factory prices in the Republic of Moldova and comparator countries



Notes: Prices are for 1 tab/cap; prices for salbutamol are for 1 x 200-dose inhaler; €1 = MDL 15.68.

Source: compiled by the authors based on HAI recommendations *(5)*.

4. CONCLUSIONS

4.1 Medicine availability

The availability of essential medicines in public and private pharmacies was sub-optimal at under 60%. Two essential medicines were not found in any of the pharmacies that were surveyed.

The availability of medicines was lower in rural areas than in urban areas. In rural areas, the mean availability of generics was 31% and 40% in the public and private sectors, respectively.

In both sectors, availability was highest in the Central region, but this was still sub-optimal at under 62% for generics (private sector).

In the private sector, availability was lower in independent pharmacies (50% for generics) than in chain pharmacies (76%). Availability was also lower in pharmacies owned by pharmacists (51% for generics) compared to those owned by non-pharmacists (60%).

4.2 Centralized government procurement prices

A total of 46% of medicines were procured at more than twice the IRP. Some medicines were procured at very high prices despite the availability of competitively priced products on the international market.

4.3 Patient prices

Overall, patient prices in the public and private sectors were high, even for LPGs, which were about five times their IRPs. Many medicines were procured at very high prices,

including acetylsalicylic acid, fluconazole, hydrochlorothiazide, metronidazole, diclofenc and fluoxetine. Patients were paying 30–40% more for MSGs than LPGs (in both sectors).

Prices in the private sector were about 11% lower than in the public sector for LPGs, but about the same for products with the highest sales.

For LPGs, patients in the public sector were paying about 200% more than the government-centralized procurement prices. For MSGs, patients were paying 86% more than the government-centralized prices.

In the public sector, prices were highest in the Central region for MSGs and OBs. LPGs were higher priced in the North region compared to the other two regions. In the private sector, prices were highest in the South region for generics and OBs. In the public sector, prices of generics were similar in urban and rural areas. In the private sector, prices in rural areas were higher than in urban areas. Prices were similar in chain and independent pharmacies. Generics prices were similar in pharmacies owned by pharmacists and non-pharmacists, but OBs were higher priced in pharmacist-owned pharmacies.

4.4 Affordability

The majority of medicines – especially those used to treat chronic diseases – were not affordable for people on the minimum wage. At least half of their monthly income is needed to purchase a month's treatment for psychoses, Parkinson's disease, schizophrenia, and ulcerative colitis, and about a week's wages is required to purchase treatment for hypercholesterolaemia. Many antihypertensives were unaffordable. The MSG versions of a number of antimicrobials were less affordable than their LPG version.

4.5 Price components

Cumulative mark-ups in the public sector were higher in urban areas (49%) than in rural areas (41%). Mark-ups in the private sector were a little higher than in the public sector, with small variations between rural and urban areas. Wholesaler mark-ups were slightly lower than 15% in both sectors.

In the public sector, pharmacy mark-ups were higher in urban areas (20–25%) than in rural areas (14–15%). In the private sector, mark-ups were similar in urban and rural areas. There was only slight variation between imported and locally manufactured medicines within each sector.

In the public and private sectors, the largest contribution (60–70%) to the final patient price was the MSP/cost, insurance, freight (CIF).

A VAT component of 8% is applied to all medicines.

4.6 International price comparisons

Overall, patient prices for LPGs in the private sector in the Republic of Moldova were lower than in Bulgaria (lower by 11%), Germany (87% lower) and Italy (64% lower). These prices were similar to those in Lithuania and Hungary, but higher (by 13%) than in Romania.

Ex-factory prices in the Republic of Moldova were 14% higher than in the European countries to which they were compared.

5. Recommendations

Consideration should be given to the following recommendations.

- In order to improve the affordability of medicines, the medicines benefits package of the national health insurance scheme should be expanded. All medicines on the national EML should be included as part of the outpatient medicines benefits package. The insurance scheme should use its leverage to ensure the cost-effective use of medicines.
- Interventions are needed – such as education for consumers and health care professionals – to promote the use of low-priced, quality-assured generics. It may be useful to survey people's perceptions of generics and target education campaigns to those perceptions. All medicines on the market, especially low-priced products, must meet quality standards to increase people's confidence in using them.
- Regressive mark-ups should be applied at the wholesale and retail levels. Lower mark-ups should be applied to higher priced medicines to encourage dispensing of lower priced medicines. However, the setting of regressive mark-ups must not compromise the viability of pharmacies, especially in rural areas.
- The availability of essential medicines is sub-optimal. The causes of this need to be identified and action taken to improve the situation.
- In order to improve the affordability of medicines, essential medicines should be exempt from VAT. To recoup lost revenue from medicine sales, the Moldovan Government could consider increasing taxes on unhealthy goods, such as alcohol, cigarettes and sugary drinks.
- As some ex-factory prices are higher in the Republic of Moldova than in some European countries, the method used to establish the manufacturers' registration price should be reviewed.
- Pricing and procurement activities need to be undertaken by separate independent units, rather than the current system where both activities are undertaken by the Medicines Agency.
- A system to monitor regularly the price and availability of medicines should be established.

6. References

1. European Health for All Database (HFA-DB) [online database]. Copenhagen, WHO Regional Office for Europe, 2012 (August update) (http://www.euro.who.int/en/what-we-do/data-and-evidence/databases/european-health-for-all-database-hfa-db2, accessed 6 June 2013).

2. *Republic of Moldova pharmaceutical country profile*. Chişinău, Ministry of Health of the Republic of Moldova in collaboration with the WHO Moldova Country Office, 2011 (http://apps.who.int/medicinedocs/documents/s19093en/s19093en.pdf, accessed 6 June 2013).

3. *Resursele si activitatea sistemului farmaceutic al Republicii Moldova. Anuar statistic 2012 [Resources and activity of the pharmaceutical system in the Republic of Moldova. Statistical yearbook 2012]*. Chişinău, Medicines and Medical Devices Agency of the Ministry of Health of the Republic of Moldova, 2013 (http://amed.md/tc_userfiles/file/DARI%20DE%20SEAMA/Anuar%202012%20AMDM.pdf, accessed 4 December 2013).

4. Atun R et al. Moldova: health system review. Health Systems in Transition, 2008 10(5):1–140 (http://www.euro.who.int/__data/assets/pdf_file/0004/95161/E91756.pdf, accessed 6 June 2012).

5. *Measuring medicine prices, availability, affordability and price components, 2nd edition*. Amsterdam, World Health Organization and Health Action International, 2008 (http://www.haiweb.org/medicineprices/manual/documents.html, accessed 6 June 2012).

6. Frye JE ed. *International drug price indicator guide, 2010 edition*. Cambridge, MA, Management Sciences for Health and World Health Organization, 2011.

7. Catalogul national de prețuri de producător la medicamente [National catalogue of medicine prices for manufacturers] [web site]. Chişinău, Medicines and Medical Devices Agency of the Ministry of Health of the Republic of Moldova, 2013 (http://amed.md/?new_language=0&go=page&p=143, accessed 4 December 2013).

8. *Raport de activitate a Agenției Medicamentului pentru anul 2012 [Activity report of the Medicines Agency for 2012]*. Chisinau, Medicines and Medical Devices Agency of the Ministry of Health of the Republic of Moldova, 2013 (http://amed.md/tc_userfiles/file/DARI%20DE%20SEAMA/Raport%20de%20activitate%202012.pdf, accessed 4 December 2013).

7. ANNEXES

ANNEX I. List of medicines included in the survey

Medicine	Strength	Dosage form	OB product	OB manufacturer	MSG product	MSG manufacturer
Acetylsalicylic acid	100 mg	cap/tab	Aspirin	Bayer	Thrombo ASS	Hemmeher
Amiodarone	200 mg	cap/tab	Cordarone	Sanofi	Miacardin	Arena
Amitriptyline	25 mg	cap/tab	Tryptizol	MSD	Amitriptylin	Zentiva
Amlodipine	5 mg	cap/tab	Norvasc	Pfizer	Normodipine	Gedeon Richter
Amoxicillin	250 mg	cap/tab	Amoxil	GSK	Amoxicilin	New Tone
Amoxicillin	125 mg/5 ml	suspension	Amoxil	GSK	Ospamox	Sandoz
Atenolol	50 mg	cap/tab	Tenormin	AstraZeneca	Atenolol	New Tone
Captopril	25 mg	cap/tab	Capoten	BMS	Kaptopril	KRKA
Carbamazepine	200 mg	SR tab	Tegretol SR	Novartis	Finlepsin 200 retard	AWD pharma
Cephalexin	250 mg	cap/tab	Keflex	Eli Lilly	Cefalexin	New Tone
Chlorpromazine	25 mg	cap/tab	Largactil	Sanofi-Aventis	Aminazin-Zdorovie	Zdorovie
Ciprofloxacin	500 mg	cap/tab	Ciproxin	Bayer	Ciprinol	KRKA
Clarithromycin	500 mg	tab SR	Klacid SR	Abbott	Fromilid Uno	KRKA
Clonazepam	2 mg	cap/tab	Rivotril	Roche	Clonazepam	Polfa
Clozapine	100 mg	cap/tab	Leponex	Novartis	Azaleptin	Organica
Co-trimoxazole	400+80 mg	cap/tab	Bactrim	Roche	Biseptol	Polfa
Diazepam	5 mg	cap/tab	Valium	Roche	Relium	Polfa
Diclofenac	50 mg	cap/tab	Voltaren	Novartis	Maxi-50	Plethico Pharm.
Digoxin	0.25 mg	cap/tab	Lanoxin	GSK	Digoxin	UCF Borsceagov
Enalapril	10 mg	cap/tab	Renitec	MSD	Berlipril 10	Berlin-Chemie
Enalapril	5 mg	cap/tab	Renitec	MSD	Enap	KRKA
Famotidine	40 mg	cap/tab	Pepcid	MSD	Quamatel	Gedeon Richter
Fluconazole	150 mg	cap/tab	Diflucan	Pfizer	Flucoral	Bilim Pharm.
Fluoxetine	20 mg	cap/tab	Prozac	Eli Lilly	Magrilan	Medochemie
Folic acid	1 mg	cap/tab	No OB		Acid folic	Uzina de vitamine
Furosemide	40 mg	cap/tab	Lasix	Sanofi-Aventis	Furosemid	Farmaco
Glibenclamide	5 mg	cap/tab	Daonil	HMR	Maninil 5	Berlin-Chemie
Hydrochlorothiazide	25 mg	cap/tab	Dichlotride	MSD	Hypothiazid	Chinoin Pharm.
Imipramine	25 mg	cap/tab	Tofranil	Novartis		
Isosorbide dinitrate	10 mg	cap/tab	Isordil	Wyeth	Nitrosorbid	Microhim
Levodopa+Carbidopa	250+25 mg	cap/tab	Sinemet	MSD	Nakom	Lek Pharm.
Lisinoprilum	10 mg	cap/tab	Zestrel	AstraZeneca	Diroton	Gedeon Richter
Loratadine	10 mg	cap/tab	Claritine	Schering Plough	Erolin	Egis Pharm.
Methotrexate	2.5 mg	cap/tab	Ledertrexate	Wyeth	Methotrexat Ebewe	EBEWE Pharma
Metronidazole	500 mg	cap/tab	Flagyl	Sanofi-Aventis	Metronidazol	Farmaprim
Omeprazole	20 mg	cap/tab	Losec	AstraZeneca	Omeprazole	Troge Medical
Paracetamol	500 mg	cap/tab	Panadol	GSK	Paracetamol	Farmaco
Phenoxymethyl penicillin	250 mg/5 ml	suspension	Abbocillin V	Abbott	Ospen	Sandoz
Prednisolone	5 mg	cap/tab	No OB		Prednisolon-Darnița	Darnița
Propranolol	10 mg	cap/tab	Inderal	AstraZeneca	Anaprilin-Zdorovie	Zdorovie
Ranitidine	150 mg	cap/tab	Zantac	GSK	Ulcoran	Eurofarmaco
Risperidone	2 mg	cap/tab	Risperdal	Janseen Cilag	Rispaxol	Grindek
Salbutamol	100 mcg/dose	inhaler	Ventoline	GSK	Salbutamol	GlaxoSmithKline
Simvastatin	20 mg	cap/tab	Zocor	MSD	Simvastol	Gedeon Richter
Sulphazaline	500 mg	cap/tab	Salazopyrin	Pfizer	Sulfasalazin EN	KRKA
Tramadol	50 mg	cap/tab	Tramal	Grünenthal	Tramadol	Universal-Pharm
Trifluoperazine	5 mg	cap/tab	Stelazine	GSK	Triphthazin-Zdorovie	Zdorovie
Trihexyphenidyl	2 mg	cap/tab	No OB		Cyclodol-Grindeks	Grindeks
Valproic acid	150 mg	cap/tab	Depakene	Sanofi	Convulex	Gerot Pharm.
Verapamil	40 mg	cap/tab	Isoptin	Abbott	Finoptin	Orion Corp

ANNEX II. Letter of endorsement[8]

Regarding: Medicine price and availability survey

It is hereby confirmed that Mr/Ms ..... will be undertaking a survey of medicine prices and availability in selected units according to the annex.

This requires the collection of price information at a sample of retail pharmacies and other medicine outlets, as well as the collection of information on price composition at different points in the supply chain, from manufacturer to consumer.

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

The Advisory Committee of the Ministry of Health guarantees that complete anonymity of individual pharmacies and medicine outlets will be assured for this project.

An appointment will be made with each pharmacy to be visited at a date and time convenient to staff.

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

Viorel SOLTAN
Vice-Minister of Health of the Republic of Moldova

8 Translated from the original.

ANNEX III.

Availability of medicines in the public and private sectors

Medicine	OB, public sector, %	MSG, public sector, %	LPG, public sector, %	OB, private sector, %	MSG, private sector, %	LPG, private sector, %
Acetylsalicylic acid	16.0	26.0	26.0	40.0	32.0	34.0
Amiodarone	68.0	6.0	48.0	66.0	2.0	52.0
Amitriptyline	0.0	38.0	40.0	0.0	56.0	56.0
Amlodipine/	6.0	82.0	90.0	14.0	68.0	76.0
Amoxicillin	0.0	36.0	76.0	0.0	30.0	78.0
Amoxicillin suspension	0.0	70.0	82.0	0.0	84.0	90.0
Atenolol	0.0	24.0	62.0	0.0	26.0	58.0
Captopril	0.0	40.0	62.0	0.0	76.0	88.0
Carbamazepine SL	0.0	46.0	48.0	6.0	50.0	52.0
Cephalexin	0.0	14.0	34.0	0.0	40.0	58.0
Chlorpromazine	0.0	28.0	28.0	0.0	24.0	24.0
Ciprofloxacin	0.0	46.0	62.0	0.0	66.0	86.0
Clarithromycin	2.0	50.0	50.0	10.0	54.0	54.0
Clonazepam	24.0	0.0	0.0	26.0	0.0	0.0
Clozapine	26.0	0.0	0.0	16.0	0.0	0.0
Co-trimoxazole	0.0	70.0	78.0	0.0	84.0	90.0
Diazepam	0.0	38.0	42.0	0.0	52.0	58.0
Diclofenac	18.0	24.0	34.0	44.0	56.0	74.0
Digoxin	0.0	62.0	84.0	0.0	68.0	80.0
Enalapril 10 mg	0.0	78.0	88.0	0.0	84.0	94.0
Enalapril 5 mg	0.0	80.0	86.0	0.0	86.0	92.0
Famotidine	0.0	32.0	44.0	0.0	66.0	82.0
Fluconazole	2.0	20.0	52.0	16.0	46.0	76.0
Fluoxetine	0.0	8.0	8.0	0.0	4.0	4.0
Folic acid	–	66.0	84.0	–	62.0	86.0
Furosemide	0.0	84.0	92.0	0.0	66.0	94.0
Glibenclamide	2.0	34.0	42.0	0.0	76.0	84.0
Hydrochlorothiazide	0.0	24.0	26.0	0.0	40.0	46.0
Imipramine	0.0	30.0	30.0	0.0	42.0	42.0
Isosorbide dinitrate	0.0	6.0	8.0	0.0	0.0	0.0
Levodopa+Carbidopa	0.0	42.0	42.0	0.0	36.0	36.0
Lisinopril	0.0	88.0	88.0	0.0	84.0	90.0
Loratadine	12.0	44.0	48.0	48.0	64.0	66.0
Methotrexate	0.0	44.0	46.0	0.0	32.0	36.0
Metronidazole	0	0.0	42.0	0	8.0	24.0
Omeprazole	0.0	60.0	90.0	0.0	76.0	100.0
Paracetamol	30.0	62.0	76.0	50.0	54.0	90.0
Phenoxymethylpenicillin	0.0	0.0	0.0	0.0	0.0	2.0
Prednisolone	–	58.0	58.0	–	52.0	52.0
Propranolol	0.0	54.0	54.0	0.0	52.0	56.0
Ranitidine	0.0	44.0	50.0	0.0	78.0	94.0
Risperidone	0.0	30.0	30.0	0.0	12.0	12.0
Salbutamol inhaler	44.0	86.0	86.0	48.0	80.0	80.0
Simvastatin	0.0	34.0	46.0	0.0	44.0	50.0
Sulfasalazine	0.0	44.0	44.0	0.0	46.0	46.0
Tramadol	0.0	16.0	28.0	2.0	10.0	32.0
Trifluoperazine	0.0	38.0	38.0	0.0	18.0	18.0
Trihexyphenidyl	–	44.0	44.0	–	50.0	50.0
Acid Valproic	0.0	2.0	6.0	0.0	2.0	4.0
Verapamil	0.0	30.0	36.0	4.0	48.0	50.0

ANNEX IV.

Prices (as MPRs) in the public and private sectors

Medicine	OB, public procure-ment	MSG, public procure-ment	LPG, public procure-ment	OB, public sector	MSG, public sector	LPG, public sector	OB, private sector	MSG, private sector	LPG, private sector
Acetylsalicylic acid	–	–	24.08	32.48	43.07	43.07	33.75	44.75	44.30
Acid Valproic	–	–	1.73	–	–	–	–	–	–
Amiodarone	–	–	1.04	2.87	–	2.03	2.99	–	2.09
Amitriptyline	–	6.35	6.35	–	6.20	6.20	–	6.57	6.39
Amlodipine	–	–	1.34	–	6.86	6.84	5.95	7.16	6.80
Amoxicillin	–	–	0.90	–	4.06	4.07	–	4.24	4.32
Amoxicillin suspension	–	–	1.69	–	8.16	6.17	–	8.48	8.15
Atenolol	–	–	2.12	–	5.45	5.22	–	5.76	5.44
Captopril	–	–	1.50	–	7.58	2.90	–	8.08	2.96
Carbamazepine SL	–	0.64	0.64	–	0.64	0.64	–	0.67	0.64
Cephalexin	–	–	0.44	–	2.28	2.16	–	2.40	2.26
Chlorpromazine	–	5.20	5.20	–	6.58	6.58	–	6.99	6.99
Ciprofloxacin	–	–	1.53	–	20.33	6.03	–	21.32	6.23
Clonazepam	0.40	–	–	0.45	–	–	0.46	–	–
Clozapine	4.38	–	–	4.43	–	–	4.79	–	–
Co-trimoxazole	–	–	2.13	–	12.87	6.12	–	13.79	4.72
Diazepam	–	–	2.77	–	16.62	4.94	–	12.81	5.28
Diclofenac	–	7.29	7.29	117.26	8.86	9.00	125.58	9.52	9.55
Digoxin	–	–	0.98	–	1.77	1.77	–	1.86	1.87
Enalapril 10 mg	–	–	1.37	–	8.74	6.27	–	9.21	6.86
Enalapril 5 mg	–	–	1.44	–	10.99	7.35	–	11.35	7.55
Famotidine	–	–	2.20	–	14.75	5.25	–	15.34	4.16
Fluconazole	–	–	6.24	–	82.33	33.33	107.67	84.00	35.83
Fluoxetine	–	17.22	17.22	–	23.12	23.12	–	–	–
Folic acid	–	–	6.59	–	14.83	10.99	–	15.23	14.53
Furosemide	–	2.36	2.36	–	3.07	3.07	–	3.15	3.09
Glibenclamide	–	5.31	5.31	–	8.11	7.71	–	8.24	6.48
Hydrochlorothiazide	–	31.90	31.90	–	33.52	31.24	–	37.06	37.22
Imipramine	–	3.67	3.67	–	4.42	4.42	–	4.65	4.65
Isosorbide dinitrate	–	–	–	–	–	0.89	–	–	–
Levodopa+Carbidopa	–	–	4.04	–	7.28	7.28	–	7.72	7.72
Lisinopril	–	–	0.76	–	5.53	3.90	–	5.70	4.27
Loratadine	–	–	1.39	14.16	7.90	7.80	14.86	8.39	8.01
Methotrexate	–	–	2.11	–	4.15	4.15		4.33	4.33
Metronidazole	–	–	22.44	–	–	24.16	55.53	20.37	24.66
Omeprazole	–	–	0.84	–	3.25	3.23	–	3.39	3.30
Paracetamol	–	2.24	2.24	10.84	4.04	4.03	11.45	4.14	4.14
Phenoxymethylpenicillin	–	–	–	–	–	–	–	–	–
Prednisolone	–	3.17	3.17		6.93	6.93	–	4.43	4.43
Propranolol	–	0.84	0.84	–	1.30	1.30	–	1.36	1.35
Ranitidine	–	–	1.48	–	4.06	3.56	–	4.24	3.09
Risperidone	–	1.67	1.67	–	7.04	7.04	–	7.25	7.25
Salbutamol inhaler	–	–	0.69	2.41	2.16	2.16	2.55	2.28	2.28
Simvastatin	–	–	3.38	–	9.53	8.12	–	9.83	6.25
Sulfasalazine	–	0.66	0.66	–	0.65	0.65	–	0.68	0.68
Tramadol	–	0.82	0.82	–	1.40	1.49	–	1.57	1.60
Trifluoperazine	–	1.37	1.37	–	2.01	2.01	–	2.05	2.05
Trihexyphenidyl	–	0.53	0.53	–	1.34	1.34	–	1.40	1.40
Valproic acid	–	–	1.73	–	–	–	–	–	–
Verapamil	–	–	1.25	–	3.22	3.21	–	3.26	3.18

ANNEX V. Patient prices in chain and independent pharmacies in the private sector

	OBs		MSGs		LPGs	
	Independent pharmacies	Chain pharmacies	Independent pharmacies	Chain pharmacies	Independent pharmacies	Chain pharmacies
Median MPR	11.53	11.30	6.18	6.43	4.60	4.56
25th percentile MPR	2.98	4.47	3.30	3.42	3.07	2.25
75th percentile MPR	34.14	23.74	9.24	9.83	7.64	5.73
Minimum MPR	0.46	2.53	0.67	0.67	0.65	0.59
Maximum MPR	129.19	122.70	85.24	83.85	45.19	43.81
No. of medicines	9	7	40	37	42	40

ANNEX VI. Patient prices in private pharmacies owned by pharmacists and non-pharmacists

	OBs		MSGs		LPGs	
	Owned by pharmacist	Owned by non-pharmacist	Owned by pharmacist	Owned by non-pharmacist	Owned by pharmacist	Owned by non-pharmacist
Median MPR	13.00	8.70	6.77	6.71	4.49	4.66
25th percentile MPR	2.85	3.45	3.65	3.36	3.11	2.48
75th percentile MPR	52.57	28.79	9.39	10.22	7.11	6.91
Minimum MPR	0.46	0.47	0.65	0.68	0.55	0.67
Maximum MPR	125.60	125.58	85.04	84.00	43.05	44.52
No. of medicines	8	10	38	40	40	42

ANNEX VII. Patient prices across regions, public and private sectors

	Public sector									Private sector								
	OBs			MSGs			LPGs			OBs			MSGs			LPGs		
	N	C	S	N	C	S	N	C	S	N	C	S	N	C	S	N	C	S
Median MPR	3.65	4.43	2.87	6.20	6.93	4.81	5.42	4.42	4.34	13.03	8.66	14.80	6.83	6.93	7.54	4.51	4.64	5.33
25th percentile MPR	–	2.64	–	3.20	3.59	3.09	3.16	2.66	3.11	5.13	3.48	–	3.38	3.77	4.01	2.81	2.98	3.15
75th percentile MPR	–	21.66	–	8.95	9.25	8.59	7.79	7.12	7.69	29.20	28.82	–	9.65	9.33	9.08	6.87	7.23	8.18
Minimum MPR	2.42	0.45	–	0.65	0.64	0.65	0.64	0.64	0.65	2.61	0.46	2.88	0.64	0.67	1.30	0.50	0.67	0.73
Maximum MPR	12.05	116.56	–	35.84	82.77	20.34	39.59	43.08	41.12	131.54	126.02	121.93	85.04	84.00	20.62	44.28	44.30	39.39
No. of medicines	4	7	1	37	39	18	40	43	26	6	10	3	38	39	24	40	42	28

Notes. N: North; C: Central; S: South.

ANNEX VIII. Patient prices in urban and rural areas, public and private sectors

	OBs				MSGs				LPGs			
	Public sector		Private sector		Public sector		Private sector		Public sector		Private sector	
	Urban areas	Rural areas	Urban areas	Rural areas	Urban areas	Rural areas	Urban areas	Rural areas	Urban areas	Rural areas	Urban areas	Rural areas
Median MPR	7.63	2.87	8.68	11.45	6.20	5.53	6.58	7.53	4.93	5.01	4.34	5.50
25th percentile MPR	2.76	–	3.47	2.88	3.20	3.64	3.35	4.26	2.84	3.12	2.62	3.31
75th percentile MPR	18.65	–	29.02	14.92	8.85	8.73	9.52	12.12	7.16	7.94	7.09	8.30
Minimum MPR	0.45	–	0.46	2.48	0.64	0.65	0.67	1.36	0.64	0.65	0.64	1.28
Maximum MPR	116.56	–	125.58	124.78	82.62	20.33	85.04	82.22	43.04	35.69	44.75	42.82
No. of medicines	8	1	10	5	41	23	41	28	43	30	43	33

ANNEX IX. Medicine price components

Pharmacy mark-ups listed in the table below are applied to the wholesale procurement price (rather than the wholesale selling price).

	Mark-up (%)	Cost (MDL)	Contribution to final price (%)
Public sector, urban, imported, generic loratadine tablets 10 mg x 10			
Stage 1 CIF	–	20.08	66.13
Stage 2 Landed costs[1]	0.42	0.08	0.28
Stage 3 Wholesaler mark-up	14.5	2.92	9.63
Stage 4 Pharmacy mark-up	24.94	5.03	16.56
Stage 5 VAT	8	2.25	7.41
Total	*51.23*	*30.37*	
Private sector, urban, imported, generic loratadine tablets 10 mg x 30			
Stage 1 CIF	–	43.35	66.85
Stage 2 Landed costs	0.43	0.19	0.29
Stage 3 Wholesaler mark-up	14.97	6.52	10.05
Stage 4 Pharmacy mark-up	22.95	9.99	15.41
Stage 5 VAT	8	4.80	7.41
Total	*49.59*	*64.85*	
Private sector, rural, imported, generic loratadine tablets 10 mg x 10			
Stage 1 CIF	–	19.40	69.35
Stage 2 Landed costs	0.42	0.08	0.29
Stage 3 Wholesaler mark-up	14.87	2.90	10.36
Stage 4 Pharmacy mark-up	18.08	3.52	12.59
Stage 5 VAT	8	2.07	7.41
Total	*44.19*	*27.97*	
Private sector, urban, imported, OB, loratadine tablets 10 mg x 10			
Stage 1 CIF	–	26.70	66.91
Stage 2 Landed costs	0.41	0.11	0.27
Stage 3 Wholesaler mark-up	14.97	4.01	10.06
Stage 4 Pharmacy mark-up	22.85	6.12	15.35
Stage 5 VAT	8	2.96	7.41
Total	*49.45*	*39.90*	
Public sector, urban, imported, OB, loratadine tablets 10 mg x 10			
Stage 1 CIF	–	26.29	67.07
Stage 2 Landed costs	0.41	0.11	0.28
Stage 3 Wholesaler mark-up	14.97	3.95	10.08
Stage 4 Pharmacy mark-up	22.51	5.94	15.16
Stage 5 VAT	8	2.90	7.41
Total	*49.09*	*39.20*	
Private sector, rural, imported, OB, loratadine tablets 10 mg x 10			
Stage 1 CIF	–	26.70	65.92
Stage 2 Landed costs	0.41	0.11	0.27
Stage 3 Wholesaler mark-up	14.97	4.01	9.91
Stage 4 Pharmacy mark-up	24.92	6.68	16.49
Stage 5 VAT	8	3.00	7.41
Total	*51.69*	*40.50*	

	Mark-up (%)	Cost (MDL)	Contribution to final price (%)
Public sector, rural, imported, OB, loratadine tablets 10 mg x 10			
Stage 1 CIF	–	26.70	70.99
Stage 2 Landed costs	0.41	0.11	0.29
Stage 3 Wholesaler mark-up	14.97	4.01	10.67
Stage 4 Pharmacy mark-up	14.94	4.00	10.65
Stage 5 VAT	8.0	2.79	7.41
Total	*40.87*	*37.61*	
Private sector, urban, imported, generic, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	31.13	67.97
Stage 2 Landed costs	0.40	0.13	0.27
Stage 3 Wholesaler mark-up	14.97	4.68	10.22
Stage 4 Pharmacy mark-up	20.71	6.47	14.13
Stage 5 VAT	8.0	3.39	7.41
Total	*47.12*	*45.80*	
Public sector, rural, imported, generic, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	31.27	70.99
Stage 2 Landed costs	0.40	0.13	0.29
Stage 3 Wholesaler mark-up	14.97	4.70	10.67
Stage 4 Pharmacy mark-up	14.93	4.69	10.64
Stage 5 VAT	8.0	3.26	7.41
Total	*40.86*	*44.05*	
Public sector, urban, imported, generic, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	31.33	70.99
Stage 2 Landed costs	0.40	0.13	0.29
Stage 3 Wholesaler mark-up	14.97	4.71	10.67
Stage 4 Pharmacy mark-up	23.05	7.25	10.64
Stage 5 VAT	8.0	3.47	7.41
Total	*49.66*	*46.88*	
Private sector, rural, imported, generic, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	30.55	65.93
Stage 2 Landed costs	0.40	0.12	0.27
Stage 3 Wholesaler mark-up	14.97	4.52	9.91
Stage 4 Pharmacy mark-up	24.91	7.52	16.49
Stage 5 VAT	8.0	3.38	7.41
Total	*51.68*	*45.58*	
Private sector, rural, imported, OB, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	35.44	65.90
Stage 2 Landed costs	0.41	0.14	0.27
Stage 3 Wholesaler mark-up	14.97	5.33	9.91
Stage 4 Pharmacy mark-up	24.96	8.88	16.52
Stage 5 VAT	8.0	3.96	7.41
Total	*51.74*	*53.77*	

	Mark-up (%)	Cost (MDL)	Contribution to final price (%)
Private sector, urban, imported, OB, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	34.26	65.93
Stage 2 Landed costs	0.41	0.14	0.27
Stage 3 Wholesaler mark-up	14.97	5.15	9.91
Stage 4 Pharmacy mark-up	24.91	8.57	16.49
Stage 5 VAT	8.0	3.85	7.41
Total	*51.68*	*52.00*	
Public sector, rural, imported, OB, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	34.28	70.99
Stage 2 Landed costs	0.41	0.14	0.29
Stage 3 Wholesaler mark-up	14.97	5.15	10.67
Stage 4 Pharmacy mark-up	14.93	5.14	10.64
Stage 5 VAT	8.0	3.58	7.41
Total	*40.86*	*48.29*	
Public sector, urban, imported, OB, salbutamol inhaler 100 mcg/dose x 200 doses			
Stage 1 CIF	–	35.81	66.94
Stage 2 Landed costs	0.41	0.15	0.27
Stage 3 Wholesaler mark-up	14.97	5.36	10.06
Stage 4 Pharmacy mark-up	22.79	8.20	15.32
Stage 5 VAT	8.0	3.96	7.41
Total	*49.39*	*53.50*	
Public sector, urban, locally manufactured, generic, paracetamol 500 mg tab x 20			
Stage 1 MSP	–	1.53	67.30
Stage 2 Landed costs	0		0
Stage 3 Wholesaler mark-up	14.97	0.23	10.07
Stage 4 Pharmacy mark-up	22.61	0.35	15.22
Stage 5 VAT	8.0	0.17	7.41
Total	*48.59*	*2.27*	
Public sector, rural, locally manufactured, generic, paracetamol 500 mg tab x 20			
Stage 1 MSP	–	1.53	71.39
Stage 2 Landed costs	0		0
Stage 3 Wholesaler mark-up	14.97	0.23	10.69
Stage 4 Pharmacy mark-up	14.73	0.23	10.52
Stage 5 VAT	8.0	0.16	7.41
Total	*40.08*	*2.14*	
Private sector, rural, locally manufactured, generic, paracetamol 500 mg tab x 20			
Stage 1 MSP	–	1.53	66.42
Stage 2 Landed costs	0		0
Stage 3 Wholesaler mark-up	14.97	0.23	9.94
Stage 4 Pharmacy mark-up	24.43	0.37	16.23
Stage 5 VAT	8.0	0.17	7.41
Total	*50.55*	*2.30*	

	Mark-up (%)	Cost (MDL)	Contribution to final price (%)
Private sector, urban, locally manufactured, generic, paracetamol 500 mg tab x 20			
Stage 1 MSP	–	1.53	66.42
Stage 2 Landed costs	0		0
Stage 3 Wholesaler mark-up	14.97	0.23	9.94
Stage 4 Pharmacy mark-up	24.43	0.37	16.23
Stage 5 VAT	8.0	0.17	7.41
Total	*50.55*	*2.30*	
Public sector, rural, imported, OB, paracetamol 500 mg tab x 12			
Stage 1 CIF	–	4.90	71.13
Stage 2 Landed costs	0.41	0.02	0.29
Stage 3 Wholesaler mark-up	14.97	0.74	10.69
Stage 4 Pharmacy mark-up	14.67	0.72	10.48
Stage 5 VAT	8.0	0.51	7.41
Total	*40.59*	*6.89*	
Public sector, urban, imported, OB, paracetamol 500 mg tab x 12			
Stage 1 CIF	–	4.90	67.13
Stage 2 Landed costs	0.41	0.02	0.28
Stage 3 Wholesaler mark-up	14.97	0.74	10.09
Stage 4 Pharmacy mark-up	22.39	1.10	15.09
Stage 5 VAT	8.0	0.54	7.41
Total	*48.96*	*7.30*	
Private sector, urban, imported, OB, paracetamol 500 mg tab x 12			
Stage 1 CIF	–	4.79	67.13
Stage 2 Landed costs	0.43	0.03	0.29
Stage 3 Wholesaler mark-up	14.97	0.72	10.09
Stage 4 Pharmacy mark-up	22.37	1.08	15.08
Stage 5 VAT	8.0	0.53	7.41
Total	*48.97*	*7.14*	
Private sector, rural, Imported, OB, paracetamol 500 mg tab x 12			
Stage 1 CIF	–	4.79	66.02
Stage 2 Landed costs	0.43	0.03	0.28
Stage 3 Wholesaler mark-up	14.97	0.72	9.93
Stage 4 Pharmacy mark-up	24.68	1.19	16.36
Stage 5 VAT	8.0	0.54	7.41
Total	*51.47*	*7.26*	
Public sector, rural, imported, generic, diclofenac 50 mg tab x 30			
Stage 1 CIF	–	9.43	70.97
Stage 2 Landed costs	0.40	0.04	0.29
Stage 3 Wholesaler mark-up	14.97	1.42	10.67
Stage 4 Pharmacy mark-up	14.98	1.42	10.67
Stage 5 VAT	8.0	0.98	7.41
Total	*40.91*	*13.29*	

	Mark-up (%)	Cost (MDL)	Contribution to final price (%)
Private sector, rural, imported, generic, diclofenac 50 mg tab x 30			
Stage 1 CIF	–	9.43	65.89
Stage 2 Landed costs	0.40	0.04	0.27
Stage 3 Wholesaler mark-up	14.97	1.42	9.90
Stage 4 Pharmacy mark-up	25.00	2.37	16.54
Stage 5 VAT	8.0	1.06	7.41
Total	*51.78*	*14.31*	
Private sector, rural, imported, OB, diclofenac 50 mg tab x 20			
Stage 1 CIF	–	92.94	65.90
Stage 2 Landed costs	0.42	0.38	0.28
Stage 3 Wholesaler mark-up	14.97	13.97	9.91
Stage 4 Pharmacy mark-up	24.95	23.28	16.51
Stage 5 VAT	8.0	10.45	7.41
Total	*51.75*	*141.03*	
Private sector, urban, imported, OB, diclofenac 50 mg tab x 20			
Stage 1 CIF	–	85.49	66.85
Stage 2 Landed costs	0.42	0.36	0.28
Stage 3 Wholesaler mark-up	14.97	12.85	10.05
Stage 4 Pharmacy mark-up	22.96	19.71	15.41
Stage 5 VAT	8.0	9.47	7.41
Total	*49.59*	*127.88*	
Public sector, urban, imported, OB, diclofenac 50 mg tab x 20			
Stage 1 CIF	–	85.49	67.16
Stage 2 Landed costs	0.42	0.36	0.28
Stage 3 Wholesaler mark-up	14.97	12.85	10.10
Stage 4 Pharmacy mark-up	22.32	19.16	15.05
Stage 5 VAT	8.0	9.43	7.41
Total	*48.89*	*127.29*	
Public sector, rural, imported, OB, diclofenac 50 mg tab x 20			
Stage 1 CIF	–	78.65	70.92
Stage 2 Landed costs	0.45	0.35	0.32
Stage 3 Wholesaler mark-up	14.97	11.83	10.66
Stage 4 Pharmacy mark-up	15.00	11.85	10.69
Stage 5 VAT	8.0	8.21	7.41
Total	*41.00*	*110.89*	
Private sector, urban, imported, generic, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	44.07	66.88
Stage 2 Landed costs	0.40	0.18	0.27
Stage 3 Wholesaler mark-up	14.97	6.62	10.05
Stage 4 Pharmacy mark-up	22.93	10.15	15.40
Stage 5 VAT	8.0	4.88	7.41
Total	*49.53*	*65.90*	

	Mark-up (%)	Cost (MDL)	Contribution to final price (%)
Public sector, urban, imported, generic, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	44.07	65.90
Stage 2 Landed costs	0.40	0.18	0.26
Stage 3 Wholesaler mark-up	14.97	6.62	9.90
Stage 4 Pharmacy mark-up	24.98	11.05	16.52
Stage 5 VAT	8.0	4.95	7.41
Total	*51.75*	*66.88*	
Private sector, rural, imported, generic, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	44.43	65.91
Stage 2 Landed costs	0.40	0.18	0.27
Stage 3 Wholesaler mark-up	14.97	6.68	9.91
Stage 4 Pharmacy mark-up	24.94	11.13	16.51
Stage 5 VAT	8.0	4.99	7.41
Total	*51.71*	*67.41*	
Public sector, rural, imported, generic, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	44.07	70.96
Stage 2 Landed costs	0.40	0.18	0.28
Stage 3 Wholesaler mark-up	14.97	6.62	10.67
Stage 4 Pharmacy mark-up	14.99	6.63	10.68
Stage 5 VAT	8.0	4.60	7.41
Total	*40.92*	*62.11*	
Private sector, rural, imported, OB, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	56.86	65.92
Stage 2 Landed costs	0.40	0.23	0.26
Stage 3 Wholesaler mark-up	14.97	8.55	9.91
Stage 4 Pharmacy mark-up	24.93	14.23	16.50
Stage 5 VAT	8.0	6.39	7.41
Total	*51.70*	*86.26*	
Public sector, rural, imported, OB, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	65.09	70.66
Stage 2 Landed costs	0.83	0.54	0.59
Stage 3 Wholesaler mark-up	14.97	9.83	10.67
Stage 4 Pharmacy mark-up	14.99	0.84	10.68
Stage 5 VAT	8.0	6.39	7.41
Total	*41.53*	*92.12*	
Public sector, urban, imported, OB, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	69.25	67.94
Stage 2 Landed costs	0.85	0.59	0.58
Stage 3 Wholesaler mark-up	14.97	10.45	10.26
Stage 4 Pharmacy mark-up	20.16	14.08	13.81
Stage 5 VAT	8.0	7.55	7.41
Total	*47.18*	*101.92*	
Private sector, urban, imported, OB, fluconazole 150 mg cap x 1			
Stage 1 CIF	–	56.86	67.73
Stage 2 Landed costs	0.40	0.23	0.27
Stage 3 Wholesaler mark-up	14.97	8.55	10.18
Stage 4 Pharmacy mark-up	21.20	12.10	14.42
Stage 5 VAT	8.0	6.22	7.41
Total	*47.65*	*83.96*	

ANNEX X. Private sector patient prices in the Republic of Moldova and selected European countries

Medicine	Republic of Moldova		Bulgaria		Germany		Hungary		Italy		Lithuania		Romania	
	OB	LPG	OB	LPG	OB	LPG	OB	LPG	OB	LPG	OB	LPG	OB	LPG
Amiodarone 200 mg	0.12	0.09	0.15	0.11	1.33	1.01	0.10	–	0.27	0.25	0.13	0.1	0.13	0.08
Amlodipine 5 mg	0.13	0.16	0.18	0.06	0.91	0.22	–	0.04	0.20	0.13	0.15	0.08	0.15	0.09
Atenolol 50 mg	–	0.04	–	0.04	–	0.4	–	0.03	–	0.11	–	0.05	–	0.04
Ciprofloxacin 500 mg	–	0.14	–	0.27	–	1.32	–	0.34	–	1.13	–	0.34	–	0.15
Clarithromycin SR 500 mg	2.72	1.2	2.14	1.11	3.38	–	–	–	–	–	2.11	0.81	1.66	0.84
Diazepam 5 mg	–	0.02	–	0.05	–	0.5	–	–	–	–	–	0.02	–	–
Diclofenac 50 mg	0.39	0.03	–	0.04	0.40	0.23	0.24	0.04	0.15	0.13	0.29	0.04	0.08	0.03
Enalapril 10 mg		0.08	–	0.05	–	0.23	–	0.06	–	–	–	–	–	0.04
Fluconazole 150 mg	5.30	1.83	6.33	2.06	–	13.3	4.66	3.76	5.35	4.57	4.87	3.71	5.73	–
Fluoxetine 20 mg	–	0.21	–	0.12	–	0.38	–	0.25	–	0.22	–	0.13	–	0.13
Furosemide 40 mg	–	0.01	–	0.02	–	0.52	–	0.06	–	–	–	0.03	–	0.02
Glibenclamide 5 mg	–	0.02	–	0.02	–	0.16	–	–	–	0.1	–	–	–	0.01
Loratadine 10 mg	0.24	0.14	–	0.15	–	0.27	–	0.11	–	0.26	0.39	0.18	–	0.12
Methotrexate 2.5 mg	–	0.22	–	0.16	–	0.56	–	0.05	–	0.2	–	0.12	–	0.26
Metronidazole 500 mg	0.28	0.13	–	0.28	0.81	–	–	0.25	–	–	–	0.11	–	–
Omeprazole 20 mg	–	0.07	–	0.17	–	0.61	–	0.46	–	0.43	–	0.2	–	0.13
Paracetamol 500 mg	0.04	0.01	–	–	–	0.09	–	0.02	0.53	0.15	0.05	0.15	–	0.1
Ranitidine 150 mg	–	0.05	–	0.07	–	0.53	–	0.06	–	0.21	–	0.07	–	0.05
Salbutamol 100 mcg, 200-dose inhaler x1	3.19	2.93	3.13		15.90	14.28	2.93	2.7	–	–	2.78	2.77	2.4	1.56
Simvastatin 20 mg	–	0.28	–	0.14	–	0.42	–	0.23	–	0.2	–	0.27	–	0.07
Tramadol 50 mg	–	0.10	–	0.12	–	0.41	–	0.08	–	0.23	–	0.06	–	0.07
Valproic acid 150 mg	–	0.06	–	–	–	0.26	–	0.04	–	–	–	0.06	–	0.07

Notes. All prices are in euro for a unit (tab, mg, ml) except in the case of salbutamol, for which the price is for 1 inhaler containing 200 doses. The Moldovan price is the median unit price across the private sector pharmacies that were sampled. Where prices of multiple packs of a product were available in comparator countries, the price of the pack size closest to the Moldovan pack size was chosen. Exchange rate: €1 = MDL 15.6831.[9] Comparator prices in red are lower than Moldovan prices. Dosage form is tab/cap unless otherwise specified.

9 Oanda currency conversion, 1 October 2011.

ANNEX XI. Manufacturers' ex-factory prices in the Republic of Moldova and selected European countries

Medicine	Product	Manufacturer	Republic of Moldova	Bulgaria	Germany	Hungary	Italy	Lithuania	Romania
Amiodarone 200 mg	Cordarone	Sanofi	0.087	0.094	0.655	0.073	0.164	0.094	0.084
	Amiokordin	KRKA	0.062	–	–	–	–	0.075	–
Amlodipine 5 mg	Norvasc	Pfizer	0.096	0.115	0.449	–	0.12	0.112	0.099
	Amlodipina/Asomex-5	Actavis	0.057	–	–	–	–	–	0.056
Amoxicillin 125 mg / 5 ml susp. 60 ml.	Ospamox	Biochemie	1.176	–	–	–	–	–	0.68
Clarithromycin SR 500 mg	Fromilid Uno	KRKA	0.848	0.707	–	–	–	–	–
	Klacid SR	Abbott	1.589	1.396	–	–	–	1.396	1.116
Ciprofloxacin 500 mg	Alvebar/Ciprolet	Dr Reddy's	0.113	–	–	–	–	–	0.096
Diazepam 5 mg	Diazepeks	Grindeks	0.016	–	–	–	–	0.013	–
Diclofenac 50 mg	Voltaren	Novartis	0.284	–	0.161	0.169	0.094	0.178	0.049
	Voltaren Rapid	Novartis	0.23	–	–	–	–	–	0.035
	Diclofenac Hexal/ Diclac	Hexal	0.043	–	–	–	–	0.069	–
Enalapril 10 mg	EnaHexal	Hexal	0.045	–	–	–	–	0.029	–
Fluconazole 150 mg	Diflucan	Pfizer	3.84	4.03	–	3.39	3.24	3.0	3.72
Fluoxetine 20 mg	Magrilan	Medochemie	0.148	–	–	–	–	–	0.087
Glibenclamide 5 mg	Maninil	Berlin chemie	0.015	0.01	0.056	–	–	–	–
Loratadine 10 mg	Erolin	Egis	0.095	–	–	0.092	–	–	–
	Claritine	Schering	0.174	–	–	–	–	0.32	–
Methotrexate 2.5 mg	Trexan/Methotrexate Orion	Orion	0.047	–	–	0.0388	–	0.092	–
	Methotrexate Ebewe	Ebewe	0.156	0.1	–	–	–	–	–
Paracetamol 500 mg	Panadol	GSK	0.026	–	–	–	0.318	0.027	–
Ranitidine 150 mg	Ranisan	Pro Med CS	0.041	–	–	–	–	0.048	–
	Histac	Ranbaxy	0.032	–	–	–	–	0.058	–
Salbutamol 100 mc/dose, 200-dose inhaler	Ventolin	GSK	2.26	–	–	2.13	–	1.91	1.56
	Salbutamol	GSK	1.994	1.99	–	–	–	–	–
Simvastatin 20 mg	Simvastol/Zeplan	Gedeon Richter	0.299	0.09	–	–	–	–	0.044
Tramadol 50 mg	Tramadol KRKA	KRKA	0.087	–	–	–	–	0.044	–
	Tralgit	Zentiva	0.075	–	–	–	–	–	0.043
Valproic acid 150 mg	Convulex	Gerot	0.032	–	–	–	–	0.043	–
	Orfiril	Desitin	0.051	–	–	–	–	–	0.043

Notes. All prices are in euro for a unit (tab, mg, ml) except in the case of salbutamol, for which the price is for 1 inhaler containing 200 doses and amoxicillin suspension which is for 60 mL. Moldovan prices were obtained from the National Catalogue Medicine Prices for Manufacturers *(7)*, current at the time of the survey. Exchange rate: €1 = MDL 15.6831.[10] Comparator prices in red are lower than Moldovan prices. Dosage form is tab/cap unless otherwise specified.

10 Oanda currency conversion, 1 October 2011.

The WHO Regional Office for Europe

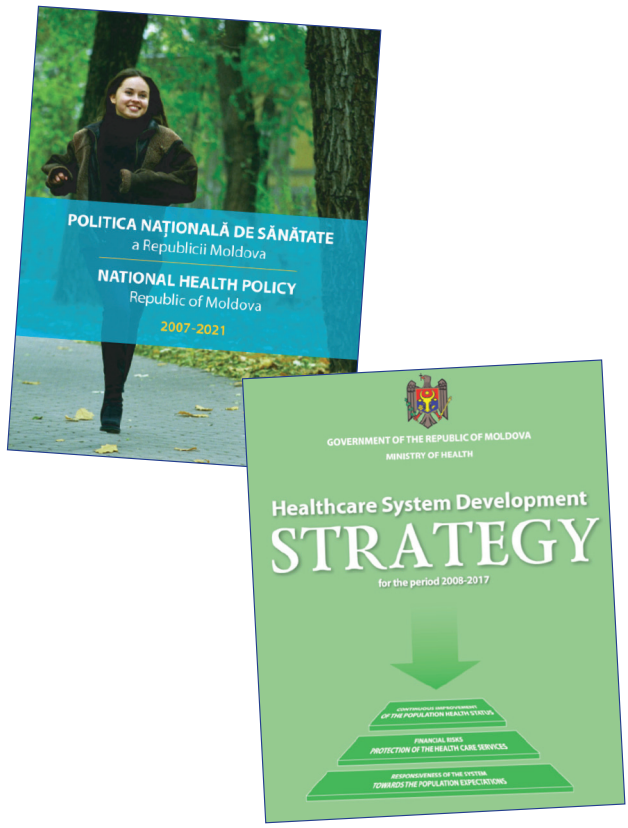
The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
The former Yugoslav Republic of Macedonia
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

Original: ENGLISH

The policy papers series aims to strengthen the health system



WHO Regional Office for Europe
UN City, Marmorvej 51
DK-2100 Copenhagen Ø Denmark
Tel.: +45 45 33 70 00; Fax: +45 45 33 70 01
E-mail: postmaster@euro.who.int