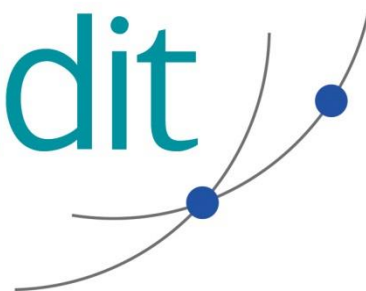


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AUDIT & TAX SERVICES



## **Research report**

*Assessment of the cost efficiency of the public procurement of medicines and related medical products for Ukraine's 2015 state budget by the United Nations Development Programme in Ukraine*

Limited Liability Company  
*Audit Company «P.S.P. Audit»*

Kyiv – 2017

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## 1. General information

### Government regulations

Legal regulation of the state system of medicines procurement in 2014-2015 was carried out in accordance with Law of Ukraine 1197-18 “On State Procurement” of 4 October 2014 (hereafter Law 1197-18) and Law of Ukraine 4851-17 “On the Specifics of Procurement in Certain Fields of Economic Activity” of 24 May 2012 (hereinafter Law 4851-17), which establish the legal and economic principles for procurement by parties conducting their activities in areas specified by the said Law.

In order to ensure effective and transparent procurement, develop a competitive environment for public procurement, prevent corruption in this area and develop fair competition, Law of Ukraine 922-19 “On Public Procurement” of 25 December 2015 (hereafter Law 922-19) was put into effect from 1 April 2016 for central executive authorities and customers in certain fields of management, and from 1 August 2016 for all customers. Since the entry into force of Law 922-19, Law 1197-18 and Law 4851-17 have lapsed.

Law 922-19 establishes the legal and economic principles for the procurement of goods, works and services to meet the needs of the state and territorial communities.

In order to eliminate risks of corruption when purchasing medicines and medical products using state budgetary funds, and to ensure the timeliness and predictability of the supply of medicines and medical products to healthcare institutions, changes were made by Law of Ukraine 269-8 “On Amendments to Certain Laws of Ukraine on Ensuring Timely Access of Patients to Necessary Medicines and Medical Products through Public Procurement with the Involvement of Specialized Organizations that Conduct Procurement” of 19 March 2015 (hereafter Law 269-8).

These changes include the provision that goods and services subject to procurement will be purchased in accordance with procurement agreements concluded by the Ministry of Health of Ukraine (hereafter the MoH) with specialized organizations, in accordance with the rules and procedures established by these organizations, taking into account the procedure established by the Cabinet of Ministers of Ukraine. The norm specified in Law 269-8 will be in force until 31 March 2019.

The Law of Ukraine “On Public Procurement” stipulates that specialized procurement organizations include specialized funds, organizations and mechanisms of the United Nations, the International Dispensary Association, the Crown Agents, The Global Drug Facility, and the Partnership for Supply Chain Management, which provide governments and central government bodies with procurement services for medicines, medical products and related services.

The scope of Law 922-19 does not apply to procurement of goods and services under procurement agreements concluded between the central executive authority of Ukraine and specialized procurement organizations to ensure the creation and implementation of public health policy. Such goods, works and services are procured in accordance with the rules and

procedures established by the relevant specialized organizations that conduct the purchases, following the procedure established by the Cabinet of Ministers of Ukraine

Procedures to purchase medicinal products and medical products that involve specialized organizations are regulated by Cabinet of Ministers of Ukraine (hereafter the Cabinet of Ministers) Resolution 622 “Certain Issues of the State Procurement of Medicines and Medical Products with the Involvement of Specialized Procurement Organizations” of 22 July 2015. This Resolution establishes the following:

- The criteria for selecting specialized organizations to make purchases; and
- The obligation under Law 269-8 to disclose all information on the state procurement of goods and services that involve specialized procurement organizations on the Ministry of Health’s official website and the web portal of the authorized body for public procurement.

In addition, in order to speed up the procurement procedure and provide patients with necessary medicines in a timely manner, the Cabinet of Ministers adopted legislation to simplify the procedure for state registration of medicines procured with the involvement of international organizations by introducing/revising the Law of Ukraine “On Medicines”, Cabinet of Ministers Resolution 376 of 26 May 2005 and MoH Decree 721 of 3 November 2015. The MoH performs the state registration of medicines procured by international organizations pursuant to applications and subject to opinions from the MoH State Expert Centre (hereafter the Centre), drawn up following expert examination of the registration materials for their authenticity under a procedure specified by the MoH.

In order to simplify procurement of medical products, the Cabinet of Ministers adopted Resolution 1163 of 30 December 2015. According to this Resolution, in the period until 31 March 2019, it is permissible not to comply with certain requirements of the Technical Regulations on Medical Products approved by Cabinet of Ministers Resolution 753 of 2 October 2013, if the designated conformity assessment body recognises the assessment results of foreign accredited conformity assessment bodies, in accordance with Law of Ukraine 124-8 “On Technical Regulations and Conformity Assessment” of 15 January 2015.

## **Taxation**

Sales of medicines and other medical products are taxed in accordance with the Tax Code of Ukraine, Law 2755-6 of 2 December 2010 (hereafter the Tax Code). According to Article 193(1) of the Tax Code, the following transactions are subject to value-added tax (hereafter VAT) at a rate of 7 per cent:

- supply on the customs territory of Ukraine of medicines authorized for production and use in Ukraine and included in the State Medicines Register, as well as medical products in the list approved by the Cabinet of Ministers of Ukraine; and
- delivery to and supply within the customs territory of Ukraine of medicines, medical products and/or medical equipment authorized for use in the framework of clinical trials, permission for which was provided by the central executive body responsible for state policy in the field of healthcare.

At the same time, from 1 May 2015, according to Article 38 in Section 2 of the Transitional Statements of the Tax Code, until 31 March 2019 there is temporary VAT exemption on imports into the customs territory of Ukraine of medicinal products on the State Medicines Register, medical products included in the State Register of medical equipment and medical products and/or put into circulation in accordance with legislation in the field of technical regulation and conformity assessment, and operations making the initial supply of such medicines or medical products to the customs territory of Ukraine.

VAT exemption applies if the import and/or supply is carried out on the basis of contracts with specialized procurement organizations, the list of which is determined by Law 1197-178 and when implementing agreements between the central executive body of Ukraine that creates and implements state policy in the field of healthcare and the relevant specialized procurement organization, conducting procurement in the framework of budget programmes to provide medical supplies for state programmes and/or complex programme measures in the field of healthcare.

The list of medicines and medical products procured on the basis of procurement agreements with specialized procurement organizations and the procedure for importing, supplying and using medicines and medical products exempted from VAT under this paragraph is set by the Cabinet of Ministers of Ukraine.

The aforementioned exemptions from VAT will only affect the scope of public procurement involving the specialized organizations and will not apply to products that are not included in the list of medicines and medical products to be procured by specialized organizations to implement budget programmes on the basis of agreements concluded between them and the Ministry of Health of Ukraine.

### **International cooperation**

In 2015, under national legislation, the MoH began purchasing medicines and medical products through international organizations.

In 2015-2016, using 2015 state budgetary funds, the UN International Children's Fund (UNICEF Ukraine), the United Nations Development Programme (UNDP) and Crown Agents (the British Royal Agency), conducted government procurement in the areas of child and adult oncology, child and adult hepatitis, childhood haemophilia, tuberculosis, orphan diseases, immune prophylaxis, antiretroviral therapy and others.

On transferring procurement functions to specialized organizations, the MoH requested UNDP to assist with the procurement with public funds of medicines and medical devices. In October and December 2015 UNDP and the MoH signed two procurement contracts.

### **Objectives of and organization conducting the study**

UNDP has entered into an agreement with LLC Audit Company “P.S.P. Audit” (hereafter the Auditor) to assess the cost-efficiency of the centralized procurement of medicines and other medical products for the 2015 budget, as implemented by UNDP Ukraine.

In particular, the Auditor was instructed to compare the total budgetary expenditures (unit costs, logistics and administrative costs, monetary savings or losses, VAT, and other UNDP expenditure) in the 2015 budget procurement cycle with the expenses for a similar set of goods purchased by the Ministry of Health, taking into account exchange rate fluctuations in the reference period.

“The LLC Audit Company "P.S.P. Audit was contracted by UNDP for this assignment based on the following considerations:

- The Auditor is accredited with the Audit Chamber of Ukraine (UBA) and has been officially operating in the Ukrainian market since 2009. The company provides audit services, as well as services in the fields of accounting and financial consulting.
- The Auditor is part of MGI Worldwide, an international network of audit, tax, accounting and consulting companies (<http://www.mgiworld.com>).
- The MGI Worldwide network has 260 offices in more than 80 countries and 5,000 professional staff and is in the world’s top-20 ranked Accounting Networks and Associations.

## 2. Methodology for cost-efficiency assessment

### General approach to assessment

This assessment of UNDP's procurement efficiency with 2015 budgetary funds is based on an evaluation of the money spent, the cost per unit, and the current volume of savings compared to previous procurement of medicines and medical products for MoH state programmes (2013 and 2014).

The prices for medicines and medical products procured in 2013 and 2014 by the MoH were taken as the basis for efficiency calculations.

In the absence of equivalent prices for purchases by the MoH, the following were used for comparison:

1. Purchase prices of regional state medical institutions (e.g. Zaporizhzhya Regional AIDS Centre);
2. Wholesale prices for medicines in the Ministry of Health's "Register of Wholesale Prices for Medical Products";
3. Prices in reference countries during the UNDP procurement period (2015 and 2016).

The Register of Wholesale Prices for Medical Products is maintained by the Ministry of Health, in accordance with Cabinet of Ministers Resolution 240 "On reference pricing for medical products and medical supplies procured for state and local budgets" of 2 July 2014 and Ministry of Health of Ukraine Order 574 "On Approval of the Regulation on the Register of Wholesale Prices for Medicines and Medical Products, the Procedure for Making Changes and the Form of the Declaration of Change in the Wholesale and Retail Price of Medicinal Products" of 18 August 2014 (henceforward Order 574).

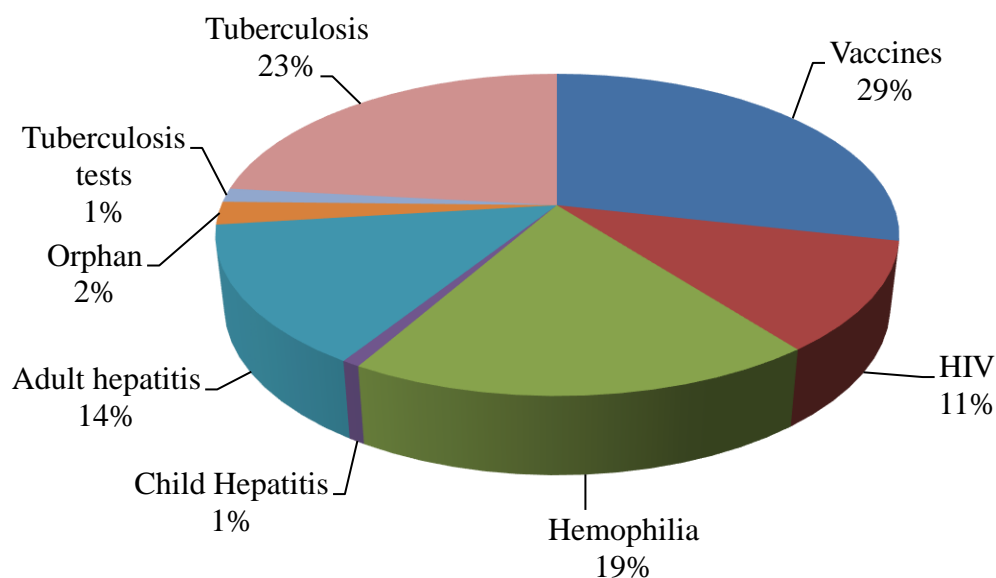
### The total sum of procurement and the number of items that have been analysed:

Programmes	Amount of procurement, US\$	Number of items
Vaccines	11,121,475	2
HIV diagnostics	4,284,411	98
Haemophilia	7,310,417	15
Child hepatitis	286,677	10
Adult hepatitis	5,476,716	9
Orphan disease products	896,931	5
Tuberculosis tests	536,851	8
Tuberculosis	9,072,454	19
<b>Total</b>	<b>38,985,932</b>	<b>166</b>

The purchase amount includes the UNDP commission fee of 5 per cent of the procurement amount from the supplier and the 1.5 per cent logistics costs for all items in the Vaccine programme, the Linezolid item from the Tuberculosis programme, Immunate and Feiba from

the Haemophilia programme and the 1.35 per cent logistics costs for the other items in all programme.

**Proportion of UNDP procurement for 2015 budget of each group of medicines and medical products, by purchase sum:**



**Assumptions**

The calculation of marginal wholesale prices is based on reference prices based on prices for medicinal products registered in the Republic of Poland, the Slovak Republic, Czechia, the Republic of Latvia and Hungary. Reference prices are determined based on registered prices, and specifically the median of the registered price for each dosage form in accordance with the recommended daily allowance under recommendations from the List of International Nonproprietary Names (hereafter the INN) of the World Health Organization (hereafter WHO), obtained from official authorized state body sources in the reference countries.

It is not possible to find countries in which the market for procurement of medicines can be 100 per cent comparable to Ukraine, given the economic situation (the purchasing power of the population), market capacity (the number of patients), various state reimbursement programmes, the availability of medicines, medical care and medical services for the population, geographical location and so on. Therefore, reference countries were selected on the basis of MoH Order 1423 “On Approval of the Procedure for Calculating the Maximum Wholesale Price for Medicines” of 29 December 2016 (henceforward Order 1423). This procedure applies to medicines included in the INN, the cost of which is subject to reimbursement.

The base currency for the analysis is the United States dollar. Data on UNDP procurement prices were provided in the base currency. Data on MoH procurement prices in Ukrainian hryvnia were converted into the base currency using the average interbank selling rate of the base currency at the date on which the procurement agreement was signed with the supplier (or the date closest to this date) according to the Ukrdealing website (<https://finance.ua/ru/currency#interbank>). Data from reference countries were converted into



the base currency using the average rate of the central banks of those countries. The exchange rates used in this report are shown in Appendix 1.

The prices used were exclusive of VAT. As noted above, in the years 2013 and 2014, the Ministry of Health purchased medicines paying VAT, but the UNDP procurement was not subject to VAT.

The analysis did not take into account fluctuations in the base currency rate against other currencies. It also did not take other factors into account because of the inability to accurately determine their impact. These factors include, but are not limited to, the following:

- fluctuations in prices for raw materials on the world market;
- changes in the cost of production because of changes in technological processes;
- competition in the market, changes in the number of suppliers in the market, and the marketing strategies of producers; and
- price decrease caused by increase in purchase volume.

In evaluating the efficiency, no consideration was given to the delivery time, payment terms and eligibility period of the purchased medicines.

### Information sources

Data	Sources
UNDP purchase price	UNDP <a href="http://www.ua.undp.org/content/ukraine/uk/home.html">http://www.ua.undp.org/content/ukraine/uk/home.html</a>
MoH and regional state healthcare organization purchase price	<i>State tenders search and tracking service</i> website <a href="https://ips.vdz.ua">https://ips.vdz.ua</a> <a href="https://tender.me.gov.ua">https://tender.me.gov.ua</a> MoH Orders for the distribution of medicines <a href="http://www.moz.gov.ua">http://www.moz.gov.ua</a>
Prices according to the MoH Register of Wholesale Prices for Medical Products	<a href="http://mozdocs.kiev.ua/liki.php?nav=12">http://mozdocs.kiev.ua/liki.php?nav=12</a>
Medicine prices in reference countries	Czechia, State Institution for Drug Control <a href="http://www.sukl.cz/modules/medication/search.php">http://www.sukl.cz/modules/medication/search.php</a> Republic of Poland, National Health Fund <a href="http://nfz.gov.pl">http://nfz.gov.pl</a> Republic of Poland, Ministry of Health <a href="http://www.mz.gov.pl/en">http://www.mz.gov.pl/en</a> Slovak Republic, Ministry of Health <a href="http://www.health.gov.sk">http://www.health.gov.sk</a> Hungary, National Health Fund <a href="http://neak.gov.hu">http://neak.gov.hu</a> Republic of Latvia, National Health Service <a href="http://www.vmnvd.gov.lv">http://www.vmnvd.gov.lv</a>

In the absence of full access to archival information on the procurement prices of the Ministry of Health in 2013 and 2014, it was not possible to find comparable prices for certain items. Therefore, the study’s coverage was below one hundred per cent for some of the programmes.

<b>Percentage coverage by comparable prices</b>		
<b>Program</b>	<b>By monetary value</b>	<b>By number of items</b>
Vaccines	100%	100%
HIV diagnostics	99%	91%
Haemophilia	100%	100%
Child hepatitis	89%	80%
Adult hepatitis	57%	89%
Orphan disease products	59%	80%
Tuberculosis tests	100%	100%
Tuberculosis	91%	89%
<b>Total</b>	<b>91%</b>	<b>91%</b>

The low percentage of comparable items in the Adult Hepatitis group is because in 2013 and 2014 the Ministry of Health did not purchase the innovative drug “Soposbuvir”, and therefore there are no comparable MoH data. It is inappropriate to compare with reference countries because of the differentiated marketing policies of the manufacturer.

### **Limitations of the research**

For some of the medicines purchased by UNDP, the analysis was mainly limited by a lack of data on the Ministry of Health procurement prices from previous periods.

Orders for the provision of medicines to the Ministry of Health do not reflect the exact period for which these medicines were purchased. In addition, we did not have information about the MoH’s settlement period with suppliers: this could affect the supplier's currency risks, and thus the purchase price of medicines.

Prices in different countries depend on a number of factors and should be considered in the appropriate context. Our analysis does not reflect the complexity of price regulation, product selection or the procurement approach applied in each individual country, nor does it capture the effects of differentiated pricing linked to GDP that some producers use.

Price comparison in different countries includes currency conversion, which is based on the average exchange rate, calculated for comparison for the year. The exact impact of volatility may differ as a result of when suppliers and/or distributors receive goods, enter into price agreements with producers in local currency, and hedge currency risk by producers. Additionally, the prices in different countries are influenced by the different marketing policies of manufacturers and distributors, as a result of which there may be fluctuations in view of the expectations of market potential and the desire for rapid growth.

## Efficiency calculation

Efficiency was evaluated separately for each group of medicines, and overall for all programmes.

A comparison was made for each item of UNDP procurement prices in 2015 and the base price for 2013 and 2014 by dividing the price difference (the UNDP price minus the base price) by the base price (the MoH's purchase price, or the register of wholesale prices, regional purchases or reference countries in the absence of information on MoH prices). Thus the **relative price change** for each position was obtained as a percentage, with a negative value meaning a decrease in price:

$$\text{Relative price change} = \frac{\text{UNDP Price} - \text{MoH Price (base)}}{\text{MoH Price (base)}}$$

To obtain the **absolute sum of savings** (or overspending), for each position we multiplied the volume of medicines purchased in the 2015 budget by the difference between the base price and the UNDP price, with a negative value means overspending:

$$\text{Absolute sum of saving} = \text{volume of medicines} * (\text{MoH Price (base)} - \text{UNDP Price})$$

To calculate the **absolute sum of saving** (overspending) **in the programme**, we added the absolute sums of savings for each item:

$$\text{Absolute programme savings} = \sum_{i=1}^n \text{absolute sum of savings by } i \text{ position,}$$

where n = number of items in the programme.

Accordingly, in order to calculate overall efficiency, we have added absolute sums of savings (overspend) for all programmes.

To calculate the **average percentage of savings** for an individual programme, we divided the absolute sum of savings (overspending) by programme with the opposite sign by the total sum of purchases at the programme's base prices. Thus a negative value means a price decrease:

$$\text{Average \% of savings} = \frac{- \text{absolute sum of savings by programme}}{\text{total sum of purchase at the base price}}$$

Accordingly, in order to assess total relative efficiency, we have divided the absolute savings in all programmes by the total sum of all procurement at base prices - at the prices of the Ministry of Health, or regional procurement or reference country prices in the absence of information on MoH prices.

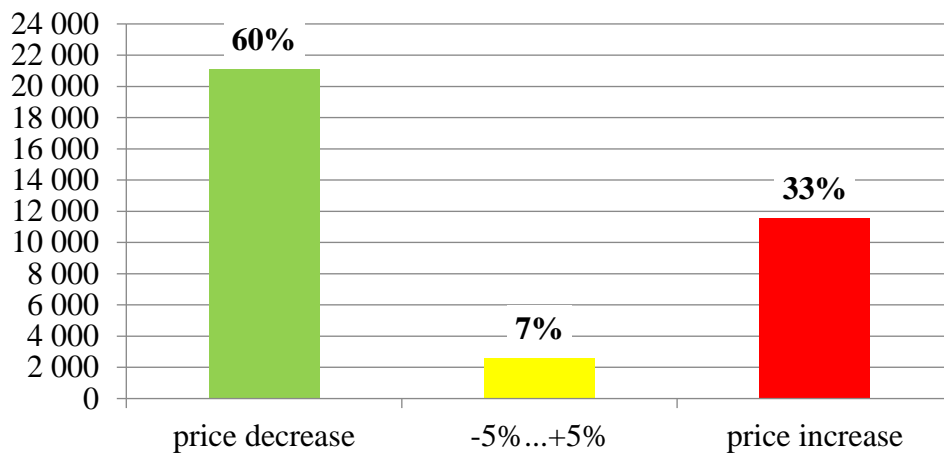
## 3. Assessment of cost efficiency

The procurement of medicines and other medical supplies in 2015 through UNDP was generally efficient compared to analogous procurement in 2014 by the Ministry of Health.

The total savings for all programmes amounted to \$14.5 million, with an average price decrease of 29 per cent.

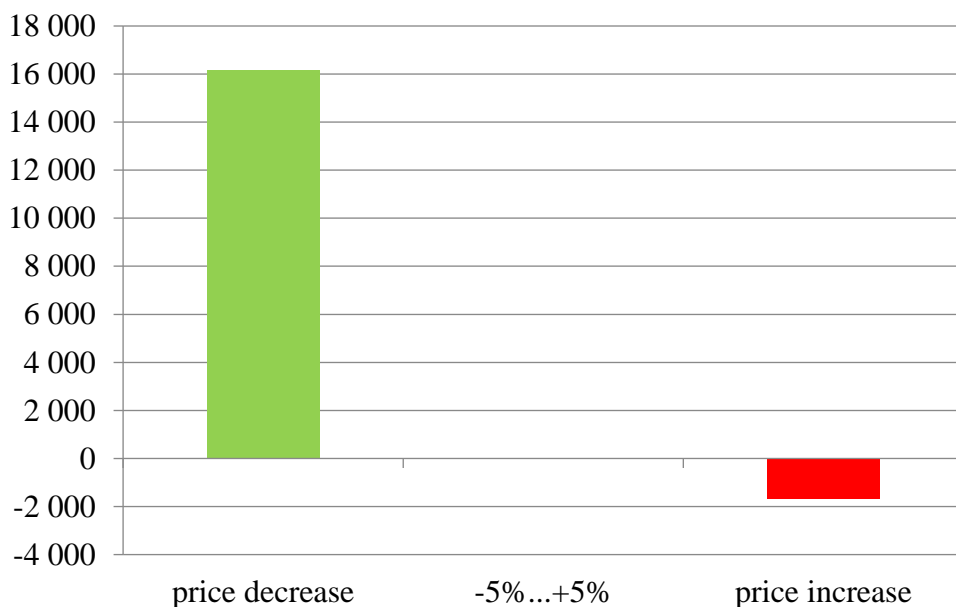
At the same time, it should be noted that savings were not observed for all items: \$21.1 million worth of purchases were made at a lower price (60 per cent of all purchases), purchases worth \$2.6 million were almost unchanged in price, and \$11.6 million worth of purchases were made at a higher price (see Figure 1).

**Figure 1. Total sum purchased, by category of price change**



In total, savings because of price decreases amounted to \$16.2 million, and overspending because of price increases amounted to \$1.7 million, as shown in Figure 2.

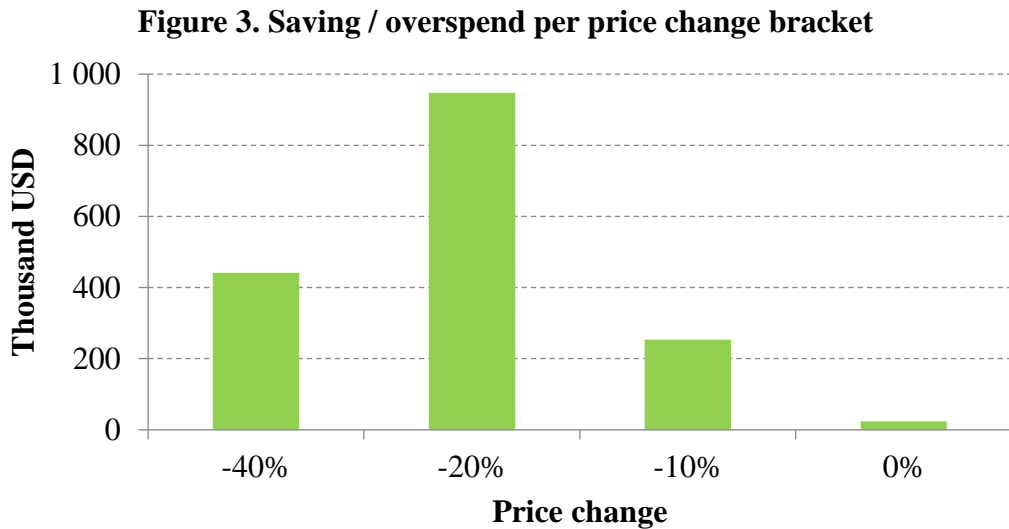
**Figure 2. Total savings / overspend, thousand USD**



### Haemophilia

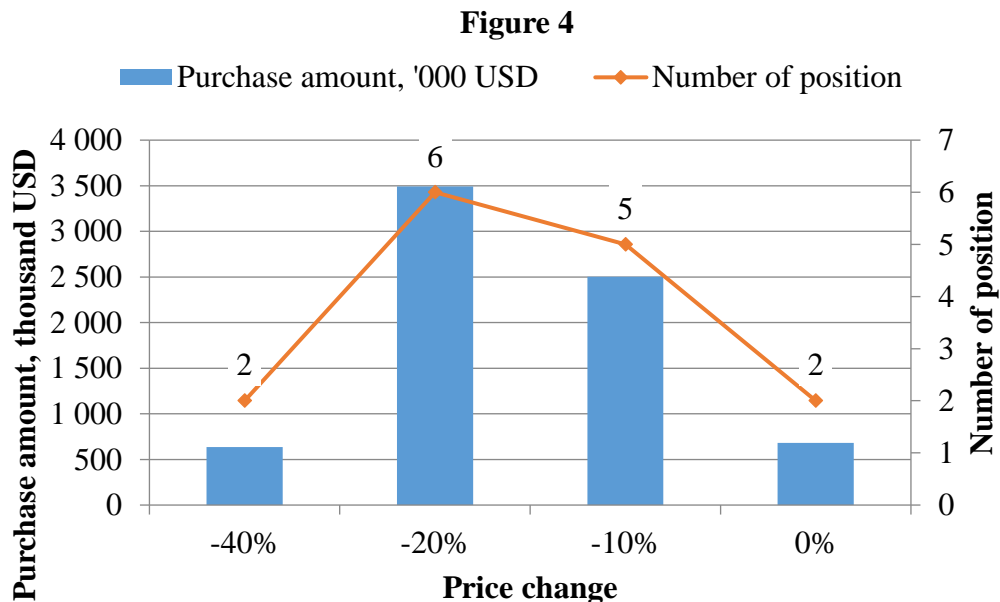
The amount saved for the programme was US\$ 1,666,000, amounting to a saving of 18.6 per cent.

The savings in thousands of dollars, in terms of percentage changes, are grouped into price brackets of ten per cent in Figure 3:



The vertical axis shows the sum of savings in thousands of US\$, and the horizontal axis shows the price change in percentages, grouped to ten per cent changes in price. For example “0%” means the price change was between -5 and +5 per cent; while “-10%” indicates a change in the range of -5 to -15 per cent.

The total volume of procurement per price percentage change, grouped by price change in a ten per cent steps is shown in Figure 4:



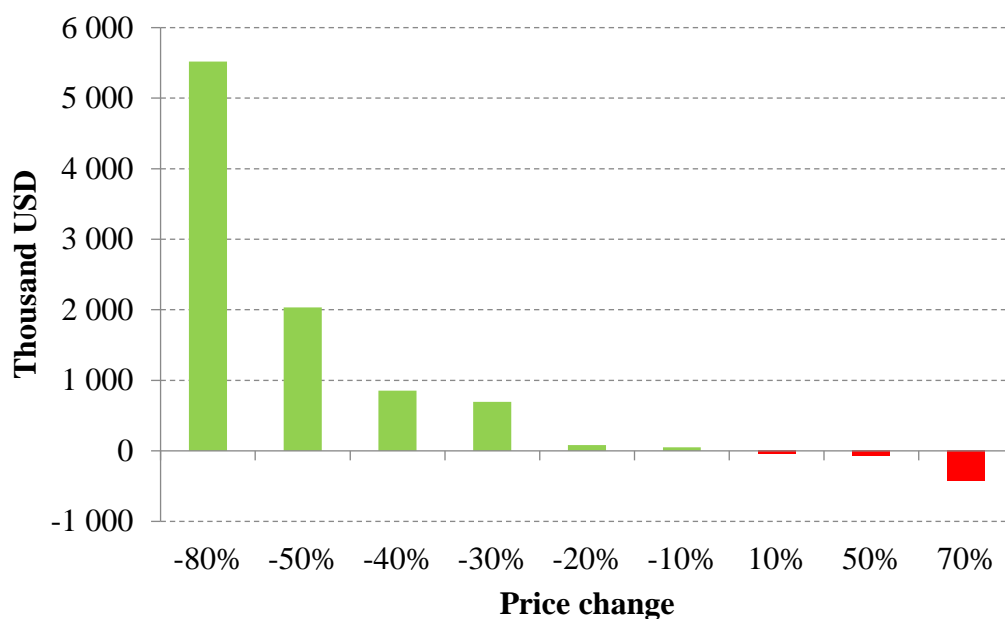
The left vertical axis shows the total purchase sum, while the right vertical axis shows the number of items in this price-change bracket.

For two items, the price did not change, while for 13 it decreased.

## Tuberculosis

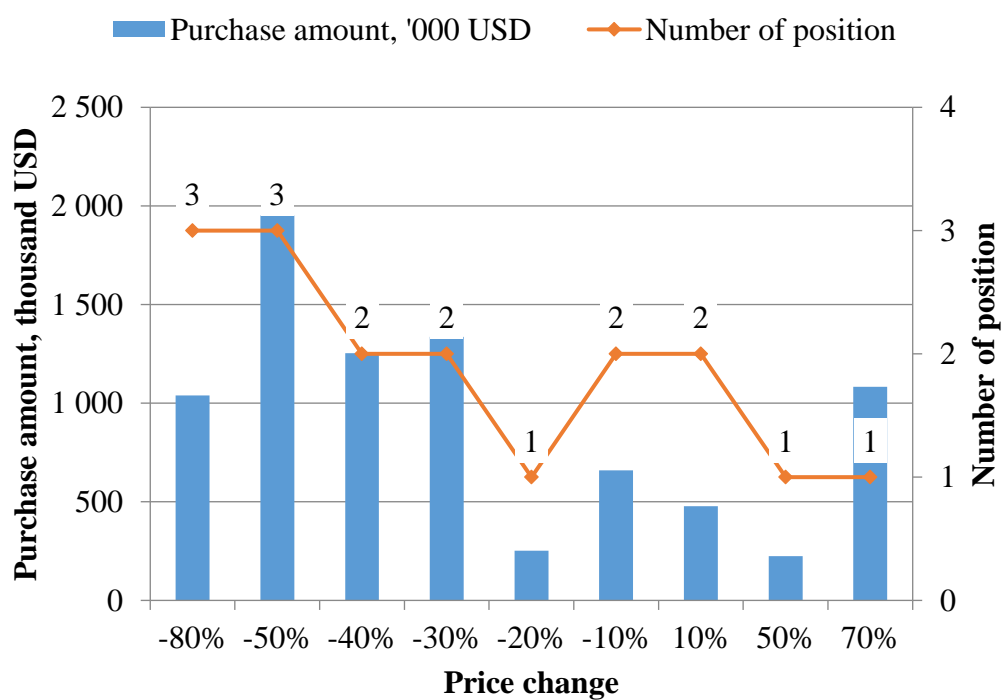
The sum of savings in the programme was US\$ 8,690,000, amounting to a saving of 51 per cent.

**Figure 5. Saving / overspend per price change bracket**



There were price reductions for 13 items and price increases for four. The prices of two items were not compared because of the absence of base prices.

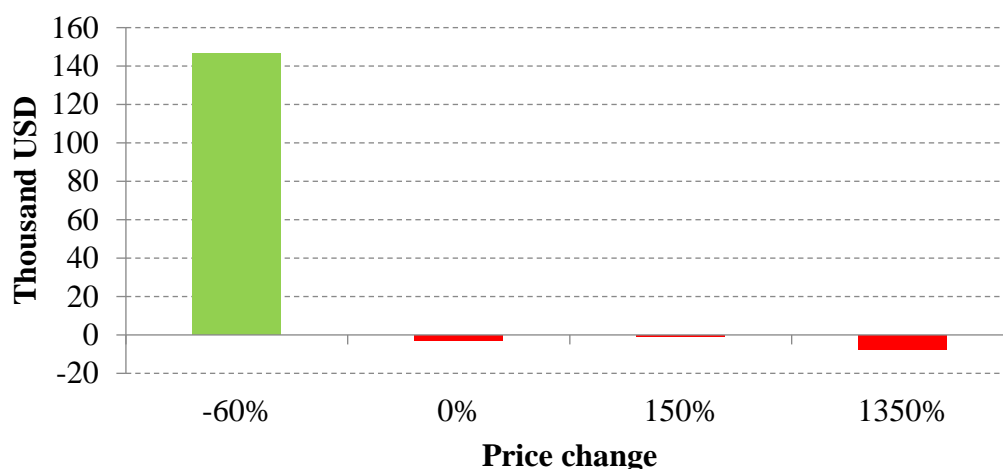
**Figure 6**



## Child hepatitis

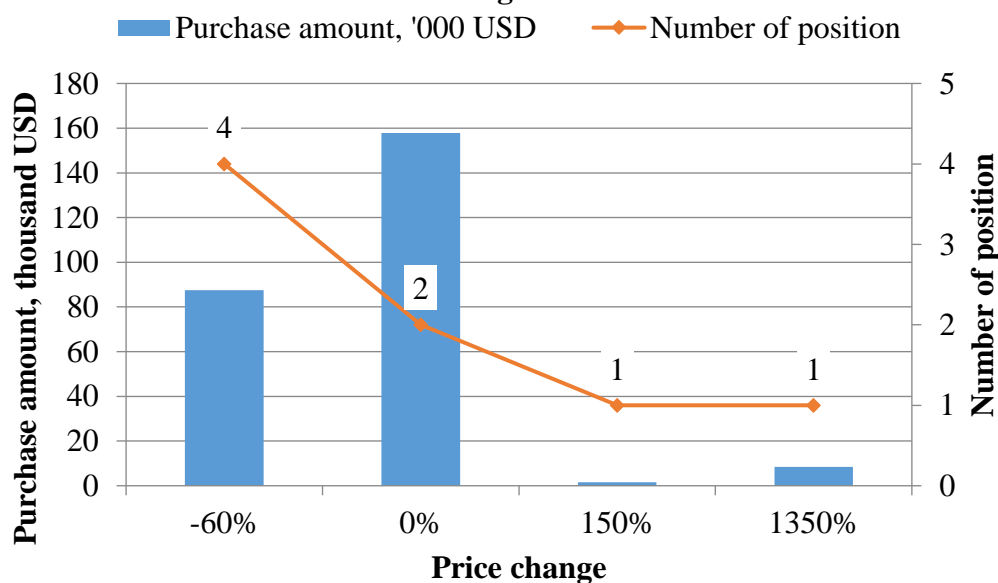
The sum of savings in the programme was US\$ 135,000, amounting to a saving of 35 per cent.

**Figure 7. Saving / overspend per price change bracket**



For four items, there was a price decrease of around 60 per cent, a price increase occurred for two items, there was practically no price change for two positions, and no comparison was made for two items because of the absence of base prices.

**Figure 8**

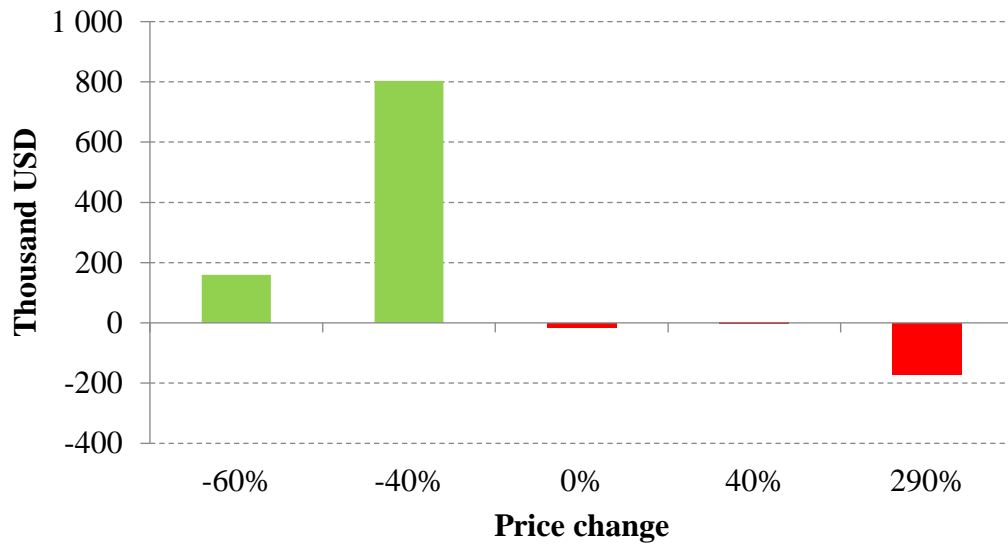


The item on which there was an increase in the price of more than 200 per cent was Ribavirin. The Ministry of Health obtained this drug at a price of US\$ 0.017. UNDP's purchase price was in the range of US\$ 0.11-0.29. In the same period, the price in reference countries ranged from US\$ 1.16 to 3.10. This suggests that the Ministry of Health might have received this medicine at a non-market price, while UNDP's purchase price was significantly lower than in the reference countries.

## Adult hepatitis

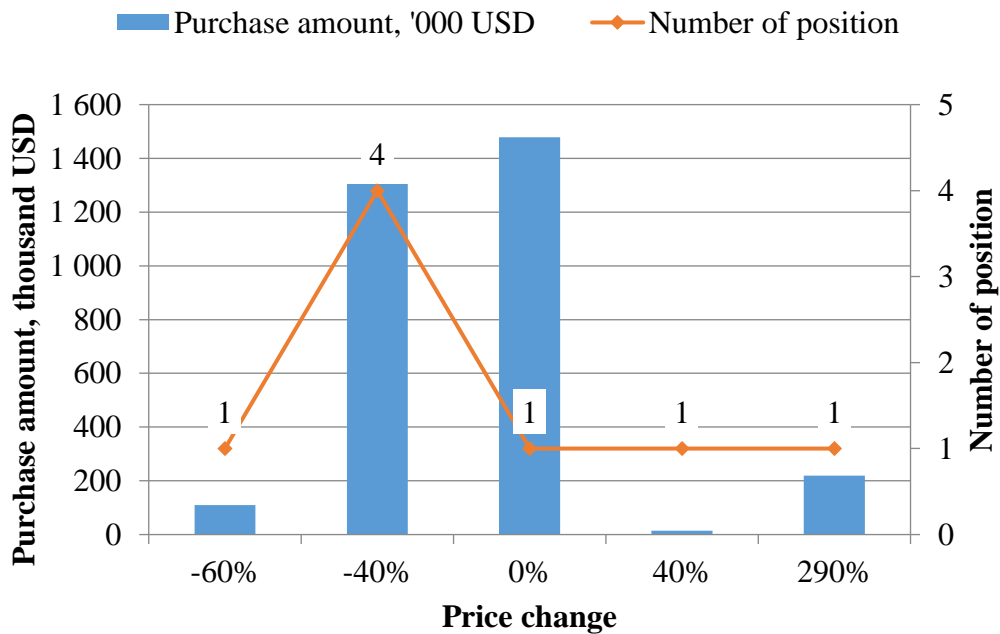
The sum of savings in the programme was US\$ 733,000, amounting to a saving of 19 per cent.

**Figure 9. Saving / overspend per price change bracket**



For five items there was a decrease of price by around 40 to 60 per cent, for two items there was an increase in prices (including Ribavirin, which increased by 284 per cent). For one item there was practically no price change, while for one item there was no comparison because of the absence of a base price.

**Figure 10**

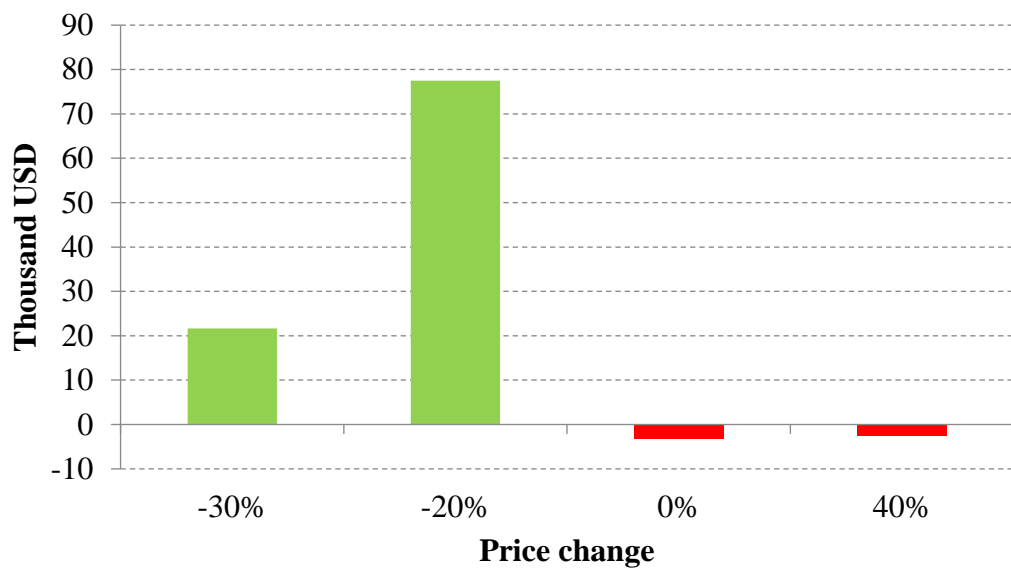




## Orphan diseases

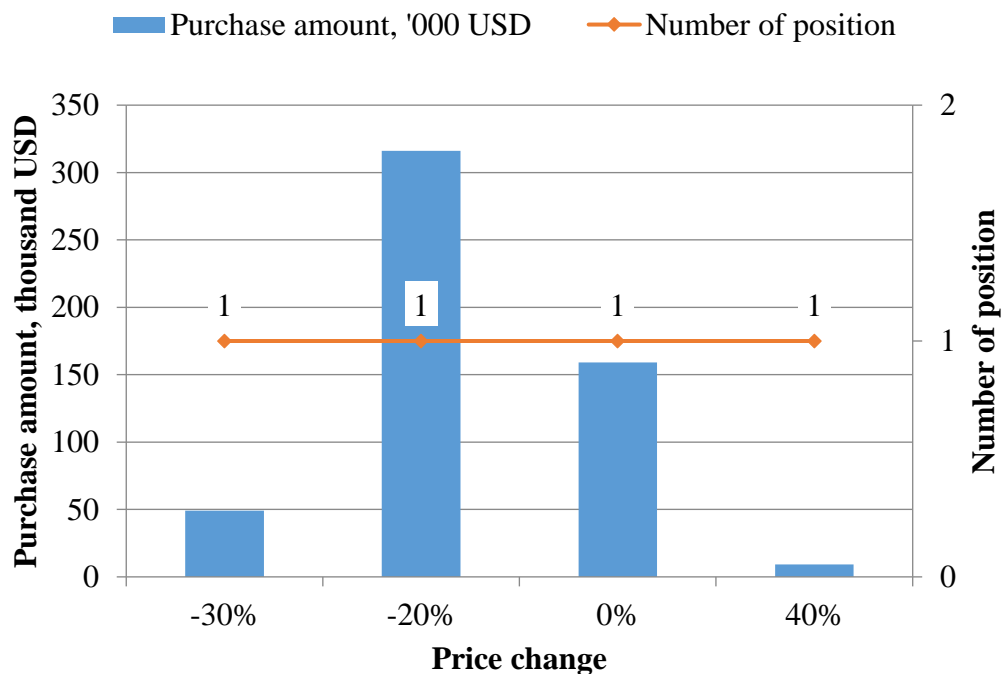
The sum of savings in the programme was US\$ 90,000, amounting to a saving of 15 per cent.

**Figure 11. Saving / overspend per price change bracket**



For two items there was a decrease of price, for one item there was practically no price change, for one item the price increased, while for one item there was no comparison because of the absence of a base price.

**Figure 12**



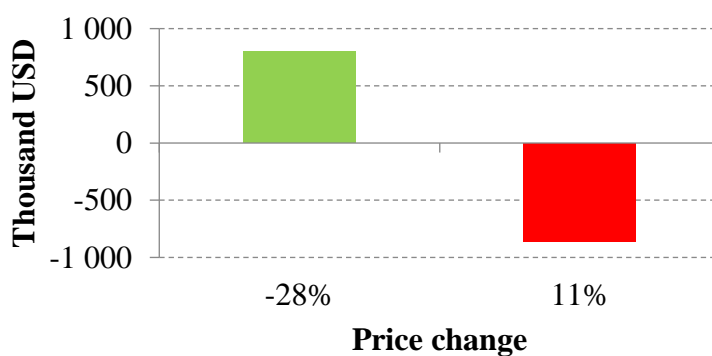
## Vaccines

The amount of additional spending in the programme was US\$ 55,000. The overspend rate was 0.5 per cent.

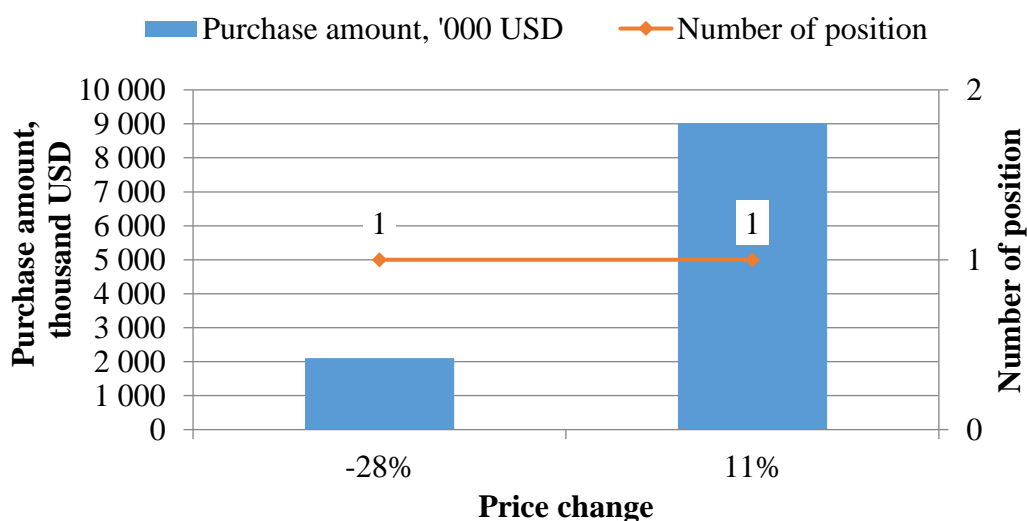
Two items were purchased:

Item	UNDP procurement sum, US\$	Price change, %	Savings (+), overspending (-), thousand USD
Pentaxim	9,016,000	11%	-859
Haemophilus Influenzae type b Conjugate vaccine	2,105,000	-28%	803
<b>Total</b>	<b>11,121,000</b>	<b>-0.5%</b>	<b>-55</b>

**Figure 13. Saving / overspend per price change bracket**



**Figure 14**



### Tuberculosis tests

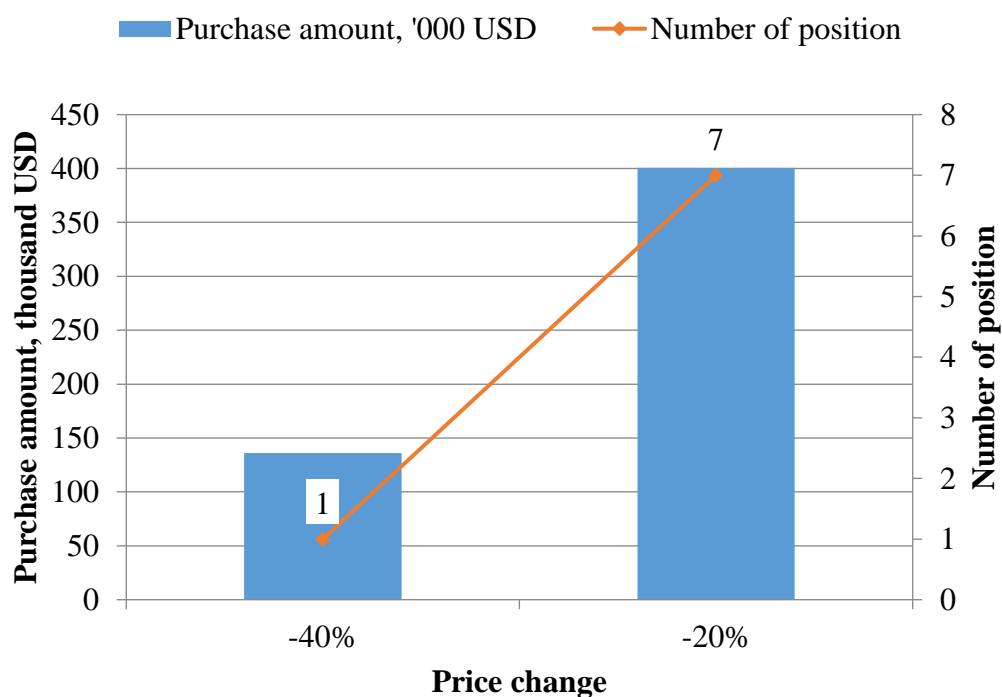
The sum of savings in the programme was US\$ 166,000, amounting to a saving of 24 per cent.

**Figure 15. Saving / overspend per price change bracket**



All items in this programme saw price decreases.

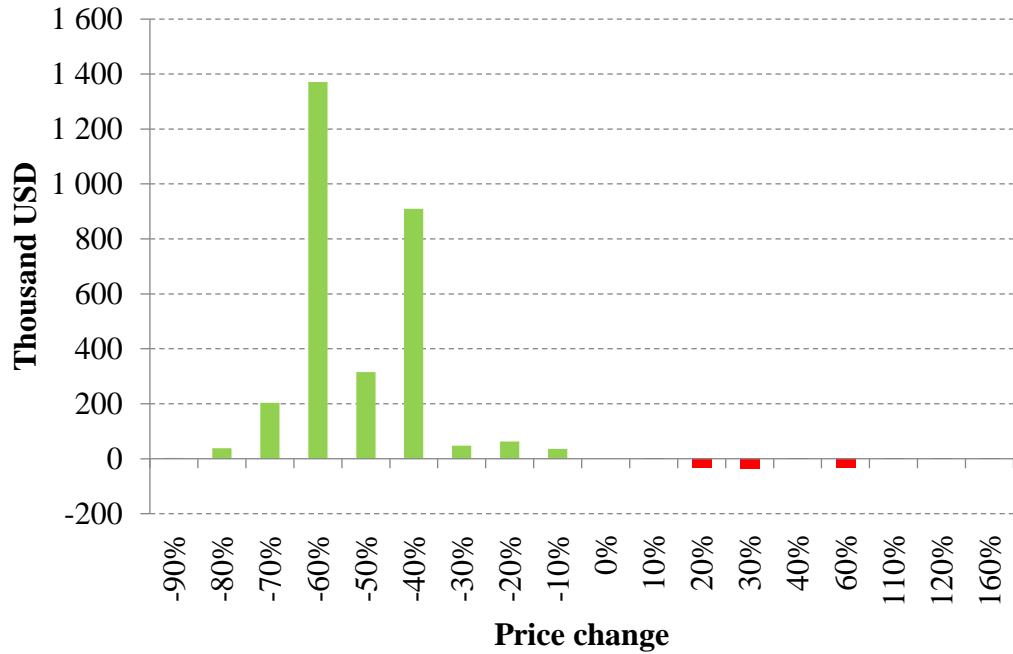
**Figure 16**



### HIV diagnostics

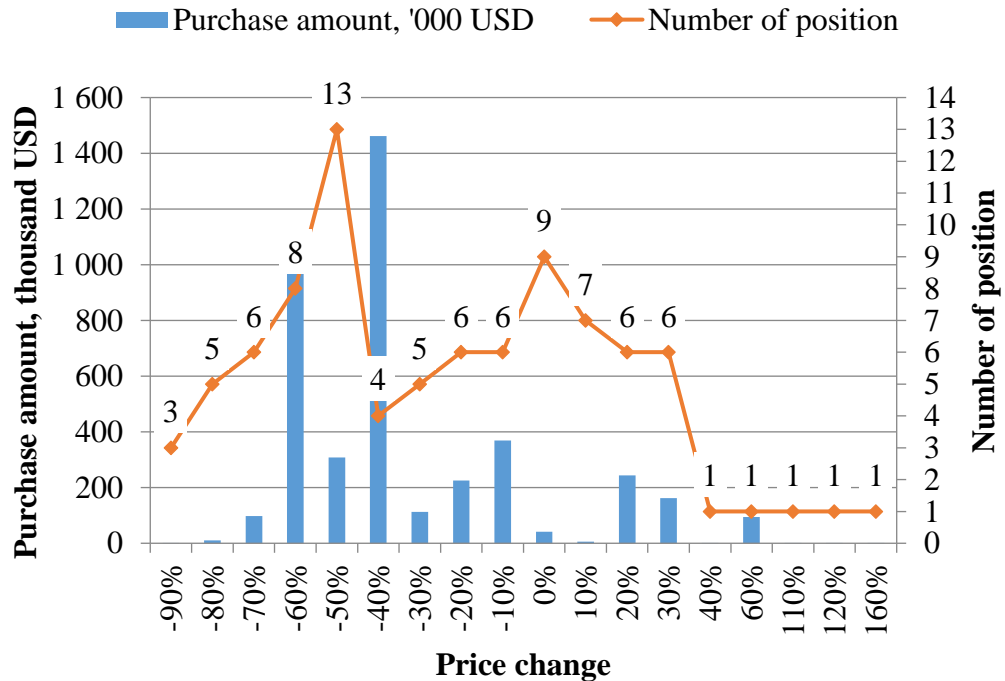
The sum of savings in the programme was US\$ 2,882,000, amounting to a saving of 41 per cent.

**Figure 17. Saving / overspend per price change bracket**



For 61 items there was a decrease in prices, and for 19 an increase. The procurement amounts or items for which there was a rise in the price were insignificant, and therefore the amount of overspend was insignificant. For 9 items the price was virtually unchanged.

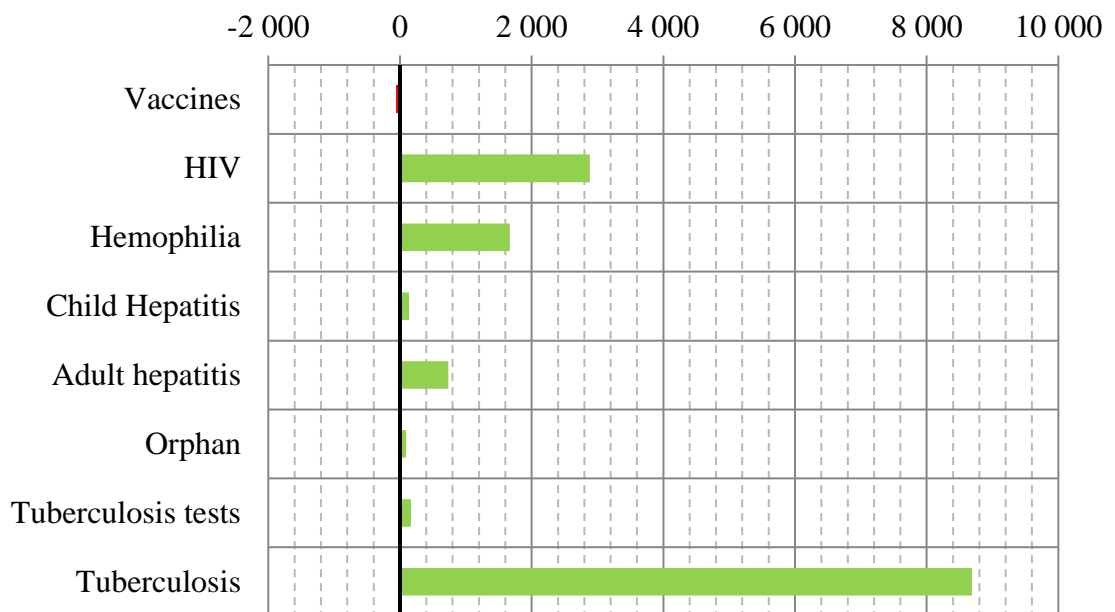
**Figure 18**



**For all programmes**

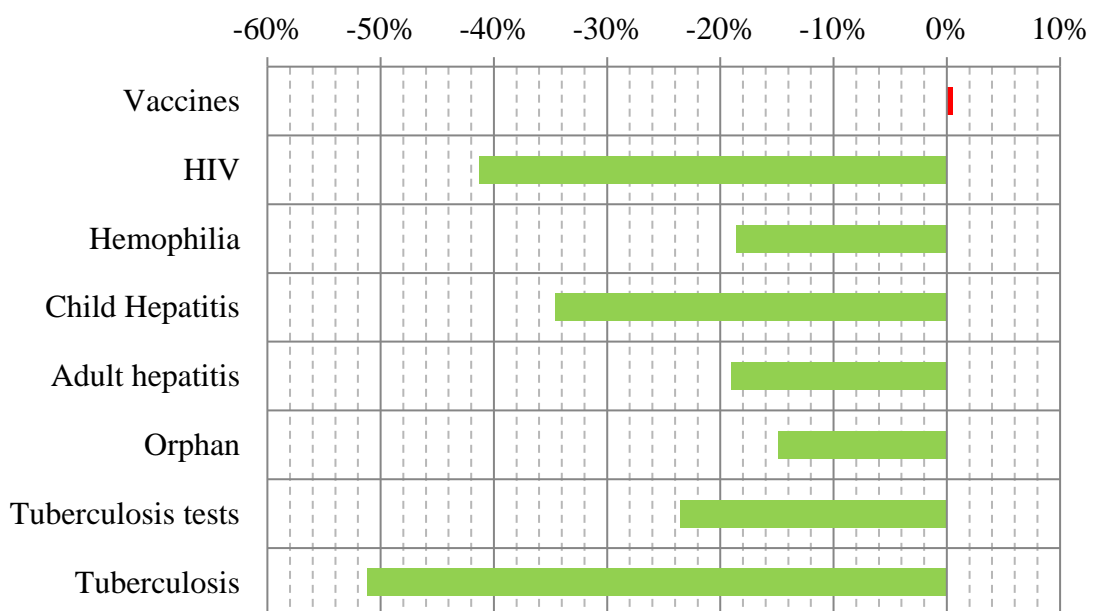
The volume of saving and overspend for all programmes is shown in Figure 19:

**Figure 19. Total amount of saving / overspend, thousand USD.**



The distribution of the average programme price changes is as follows:

**Graph 20. Price change, percentage**



## 4. Conclusions

UNDP's involvement in the procurement of medicines and medical products for the state has ensured transparent procurement and savings of budgetary resources.

The analysis allows us to conclude that medicine and medical device procurement for the 2015 state budget with UNDP involvement was efficient. A 29 per cent reduction in prices was achieved, which enabled savings of US\$ 14.5 million.

The most effective programme, from the perspective of price reduction both as a percentage and as a total amount of savings was the tuberculosis programme, with US\$ 8.8 million of savings and a 52 per cent reduction in price. For the vaccines programme, UNDP was as efficient as MoH had been in earlier periods.

A total of 151 items out of 166 were analysed (identical positions from different programmes were counted separately). For 102 items there was a decrease in price, and for 32 items increased prices. The items that saw increased prices did not affect the respective programmes as a whole due to the small volume of purchases or only slight increase in prices, with the exception of Ribavirin in the Children and Adult Hepatitis programmes.

The purchase of Ribavirin by the Ministry of Health at a non-market price, when compared to the reference countries, had a negative impact on the indicators for the Children's and Adult Hepatitis programmes.

Procurement through UNDP also provided a number of benefits for patients and the health sector as a whole. These include:

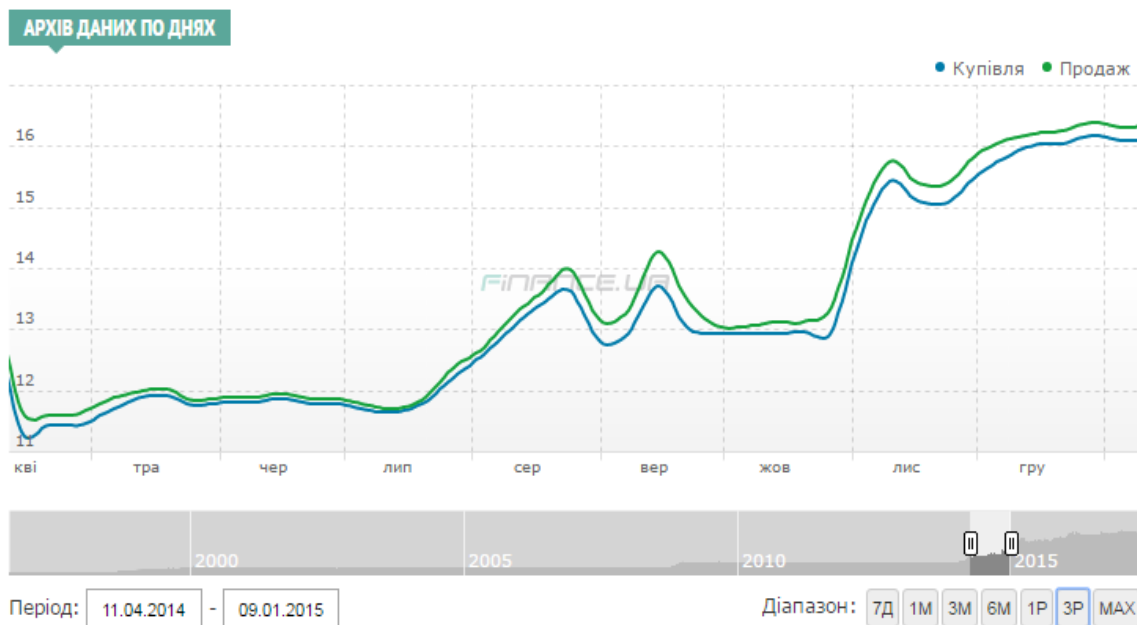
- Best prices obtained as a result of open and transparent procurement procedures; and
- High-quality medicines and medical products procured as a result of strict requirements for medicines and medical products in the tender processes.

## 5. Appendices

### Appendix 1. Currency rates

#### 1.1. Interbank exchange rate of Ukraine Hryvnia to US Dollar

<https://finance.ua/ru/currency#interbank>



Period	UAH / USD rate
January 2014	8.0
February 2014	9.0
March 2014	10.5
April 2014	11.5
May 2014	11.8
June 2014	11.9
July 2014	12.0
August 2014	13.0
September 2014	13.5
October 2014	13.0
November 2014	15.0
December 2014	16.0

## 1.2. Central bank of the Czech Republic: Czech Coruna rate to US Dollar

<http://www.cnb.cz/en>

Select currency:

USD ▼

Rate USD/CZK\*



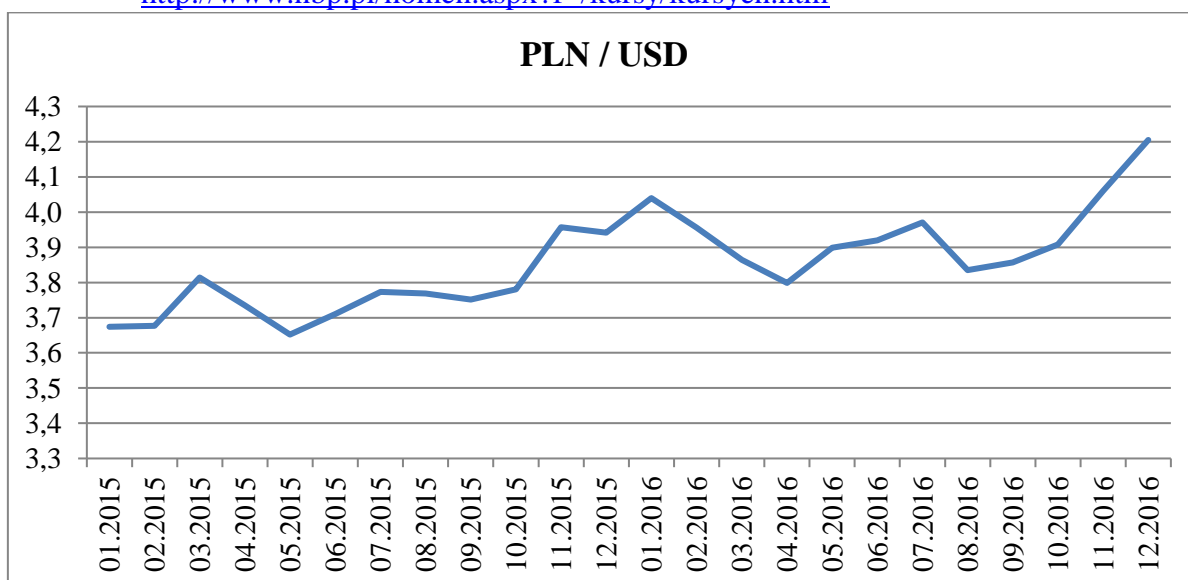
Zoom 1 m 3 m 6 m 1 y 2 y 5 y 10 y



Period	Average rate, CZK / USD
2015	23.0
2016	24.0

## 1.3. Narodowy Bank Polski: Polish Zloty rate to US Dollar

<http://www.nbp.pl/homen.aspx?f=/kursy/kursyen.htm>



Period	Average rate, PLN / USD
2015	3.77
2016	3.94



## 1.4. European Central Bank rate: Euro to US Dollar

<https://www.ecb.europa.eu>

Change from 29 August 2015 to 10 October 2016

Minimum (30 November 2015): 1.0579 - Maximum (3 May 2016): 1.1569 - Average: 1.1120

Select: EUR vs. USD ▾



From: 29-08-2015 to: 10-10-2016

Zoom: 1m 3m 6m 1y 2y 5y 10y all



Average rate 2015 – 2016: 1.11 USD / EUR

## Appendix 2. List of medicines and medical products

#	Item name
1	Refacto 250 IU
2	Refacto 500 IU
3	Immunate 250 IU
4	Octanata 500 IU
5	Benefix 500 IU
6	Immunate 500 IU
7	Immunate 1000 IU
8	Wilate 500 IU
9	Wilate 1000 IU
10	Immunate 1000 IU
11	Novoseven 100 KIU
12	Novoseven 250 KIU
13	Feiba 500 IU
14	Feiba 1000 IU
15	Octostim
16	Copegus™ 200 mg
17	Pegintron® 50 µg /0.5 ml
18	Unitron 80 µg /0.5 ml
19	Unitron 100 µg /0.5 ml
20	Unitron 120 µg /0.5 ml
21	Unitron 150 µg /0.5 ml
22	Zeffix™ 100 mg
23	Zeffix™ 5 mg/ml
24	Pegasys® 90 µg /0.5 ml
25	Pegasys® 135 µg /0.5 ml
26	Unitron 80 µg
27	Unitron 100 µg
28	Unitron 120 µg
29	Unitron 150 µg
30	Unitron 180 µg
31	Tenohor 300 mg
32	Zeffix™ 100 mg
33	LIVE ® 200 mg
34	Sovaldi 400 mg
35	Myozyme
36	Fabrazyme
37	Orfadin 5 mg
38	Orfadin 10 mg
39	Kuvan
40	Pentaxim
41	Haemophilus Influenzae type b Conjugate vaccine
42	Identification test for identification of mycobacterium tuberculosis complex BD Bactec™ MGIT™960 TBc
43	BD BBL™ MycoPrep™ Kit/ Reagent for sample preparation and decontamination of sputum 10/150ml)- 1 pack/100 tests
44	BD Bactec™ MGIT™ 960 - Tubes 7 ml for cultivation of mycobacterium tuberculosis – 1 pack/100 tests
45	BD Bactec™ MGIT™960 - Supplement Kit -1 pack/100 tests
46	BD Bactec™ MGIT™ 960 - SIRE Kit / Kit (package) for 40 tests

#	Item name
47	BD Bactec™ MGIT™960 - PZA Medium (Susceptibility Test Medium)
48	BD Bactec™ MGIT™960 - PZA Kit / Kit (package) for 50 tests
49	BD MGIT™- OADC Enrichment/. Kit (package) for 50 tests
50	ELISA Test System (set of reagents) for the simultaneous detection of p24 antigen HIV-1 and HIV antibodies Y
51	Genscreen Ultra HIV Ag-Ab Cat 72388
52	Fast (rapid) tests for the detection of antibodies to HIV Y
53	Architect HIV Ag/Ab Combo, set of reagents
54	Architect HIV Combo HIV Ag/Ab COMBO set of calibrators
55	Architect HIV Combo HIV Ag/Ab COMBO set of 4 controls
56	Concentrated wash buffer, 4 l
57	Liquid of pre-triarter (4 x 975 ml)
58	Liquid of triarter (4 x 975 ml)
59	Reaction vessel, 4000 pieces /package
60	Cups for samples, 1000 pieces / package
61	Membrane, 200 pieces / package
62	Changeable caps, 100 pieces / package
63	Conditioner for zonder, 4 x 25 ml
64	Test system (set) for simultaneous detection of p24 antigen HIV-1 and HIV antibodies Y
65	ELISA test system for detection of antibodies to HIV Y virus
66	ELISA test system for screening antibodies to HIV Y virus
67	Test system (set) for immunological diagnosis of HIV-1 immune blot method
68	Test system (set) to quantify p24 HIV-1 antigen
69	Test system (set) to confirm the presence of p24 HIV-1 antigen
70	Cyto-StatrvHROM CD45-FITC / CD4-RD1 / CD3-PC5, 50 tests
71	Cleaning substance, 5 l
72	Isotonic solution, 10 l
73	IMMUNOPREP System reagents, 100
74	IMMUNOPREP System reagents, 300
75	Flyuorosfery Flow-Check, 3x10 ml
76	Flyuorosfery Flow-Count, 200 tests
77	Tubes for analysis (12h75 mm) blue, 250 pcs.
78	IMMUNO-TROL Cells, 2x3 ml
79	Reagents for determination SD3 / CD4 / SD45, 50 tests, 1 ml
80	Flow liquid, 20 l
81	Solution for washing devices and decontamination, 5 l
82	Detergent solution for washing, l
83	Kalibrayt not labeled particles, labeled with FITC, PerCP, PE to configure the device, 25 tests
84	Lysing solution, 100 ml
85	Test tubes with control particles 50 pcs.
86	Reagent for quality control 1 x 2.5 ml
87	Set of reagents for sample preparation
88	Set of calibrators
89	A set of controls
90	Set of reagents for amplification
91	Adhesive tape for plates
92	Optical 96-well reaction plates
93	Tips, 1 ml

#	Item name
94	Reaction tubes
95	Tanks for reagents
96	96 deep-well plates
97	Test tubes with caps of 1.5 ml ASPS
98	Tips 200 µl
99	Test tubes with lids Master Mix
100	Tip filters 1000 µl, sterile
101	4.5 ml tube, 75x12 mm, PE
102	Tip filter 200 µl, sterile
103	Tip without filter 1000 µl, sterile
104	Sacks for ASPS waste
105	Sacks for ASPS waste
106	Set Cobas TaqMan HIV IVD 48 tests for HIV
107	Set CAP-G / CTM 5, 11 IVD washing solution 5, 11
108	Tips K-tips
109	Tube K-tube 12 x 96
110	Input S-tube 12 x 24 pieces. - Barcode Flips
111	Sample preparation device (SPU)
112	Tip with filter 1000 µl, sterile
113	Tip with filter 200 µl, sterile
114	Tip without filter 1000 µl, sterile
115	FRT set of reagents for quantification of HIV-1 RNA real-time detection
116	Tip without filter 200 µl, sterile
117	1.5 ml microtubes
118	0.2 ml thin-walled PCR tube, flat cap
119	0.2 ml thin-walled PCR tube, domed cap
120	Tip with filter 1000 µl, sterile
121	Tip with filter 200 µl, sterile
122	Tip without filter 1000 µl, sterile
123	Tip without filter 200 µl, sterile
124	1.5 ml microtubes
125	0.2 ml thin-walled PCR tube, flat cap
126	0.2 ml thin-walled PCR tube, domed cap
127	FRT set of reagents for detection of proviral HIV-1 DNA real-time detection regime
128	Tip with filter 1000 µl, sterile
129	Tip with filter 200 µl, sterile
130	1.5 ml microtubes
131	0.2 ml thin-walled PCR tube, flat cap
132	ViroSeq™ HIV-1 Genotyping System
133	Set for purification of PCR Cleanup Kit
134	Set of consumables for sequencing Sequencing Consumables Kit
135	BigDye Terminator mixture of standards
136	POP-6 polymer
137	Genetic Analyzer 10x buffer
138	Covering for 96-hole dies
139	Hi-Di Solution, 25 ml
140	Tip with filter 20 µl, sterile
141	0.2 ml thin-walled PCR tubes, 8 strip
142	0.2 ml thin-walled PCR lid, 8 strip

#	Item name
143	Standard control (qualification) panel serums containing (in different concentrations) and not containing HIV antibodies
144	Control samples of serum containing antibodies to HIV (for internal laboratory quality control)
145	Standard serum sample containing antigen p24 HIV-1 (for internal laboratory quality control)
146	Closed systems for separating blood (Vacutainer tube type with K3EDTA, holders, needles for immunological and virological studies)
147	Closed systems for separating blood (Vacutainer tube type with K2EDTA with dividing gel, holders, needles to determine viral load)
148	Isoniazid 300 mg
149	Isoniazid 100 mg
150	Isoniazid 4,000 mg
151	Bitub 500 mg
152	Macox 150
153	Rifabutin 150 mg
154	Macrozide 500 mg
155	Ethambutol 400 mg
156	Inbutol 2 000 mg
157	Kanamycin 1 000 mg
158	ProTech 250 mg
159	Levomac 500 mg
160	Levomac 250 mg
161	Moxifloxacin 400 mg
162	Sodium aminosalicylate 1 000 mg
163	Coxeryn 250 mg
164	Capreomycin 1 000 mg
165	Linezolph 600 mg
166	Terizidone 250 mg