**OPTIMIZATION OF THE MEDICINES SUPPLY SYSTEM FOR CONSUMERS**

**ABSTRACT**

**Objectives.** The study highlights the results of the analysis of the pharmaceutical market in a market economy situation.

**Methods:** Ways and methods of improving the system of providing medicines to the population of Uzbekistan in a market economy. The validity of the obtained results is confirmed by the fact that all statistical data of comparative, pharmacoeconomic, and survey research processed using information and computer technology based on methods of intellectual analysis.

**Results:** In this direction, the state is taking a number of measures, which in turn has led to the fact that over the past 27 years, the volume of production of medicines by local enterprises has increased by domestic medicines – by 14.85 times. Studies show that it is necessary to purchase only those branded and original drugs that are not produced by domestic enterprises with the currency allocated by the state. An example is the drugs used in the treatment and prevention of bronchial asthma, chronic obstructive pulmonary disease, diseases of the cardiovascular system and malignant neoplasms. For example, domestic pharmaceutical manufacturers do not produce a drug in the form of an aerosol that is effective in the treatment of bronchial asthma, chronic obstructive pulmonary disease and allergic rhinitis.

**Conclusions:** To improve the provision of the population and medical institutions with medicines and medical products, taking into account the limited financial resources allocated by the state budget, it is necessary to use effectively existing funds, which, in turn, will make medicines available.

1.What is already known about the topic?

In our research, the dynamics and indicators of the growth of the drugs registered in the State Register are scientifically based on systematic years. This is the main factor in the provision of drugs to the population and treatment-prophylactic institutions.

2. What does the paper add to existing knowledge?

This article provides scientific and practical assistance to researchers in obtaining knowledge and information about drugs registered in the Republic of Uzbekistan, sold in pharmacies, and used in medical practice.

3. What insights does the paper provide for informing healthcare-related decision making?

Information, scientific analysis on the number of prescriptions of drugs serves a practical purpose in providing the population and treatment-prophylactic institutions with high-quality, effective, and less side-effect drugs in health care practice. It is the basis for making decisions on the purchase of drugs for treatment and prevention institutions. The basis to the population for receiving information on the free purchase of certified medicines from pharmacies that have passed the State register.

**Introduction**

In Uzbekistan pays constant attention to strengthening the health of the people, providing the population with quality and affordable medicines. In particular, over the past six years, pharmaceutical production has tripled and exports have increased six fold. A total of 177 projects worth $525 million have been launched, creating a total of 50,000 jobs.

For instance, the annual consumption of pharmaceuticals in the country is $1.6 billion. Only 18% of the market is covered by domestic producers, while the rest is imported.

In this regard, the importance of studying foreign experience and attracting well-known brands to our country was underlined. In particular, instructions were given to increase localization to 35% by organizing the production of the 50 most consumed medicines in the country.

A total of 173 projects worth $1.5 billion have been formed in the industry, and $600 million will be allocated for their financing.

The officials reported that as a result of the implementation of the projects, production worth $400 million and exports worth $160 million are expected by 2024 [1].

In the Republic of Uzbekistan, the indicators for the development of the pharmaceutical industry are 231 manufacturers, 15,250 pharmacies, 160 pharmacies of medical institutions, 545 distributors, 156 processors of medicinal herbal products, 1,327 manufactured medicines [2].

Recently adopted a number of regulatory acts aimed at improving the provision of the population and health facilities with affordable medicines, medical devices and medical equipment. In 2017, about 30 decrees and resolutions were adopted, aimed at expanding the scale and improving the quality of medical care.

Work has been carried out to improve the provision of the population and public health institutions with affordable medicines and medical products.

The system work carried out in the sphere gives its results. In 2017, 1.6 billion conditional packages of medicines and medical products were produced, which is 34 percent more than in 2016. Last year, 71 investment projects were launched in the industry, 33 facilities were put into operation for $ 148 million, and 76 new products were produced.

In Karakalpakstan, at the end of last year, the Association for the Production and Processing of Licorice was established. There was noted the need for special control over this issue, the importance of the transition from simple collection of wild licorice root to plantation organization and deep processing of this raw material with the production of medicinal substances and products from it.

At present, 74 percent of domestic demand is covered by imports, on the basis of development, only 1.6 tons of medicinal substances are produced with 16 names using plant raw materials [3].

Amendments and additions to the Law of the Republic of Uzbekistan "On Medicines and Pharmaceutical Activities" (new edition) of January 4, 2016, in Article 19 "Wholesale sale of medicines and medical products", noted that "Wholesale organizations of medicines and medical products have the right to purchase medicines and medical products from manufacturers of medicines and medical products, from other wholesale organizations medicinal products and medical products, as well as with foreign manufacturers and wholesale organizations selling medicines and medical products" [4]. The aforementioned law establishes that the list of medicinal products, medical devices permitted for use in medical practice, is determined by the Ministry of Health of the Republic of Uzbekistan.

By the Decree of the President of the Republic of Uzbekistan No. PD-5229 on November 7, 2017 "On Measures for Cardinal Improvement of the Pharmaceutical Industry Management System" in order to improve the conditions for the development of pharmaceutical activities, further increase the level of provision of the population and public health institutions with affordable, high-quality medicines, medical products and medical equipment, the introduction of a unified system for coordinating their production, import and sale.

The Agency for the Development of the Pharmaceutical Industry was established under the Ministry of Health of the Republic of Uzbekistan. The Agency established the State Center for Expertise and Standardization of Medicines, Medical Devices and Medical equipment of the Ministry of Health of the Republic of Uzbekistan, the Uzbek Chemical and Pharmaceutical Research Institute, the Tashkent Research Institute of Vaccines and Serums, the Scientific Research Institute “Eastern Medicine”.

**Methods**

The main tasks of the Agency for the Development of the Pharmaceutical Industry under the Ministry of Health:

Development and implementation of a sustainable development strategy for the pharmaceutical industry, including through the implementation of public-private partnerships, coordination of activities of pharmaceutical enterprises and organizations, implementation of programs to provide the population and public health institutions with medicines, medical devices and medical equipment.

The organization of studying the state of the pharmaceutical market, rendering assistance in mastering the production of new types of high-quality medicines that are competitive on the domestic and foreign markets, medical products and medical equipment, and their promotion to the world markets.

Conducting a systematic analysis of the state of providing the population and public health institutions with medicines, medical devices and medical equipment, including domestic production, developing on its basis proposals for further saturation of the domestic market and localization of production.

Assistance in the modernization of equipment and technological re-equipment of the pharmaceutical industry, the wide attraction of foreign investments, including the funds of foreign and international financial institutions.

Organization of scientific and research works for the further introduction of innovative technologies in the production of medicines, medical devices and medical equipment.

Direct participation in the development of proposals to improve the list of socially important medicines and medical products, as well as the preparation and submission of proposals for the establishment of fixed prices on them.

Assistance to domestic producers of medicines, medical devices and medical equipment in the organization of cooperation with leading foreign pharmaceutical companies.

Assistance in the development of criteria for the recognition of medicines, medical devices and medical equipment with domestic products.

State registration of medicines, medical products and medical equipment.

Maintenance of the account and conducting of the register of the medical technics, maintained in public establishments of public health services, and the analysis of their condition.

Organization of centralized purchase of medicines, medical devices, medical equipment and special medical vehicles for state health institutions.

Creation and maintenance of the network of social pharmacies of the Ministry of Health of the Republic of Uzbekistan.

By order of the Minister of Health of the Republic of Uzbekistan on May 22, 2019, №76 "On approval of the list of orphan medicines intended for the treatment of rare diseases" (Registered by the Ministry of Justice of the Republic of Uzbekistan dated June 7, 2019, Registration №3164).

The order includes a list of Orphan medicines intended for the treatment of rare diseases 129 international non-proprietary names of medicines: 15 of them are complex medicines, 65 groups of diseases according to the international classification of diseases, 72 names of diseases (their synonyms), 81 codes according to the international classification of diseases (ICD -10).

By order of the Minister of Health of the Republic of Uzbekistan on November 12, 2019, №96 "On approval of the list of over-the-counter Medicines" (Registered by the Ministry of Justice of the Republic of Uzbekistan on December 6, 2019, registration № 3200).

The order includes a list of over-the-counter Medicines 192 international non-proprietary names of mono-Medicines by dosage forms and doses, 1032 complex Medicines by dosage forms and doses.

By order of the Ministry of Health of the Republic of Uzbekistan dated July 20, 2018, №41, "On approval of the list of essential medicines" (Registered by the Ministry of Justice of the Republic of Uzbekistan on July 27, 2018) registration № 3045 was approved, which includes medicines under different trade names for dosage forms and doses.

In the order of the list, the general list of essential Medicines includes 35 by pharmacotherapeutic group, 112 by pharmacotherapeutic subgroups, 404 international non-proprietary names, of which 686 refer to dosage forms and different doses.

The list of essential medicines for minors includes 33 by pharmacotherapeutic group, 108 by pharmacotherapeutic subgroups, 364 international non-proprietary names, of which 632 refer to dosage forms and different doses.

The list of essential medicines based on medicinal herbs includes 4 by pharmacotherapeutic group, 24 by pharmacotherapeutic subgroups, 52 international non-proprietary names, of which 71 refer to dosage forms and different doses [5].

**Results**

With the purpose of more rational use of budgetary funds, the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 204 of July 22, 2013 "On measures to further improve the procedure for providing medicinal products to certain categories of persons on a preferential basis" was adopted. According to Appendix No. 1 to this decision, a list of categories of persons eligible for preferential provision of medicines for outpatient treatment in outpatient clinics of the public health system was approved (Table 1).

**Table 1**

**List for out-patient treatment of categories of persons entitled to preferential provision of medicines**

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| --- | --- |
| **№** | Names of the disease |
| 1 | Patients with oncological diseases |
| 2 | Patients with tuberculosis |
| 3 | Leprosy patients |
| 4 | Patients with endocrine diseases "diabetes mellitus and diabetes" |
| 5 | Patients with mental illnesses |
| 6 | Human immunodeficiency virus  |
| 7 | Persons who underwent surgery for cardiac valve replacement and organ transplantation |
| 8 | Lonely pensioners in need of extraneous care |
| 9 | Participants and invalids of the war of 1941-1945, as well as persons equated to them |
| 11 | Participants of the labor front during the war years 1941-1945 |
| 12 | Persons with disabilities who participated in the liquidation of the accident at the Chernobyl Nuclear Power Plant |
| 13 | Soldiers-internationalists |
| 14 | Persons of retirement age who have served in nuclear firing ranges and other nuclear facilities |

The resolution noted, further improvement of the order of providing medicines to certain categories of persons on a preferential basis. The list of categories of persons entitled to preferential provision of medicines for out-patient treatment and on the procedure for preferential provision of certain categories of persons with medicines for out-patient treatment by way of preferential provision of certain categories of Medicines in out-patient treatment in outpatient clinics of the public health system [6]

To date, all pharmacy institutions, regardless of the forms of their property, work on the basis of this Decree and issue medicines on a preferential basis to persons suffering from the above diseases.

The main task of the Ministry of Health of the Republic of Uzbekistan is to provide the population with safe, effective, high-quality medicines and medical devices and medical equipment. So, the problem of effective and safe use of medicines is of great importance for doctors, medical and preventive institutions, pharmacists, specialists, employees of state and commercial structures and the population. The State Register of Medicines and Medical Devices and Medical Equipment Permitted for Use in Medical Practice of the Republic of Uzbekistan (State Register) serves as an objective and timely information on medicines.

Analysis of registration The State Register of medicinal products and medical devices, medical equipment, showed a tendency to progressive growth in registration indicators.

The main task of the Ministry of Health of the Republic of Uzbekistan is to provide the population with safe, effective, high-quality medicines and medical devices and medical equipment. The problem of effective and safe use of medicines is of great importance for doctors, medical and preventive institutions, pharmacists, specialists, employees of state and commercial structures and the population. The State Register serves as an objective and timely information on medicines.

The State Register includes a full list of medicines and medical devices and medical equipment, diagnostic aids, medicinal substances of foreign and domestic manufacturers registered by the State Unitary Enterprise" Center for Expertise and Standardization of Medicines, Medical Devices and Medical equipment" Agency for development of the pharmaceutical industry at the Ministry of Health of the Republic of Uzbekistan.

The State Register includes a complete list of medicines, medical devices, medical equipment, as well as Medicine substances of foreign and domestic manufacturers registered in the Republic of Uzbekistan by the State Unitary Enterprise "The State Center for Expertise and Standardization of Medicines, Medical Products and medical equipment" the Agency for development of the pharmaceutical industry at the Ministry of Health, as of January 2018. The State Register contains information on medicines, the registration of which was canceled in 2017.

In accordance with the Law of the Republic of Uzbekistan "On Medicines and Pharmaceutical Activities", the State Register of Medicines, Medical Devices and Medical Equipment permitted for use in Medical Practice is published annually and is an official document for all organs, institutions and organizations involved in the circulation of medicines, medical devices and medical equipment.

The State Register in 2018 includes information on 9420 names of medicines registered in the Republic of Uzbekistan of medicinal products, including 4905 names of medicinal products of foreign countries, 1830 names of medicines produced by the Commonwealth of Independent States, 2685 names of medicines of domestic production, 621 names of substances, 20 names In vivo diagnostic tools, 628 names In vitro diagnostic tools, 1194 items of medical products and 1777 names of medical equipment produced by 1300 foreign companies from 78 countries, as well as domestic manufacturers.

In the State Register, the reported data on medicinal products include commercial and international non-proprietary names or other names, dosage form, dose, form of release, pharmacotherapeutic group, data on medical devices and medical equipment include the name, model, data on medicines, medical devices equipment and medical equipment include the type, country, name of the manufacturer, date of issue and serial number of the registration certificate.

In the State Register is intended for a wide range of specialists in the field of public health and Medicine treatment.

**Figure 1. Analysis of the dynamics of the State Register: medicines of foreign countries**

According to the data of our study, according to the State Register, the medicines of foreign countries increased in 2023 grew by 1997 against by 3.21 times.

**Figure 2. Analysis of the dynamics of the State Register: medicines of the countries of the Commonwealth of Independent States**

According to our study, according to the State Register, medicines of the countries of the Commonwealth of Independent States increased in 2023 grew by 1997 against – by 4.63 times.

**Figure 3. Analysis of the dynamics of the State Register: Domestic Medicines**

According to the data of the research on the State Register, domestic medicines increased in 2023 grew by 1997 against – by 14.85 times.

**Figure 4. Analysis of the dynamics of the State Register: Domestic Medicines**

According to the data of the research on the State Register, Substances of medicines increased in 2023 grew by 1997 against – by 12.80 times [7, 8].

The quantitative indicators of registration of medicines are intensively increasing, which is one of the factors of improving the country's economy

**Discussion**

Studies show that it is necessary to purchase only those branded and original Medicines that are not produced by domestic enterprises with the currency allocated by the state. An example is the Medicines used in the treatment and prevention of bronchial asthma, chronic obstructive pulmonary disease, diseases of the cardiovascular system and malignant neoplasms. For example, domestic pharmaceutical manufacturers do not produce a Medicine in the form of an aerosol that is effective in the treatment of allergic rhinitis [9], bronchial asthma [10] and chronic obstructive pulmonary disease [11].

Today, the situation of the market economy and the above factors have noticeably affected the provision of medicines and medical devices because imported Medicines and medical devices are purchased in foreign currency. Prices for products exported by the Republic of Uzbekistan have recently decreased due to the global scale with infection. This, in turn, creates some problems when paying for the import of Medicines and medical devices. Therefore, as noted, the support of domestic enterprises in these conditions is one of the priority tasks.

Based on research aimed at studying the pharmaceutical market and the production of medicines from local raw materials, determining the need for highly effective medicines and introducing them into production, we considered it appropriate to provide the following proposals.

Firstly, assistance to the pharmaceutical industry in fully informing consumers about medicines and medical devices produced by domestic enterprises.

Secondly, support for intermediary activities between the joint-stock company "Dori-darmon" and wholesale pharmaceutical companies in the sale of Medicines and medical devices of domestic production.

Thirdly, the purchase of medicines and medical products of domestic production by medical and preventive institutions.

Fourth, the provision of information to the public on the benefits of purchasing medicines - generics of domestic production, instead of purchasing expensive foreign medicines.

Fifth, the adoption of measures to stimulate the production of generic Medicines by domestic pharmaceutical companies, replacing the import of expensive foreign Medicines.

The implementation of these proposals will stabilize the pharmaceutical market, bring the supply and demand for medicines and medical devices into line, domestic pharmaceutical enterprises and firms, including the Dori-Darmon Joint-Stock Company, to get out of the situation under the influence economically.

In today's condition, it is economically necessary to strengthen and expand the use of medicines and medical devices of domestic production.

With the aim of constant updating the State Register, the most highly effective medicines should be selected from among the medicines imported from abroad and their use should be scientifically substantiated.

To improve the provision of the population and medical institutions with medicines and medical products, taking into account the limited financial resources allocated by the state budget, it is necessary to use effectively existing funds, which, in turn, will make medicines available.

Measures should be taken to produce medicines and medical devices by domestic enterprises that correspond to foreign counterparts.

It is necessary to improve the quality indicators of medicines and medical devices of domestic production.

The object of research is the Ministry of Health (MH) of the Republic of Uzbekistan

Processes of correct in the pharmaceutical market of Uzbekistan organizing, formation, development and coordination the system for provision with medicines used by patients using pharmacoeconomic analysis.

Recommendations were given on the range of Medicines that are priority for import at the expense of the state budget, as well as Medicines from local manufacturing enterprises that replace imported ones.

**Conclusions**

In today's conditions, it is necessary to expand the use of medicines and medical products of domestic production.

In order to continuously update the State Register State Unitary Enterprise "National Center for examination and standardization of medicines, medical devices and medical equipment" Agency for the pharmaceutical industry under the Ministry of Health The Republic of Uzbekistan should be selected from the list of medicines imported from abroad the most highly effective medicines.

It is necessary to take measures for the production by domestic enterprises of medicines and medical products, medical equipment corresponding to foreign analogues. It is necessary to improve the quality indicators of medicines, medical devices and medical equipment.

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