



Policy Research Paper №77

Evaluation of implementation and effectiveness of the State Drug Policy of the Kyrgyz Republic for 2007-2010

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Abbreviations

BA	Bronchial asthma
WHO	World Health Organization
SDP	State Drug Policy
FGP	Family Group Practicies
MHI ADP	Aditional Drug Package of the Mandatory Health Insurance Fund at outpatient level
D&MED	Drugs and Medical Equipment Department
HTN	Hypertension
MoH of the KR	Ministry of Health of the Kyrgyz Republic
EDL	Essential Drug List
RD	Regulatory Documents
INN	International Non-proprietary Name
MP	Medical Products
CG/CP	Clinical Guidelines/Clinical Protocols
Ds	Drugs (Pharmaceuticals)
HF	Health Facilities
TD (MHIF)	Territorial Department
FAP	Feldshe-Accoucheur Point
MHIF	Mandatory Health Insurance Fund
EDF	Essential Drugs Formulary
FMC	Family Medicine Center
GU	Gastric Ulcer

1. Background

The most important activities, aimed at providing the population with high quality and effective drugs and ensuring their rational use, were development and implementation of the State Drug Policy (SDP) at the state level, which is an important part of national health policy.

The format of the document was proposed by the World Health Organization (WHO) and it was focused on countries with limited financial resources, and it is the result of the state activities aimed at achieving the goals of drug supply for the population.

In 1998 the Government of the KR has approved its first SDP, designed to improve public health through better access to safe, effective and high-quality drugs, which is periodically reviewed (2001, 2007) to reflect changing priorities.

Priority directions of SDP, adopted in 2007, were coherent with the objectives set out in the National Health Care Reform Program of the Kyrgyz Republic «Manas Taalimi» for 2006-2010.

Currently, there is significant progress achieved in the development of the pharmaceutical sector: the drug-related legislation is developed and approved; the state system is built to control and supervise drug circulation. However, despite of ongoing efforts, issues related to drug quality control are of paramount importance, as there is potential danger that substandard or counterfeit drugs are available on the market due to weakened system of drug regulation and imbalanced policy of the Government in regards to commitments made under the State Drug Policy and the policy of the Government of the KR on improvement of business environment in Kyrgyzstan.

The legislation does not provide the regulatory body – Department of Drug Supply and Medical Equipment under the Ministry of Health - with authorities to control the market to the full extent: sharp reduction in the number of inspections and abolition of the mechanism of unexpected inspections. This is confirmed by results of the independent study, conducted to review the quality of drugs which are in circulation in pharmacies of different regions of the Republic: on average, 18% of samples purchased in pharmacies for testing were not certified by DDS&ME (drugs that came to the market by illegal ways), there were found 19% of samples, which raised doubts on various parameters: description, labeling and authenticity.

Issues related to drug availability for rural population, which accounts for around 66% of the population are also of high relevance. To solve out these tasks activities are carried out, which are aimed at improving the availability of drugs for rural population by reviewing standards that regulate activities of small-scale rural pharmacy network and authorization, issued for medical professionals (doctors and nurses after appropriate training) to sell drugs with the right to open pharmacies in rural settlements under FGPs and FAPs. At the present time there were 212 certificates issued for medical professionals to carry out these activities. However, currently there is no data on performance of retrained specialists, working in the pharmacies in remote villages.

It should be noted that according to WHO recommendations the regular assessment on introduction of SDP shall be conducted. In the framework of the project "Reorganization of the health sector I and II" (1998-2005), funded by the World Bank, the regular assessment has been conducted in the period from 2001 to 2005 to review SDP, adopted in accordance with WHO guidelines "Key indicators for assessment of pharmaceutical situation in the country". Based on research results the drafts of the following SDP have been developed.

Having said this, it is necessary to assess implementation of the third SDP in connection with the completion of its implementation period, including the analysis of drug accessibility for the rural population in order to develop recommendations for revision and development of SDP for the period of 2013-2016. As part of this study it is planned to establish a working group to review and to develop the next draft of SDP.

2. Goal and objectives of the evaluation

Goal:

To assess the State Drug Policy (SDP) (2007-2010) and to analyse its effectiveness with a view to making recommendations for review and development of the draft of the State Drug Policy of the KR for 2013-2016.

Main issues:

1. Evaluation of SDP as of the policy document, the structure, implementation mechanisms, monitoring and evaluation tools.
2. What are the actual results of SDP implementation and to which extent they fulfill the stated objectives?
3. What are the priority directions for further work to ensure access to effective, safe and high-quality drugs?

Research objectives:

1. Review of the current state of drug supply for the population of the country

In the framework of this objective there was conducted the analysis of existing regulatory framework (including policies, programs, laws and other documents, regulating drug circulation), an infrastructure, a range and volume of the drug market. In this regard, the analysis was conducted to review existing documents that regulate pharmaceutical activities and the performance indicators of the body, which is responsible for drug circulation - the Department of Drug Supply and Medical Equipment

2. Analysis of physical accessibility and affordability of drugs for the population

In the framework of this objective the comparative analysis was conducted to review availability of drugs for urban and rural population in terms of (a) accessibility, and (b) affordability. To do this there was also used the data obtained from household surveys and other available studies, as well as data was collected on the basis of standardized indicators according to WHO methodology. According to WHO methodology the research forms have been adapted: to determine the physical accessibility of drugs there was developed the list of drugs that were used for the most common diseases (25 items). Review of drug affordability was based on the cost analysis of a treatment course for three common diseases (hypertensive disease, gastric ulcer and asthma brochiale)

3. Description of mechanisms that ensure drug safety and quality

In the framework of this objective there were reviewed the mechanisms that have been established to ensure the drug quality in the country. There were analysed existing documents, including reports on other studies, as well as interviews with key persons, involved in the implementation of these mechanisms.

4. Analysis of factors that influence on effectiveness and rational use of drugs

As part of this problem there have been considered issues that ensure effective and efficient use of drugs, such as (1) the introduction of tools to improve rational use of drugs at health care organizations (EDL Formulary, EDL, CG/CP), (2) review of drug prescription practices used by physicians at primary level (FMC) based on analysis of outpatient cards (3) drug dispensing at pharmacies (prescriptions issued by physicians and drug dispensing at pharmacies).

3. Evaluation materials and methods

3.1. Data collection methods

To collect data on the objectives there were used the following methods:

- 1. Analysis of secondary sources of information**, including analysis of statistical data and research data, reports of various organizations, as well as legal documents and other relevant sources of information.
- 2. Conducting interviews** with MoH staff and key persons, involved in the implementation of State Drug Policy. This method was used to determine the effectiveness of interventions implemented in the country, and to define factors that influence on effectiveness, as well as to identify areas requiring further efforts.
- 3. Conducting semi-structured interviews** with medical staff of health care organizations (FMC) to analyse their drug prescription practices, as well as with the public to determine the drug dispensing practices of pharmacies.
- 4. Data collection based on standardized research forms** taken from WHO guidelines manual "Core indicators on country pharmaceutical situation" to study physical accessibility and economic affordability of drugs and drug prescription practices of physicians prescribing issues.

3.2. Research materials

1. The format of WHO guidelines "Core indicators on country pharmaceutical situation", June 2001,
2. "How to investigate drug use in Health facilities", Action Program on Essential Drugs, WHO, Geneva,
3. Indicators for monitoring and evaluation of implementation of State Drug Policy of the Kyrgyz Republic for 2007-2010, approved by the Order of the Ministry of Health of the KR dated March 19, 2007 # 123.
4. The research data "Health conditions, medical care and out-of-pocket costs of patients" (2001-2010), "Assessing the impact of initiatives of rural pharmacies on drug availability in Kyrgyzstan" (2007).
5. Policy Research Paper "Analysis of factors that influence on the use of generic drugs" HPAC, 2009.
6. Automated system for registration of pharmaceutical products imported into the customs area of the KR (automated program for imported drugs and medical devices), Department of Drug Supply and Medical Equipment under the Ministry of Health of the KR.
7. Register of licensees engaged in pharmaceutical activities in the KR, automated system for registration of legal and natural persons, engaged into pharmaceutical activities in the KR.

3.3. Selection of organizations and regions

The research was conducted in Bishkek City and three oblasts of the Republic: Osh, Issykul and Chui oblasts.

Institutions to be examined were selected by random sampling. All institutions of these oblasts were numbered and then 6 FGPs were selected by factory method of random numbers in every oblast (Table 1).

There was no preliminary sampling of pharmacies made for data collection purposes. In the course of the research there were selected two pharmaceutical institutions in each oblast that were geographically closest to each of the previously defined health care facilities (FGP), in other words these were closest pharmacies where patients could buy medical drugs, prescribed by physicians. In

addition, these pharmacies were supposed to have a contract with TU MHIF to be able to work under Additional Package of MHI.

Table 1. Institutions covered by the research in the breakdown by rayons

Regions	Number of FGPs	Number of pharmacies
Bishkek City, total	6	6
FMC №5	2	2
FMC №2	2	2
FMC №15	2	2
Issykul oblast, total	6	6
Karakol City	2	2
Tup rayon	2	2
Aksuu rayon	2	2
Chui oblast, total	6	6
Tokmok City	2	2
Sokuluk rayon	2	2
Issyk-Ata rayon	2	2
Osh oblast, total:	6	6
Karasuu rayon	2	2
Nookat rayon	2	2
Osh City	2	2

3.4. Selection of FGP physicians

To participate in the survey there were involved all family physicians of FGPs that were present at the workplace at the time of the study. The survey of physicians was conducted anonymously.

In total there were surveyed 122 physicians of three regions of the KR and Bishkek City. Table 2 presents territorial distribution of respondents. The average working experience of respondents made up 21.8 years.

Table 2. Territorial distribution of respondents

Oblast	Number
Bishkek	33
Issykul oblast	28
Osh oblast	32
Chui oblast	29
Total	122

3.5. Selection of out-patient visits

Identification of indicators of rational drug use, namely, the drug prescription practices used by physicians (the average number of drugs prescribed per visit, the percentage of prescribed antibiotics and injecting drugs, and the percentage of drugs prescribed under EDL) was based on the working practices of FMC doctors used in the treatment of various acute and chronic diseases. Outpatient visits were considered retrospectively based on data registered in medical records – outpatients' cards. For research purposes in each institution (FPG) there were collected 20 outpatient cards and patients' visits were reviewed for the period from January 2010 to September 2011.

3.6. Selection of patients

In order to study the practices of the population, related to purchase of drugs in pharmacies the survey of patients was carried out to interview those patients who have visited physician and came to pharmacies to get drugs. For this purpose, in each pharmacy there were surveyed and observed 30 patients, the total number of patients interviewed was 720 people.

4. Evaluation results

4.1 Review of SDP: structure, introduction mechanisms, M&E

4.1.1. Prerequisites for development and introduction of SDP in Kyrgyzstan

Before economic reforms has started in the Kyrgyz Republic there existed organizational model of pharmacy network, which was well combined with the administrative management system. Pharmaceutical provision for the public and health care facilities was organized at the central level. Since the country has started transition period to the market economy the pharmacy network was privatized, except for hospital pharmacies. With the collapse of the centralized supply chain and drug supply management the pharmaceutical sector has experienced some crisis that was exacerbated by limited funding in the health care sector. During this period it was difficult to determine what and how to implement to overcome the difficulties of transition period without having well developed and officially adopted State Drug Policy. Among the prerequisites for development of national policy there were also insufficient public access to drugs and the necessity to increase rational use of drugs in health facilities.

In this regard, the consultative meeting of WHO was held in September 1994 to launch the development of drug policy document. At this meeting, together with WHO experts there were identified the purpose and main objectives of future policy of Kyrgyzstan in the field of drug supply for the population.

The final draft of drug policy paper was developed in December 1997 at the workshop organized by WHO with the participation of representatives of the Presidential Administration, the Government of the Kyrgyz Republic and the Parliament of the Kyrgyz Republic, international organizations and public organizations.

This draft has been presented to the pharmaceutical community of the Republic for discussion at the Conference of pharmaceutical workers in December 1997. After discussion, the draft Action Plan for implementation of the State Drug Policy has been submitted to the Government of the Kyrgyz Republic for approval and was adopted by the Decree of the Government of the KR on December 4, 1998 № 794 "On the State Drug Policy of the Kyrgyz Republic".

With the adoption of the first State Drug Policy in Kyrgyzstan there were established mechanisms and institutions with the help of which the regulation of pharmaceutical activities has started. Due to the fact that most of the tasks defined by SDP have been resolved, and the health sector continued active reorganization process, it became necessary to revise the SDP.

To this end, in June 2001 the conference was held with representatives of the Presidential Administration, the Government of the Kyrgyz Republic, Jogorku Kenesh of the Kyrgyz Republic, WHO/Europe, the World Bank and other international organizations, medical and pharmaceutical community of the Republic to summarize the results of implementation of the State Drug Policy during the period 1998-2001 and to make recommendations on the development of the new draft of the State Drug Policy. At this conference WHO experts have given highly positive evaluation of the implementation of the drug policy in Kyrgyzstan.

With the assistance of WHO/Europe the second workshop was conducted in September 2001 to develop a plan of action to implement the revised State Drug Policy with the participation of all stakeholders.

The major focus of the seminar was devoted to the development of the Action Plan for implementation of SDP. The Plan has highlighted the main activities and defined deadlines and responsible persons.

The second draft of SDP and the Action Plan on implementation of SDP have been approved by the Decree of the Government of the KR dated October 15, 2002 № 704 "On the State Drug Policy of the Kyrgyz Republic".

With the adoption of the Action Plan on SDP implementation greater significance was attached to monitoring of its implementation and this connection in March-April 2001 a baseline study was conducted under support of European Regional Office of WHO and the World Bank to assess the SDP and the availability of essential drugs. In 2003 and 2005 there were conducted the following studies on SDP implementation.

Based on studies that were conducted to analyze SDP implementation, there was developed the third draft of SDP, which was approved by the Decree of the Government dated January 12, 2007 № 11 "On the State Drug Policy of the Kyrgyz Republic for 2007-2010".

The SDP for 2007-2010 was focused to ensure availability of drugs to the rural population of the country and to increase the volume of drug market and to fight against smuggling and counterfeit drugs, and to create information systems in the pharmaceutical industry. It should be noted that the development of this draft of SDP and the results of previous SDP have not been in fact as widely discussed by the Government, the parliament and other agencies as before, possibly due to the fact that international donors have determined that the process was streamlined and should be further implemented by efforts of governmental bodies.

4.1.2. SDP structure (2007-2010)

As the strategic document SDP for 2007-2010 has the goal and nine major objectives, which should contribute to achieving this goal. According to the statement of the main goal which is "Ensuring secure access of the population of the Kyrgyz Republic to highly effective, safe and high-quality drugs at affordable prices and their rational use" the drug policy can be divided into four areas:

1. to ensure physical availability of drugs;
2. to ensure affordability of drugs;
3. to ensure safety and quality of drugs;
4. to ensure effective and rational use of drugs.

In connection with these areas there have been formulated nine sections, which include brief description of the situation and the main directions of SDP. The document also has attachments such as an action plan, which is focused on nine major sections of the SDP and defines the purposes of activities, the list of events, deadlines and responsible persons.

Strengths

Among the strengths of SDP structure the following points can be noted:

1. Succession. The structure of existing SDP reflects WHO recommendations. The SDP for 2007-2010 was developed on the basis of consistency with the previous State Drug Policy (2001-2005) and the National Health Care Sector Reform Program "Manas Taalimi" for 2006-2011.

2. Orientation to significance of events. The development of the document was carried out taking into account the results of monitoring over implementation of the State Drug Policy in the KR.¹ The SDP, implemented in the period from 1998 to 2005, has promoted qualitative changes and dynamic development of the pharmaceutical sector of the country. However, problems related to access of the population to drugs and their rational use, remained to be relevant and had political and social

¹ Report on monitoring of SDP implementation in the KR. ГYKB, DDS&MT, MHIF. Б.2005 .

importance, and therefore the majority of interventions were designed to address these particular issues.

3. Focus on feasibility. SDP directions and activities were developed taking into account not only the problems faced by the pharmaceutical sector, but also according to their prioritization and factual feasibility. Thus, the problems, which had no conditions to be resolved at that time, were taken into account, but the mechanisms to overcome them were not defined. That is, in general this document was focused on the feasibility of the planned measures.

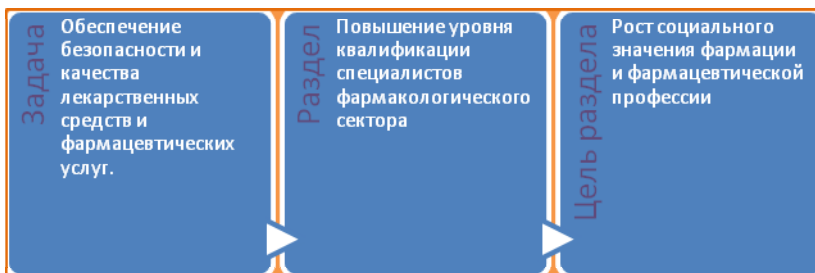
Weaknesses

1. Vague definition of problems. The definition of objectives given by strategic document shall announce expected results, to which this policy is oriented. In the reviewed document the definition of problems is not always clear and not always provides for orientation to the definition of the expected result. Some of them virtually duplicate the goal, such as "*Providing people with available, effective, safe and high-quality drugs*", others are formulated as specific activities: "*to create employment opportunities in the pharmaceutical sector*" or "*to introduce the List of Essential Drugs*". The definition of some objectives indicates several areas at the same time: "*Development of drug-related information system, the development of effective measures to inform professionals and the public*".

2. The logical connection between the components of the document. Not all components of the document (purpose, objectives, sections and plan of action) have a logical relationship to each other (**Attachment 1, Figure 1**).

Few sections are focused on achievement of certain objectives, while other tasks remain almost uncovered, or the link between the objective (expected outcome) and the section that describes activities to achieve it, is not obvious. Names of some sections and their sub-items are not linked to the general definition of goals and objectives. In terms of activities the goals of some sections do not always coincide with the general objectives of SDP (Figure1). The main factor that contributes to inadequacy of SDP logic is poorly developed definition of the problem.

Figure 1. Example of logical link between SDP components



Objective is to ensure safety and quality of drugs and pharmaceutical service

Section is to increase the qualification level of specialists in the pharmacological sector

The goal of the section is to ensure the growth of the social value of pharmacological sector

4.1.3. SDP implementation mechanisms

As part of the State Drug Policy there was planned to implement 62 activities. MoH was appointed to be the main executor of SDP and its involvement was indicated in 49 activities. Participation of DDS&MT was indicated in 30 activities. In addition, the implementation of SDP has involved other ministries and government agencies (11 activities), international organizations, including WHO (9 activities), educational institutions (9 activities), MHIF (5 activities), NGOs (6

activities). In total there were 15 different ministries and departments identified as parties responsible for SDP implementation.

Analysis of Action Plan for SDP implementation has shown that for the most part these were those activities carried out that reflect the major functional duties of DDS&MT, while most of the activities that requires multisectoral collaboration were left unrealized.

For example, the activity "*In cooperation with the State Customs Inspection under the Government to develop the plan of action for the period till 2010 to stop illicit drug trafficking in the Kyrgyz Republic*"² requires the involvement of the Ministry of Health, the State Customs Inspection and of other agencies. Formally, the plan was developed and approved, but activities were not implemented.

Another unrealized activity was "To develop the mechanism to retain specialists with higher and secondary pharmaceutical education to work in villages"³, under which local state administrations and local authorities were identified as a responsible side. The main reason for difficulties faced during the implementation of activities, requiring multisectoral approach and involvement of institutions of the governmental level, were associated primarily with the unstable political situation in the country, which was caused by frequent changes of the Government and heads of relevant ministries and agencies. Frequent early Parliamentary and Presidential elections, determined by complex political situation, diminished the priority of SDP implementation.

4.1.4. Monitoring and evaluation (M&E) of State Drug Policy

M&E system of State Drug Policy includes the following components:

- 1) Action Plan, approved by the Order of the Ministry of Health of the KR № 123 (19 March 2007);
- 2) M & E indicators to evaluate the introduction of State Drug Policy of the KR for 2007-2010, including identified indicators, units of their measurement, frequency and source of data collection and responsible staff, approved by the Order of the Ministry of Health of the KR № 123 (19 March 2007).
- 3) According to this Order the overall management and coordination of the Action Plan on SDP implementation was assigned to DDS&MT. The Order of the Ministry of Health has also defined the responsible structures involved in the process of SDP implementation with respect to reporting on implementation indicators.

Strengths

- (1) **Succession.** The structure of M&E plan corresponds to the plan of activities and includes performance targets for all SDP sections. Thus, monitoring of SDP allows to monitor the process of SDP implementation.
- (2) **M&E tools.** M&E system of State Drug Policy includes both the routine data collection on implementation of key activities and researches, related to achievement of results, effectiveness and impact of SDP. During the years 2007-2010 there have been several studies conducted that directly or indirectly were related to these questions, including "Review of factors, influencing on the use of generic drugs" and "Health conditions, medical visits and pocket costs of patients"⁴.

² Activity 5.6.

³ Activity 4.3

⁴ Researches were conducted by HPAC under support of WHO/DFID. Analytical reports are available at the website www.hpac.kg

Weaknesses

- (1) **No section on indicators for goals and objectives of SDP.** State Drug Policy is the framework document, which should focus on long-term goals. But the package of SDP indicators does not provide for separate section on indicators, related to goals and objectives. Some indicators, related to the impact and effectiveness of the policy, are included to the list of indicators for activities.
- (2) **The definition of indicators.** The package of indicators includes the list of indicators and units of their measurement, however the baseline and target values of indicators are not defined. The definition of indicators do not always correspond to SMART formula⁵ (Figure 2).
- (3) **One executor.** The development, implementation, monitoring and evaluation of the state policy were assigned, in fact, to one executor: Department of Drug Supply and Medical Equipment. Such system can not be sufficiently effective due to lack of function of external control over the implementation and achievement of results.

Figure 2. Examples of indicators that do not correspond to SMART

SDP indicator	Weaknesses
The number of developed clinical protocols	Lack of target indicators, non-conformity with SMART
Changing prices of monitored drugs from EDL	Lack of target indicators, non-conformity with SMART
Affordability of key drugs to treat monitored diseases	Lack of target indicators, non-conformity with SMART

4.2. Review of the current situation with drug supply for population

4.2.1 Review of major normative documents that regulate pharmaceutical activities

According to approved SDP one of the most important conditions to ensure provision of population with safe and high-quality drugs is constant improvement of legislation for pharmaceutical industry. The major tasks that were planned as part of the SDP implementation were to develop the number of bylaws and regulations for enforcement of the Law of the KR "On pharmaceutical products" and to develop regulations that promote rural pharmacy network, legal compliance with the requirements of corresponding documents to ensure the safety and quality of drugs and to take measures to toughen administrative and criminal penalties for violation of drug production procedures, the illegal importation and distribution of drugs.

As part of SDP implementation the serious work was carried out to develop and revise the legislation that regulated relations in the sphere of drug circulation. The most important law in the field of drug circulation is the Law "On pharmaceutical products", which came into force on April 30, 2003. The law created the legal basis for the subjects of drug circulation and defined the powers and responsibilities of executive authorities in the sphere of drug circulation and established uniform requirements to drug circulation in the Kyrgyz Republic.

Under this Law the regulation of drug circulation market is the responsibility of the Ministry of Health and is carried out by authorized agency Department of Drug Supply and Medical Equipment (DDS&MT under MoH KR). DDS&MT is responsible for all decision-making activities, including technical expertise related to authorization procedures for drug usage in the country, imports of drugs, quality control and other licensing activities, except for the regulation of narcotic and psychoactive drugs and precursors. The turnover of narcotics, psychoactive substances and

⁵ S (specific)M (measurable) A (achievable) R (realistic) T (time-bound)

precursors is regulated by the Law of the KR "On Narcotic Drugs, Psychoactive Substances and Precursors" (1998). According to this Law all regulatory functions of legal and illicit turnover of drugs and psychoactive substances are maintained by the State Service of Drug Control of the Kyrgyz Republic.

The Law "On Licensing" (1997) regulates the state licensing of structures, engaged into drug turnover (import, wholesale and retail sale of drugs and medical items, drug production).

It should be noted that the revision of legislation in order to strengthen the responsibility of structures, engaged into drug turnover, and to provide high-quality and safe drugs has been hampered due to liberalization, introduced by the Government of the Kyrgyz Republic to promote entrepreneurship and to reduce governmental interference in business processes. In January 2009 the Government has adopted the strategy to improve the investment environment and to support businesses in order to remove barriers for businesses, and therefore, all agencies shall eliminate norm that contradict to the law. The Ministry of Health of the KR as the pilot organization has become one of the first ministries, which has conducted such analysis, also DDS&MT has carried out the analysis of the pharmaceutical sector to review the regulatory impact of authorization documents. Based on results of the analysis the number of required authorization documents for businesses and individuals, engaged in pharmaceutical activities, was reduced by 75%. So, on the basis of the Decree of the Government of the KR dated June 5, 2009, # 367 "On amendments and additions to the Decree of the Government of the Kyrgyz Republic from February 25, 2004, N 103 "On Approval of the Register of authorization documents, issued by executive authorities and their structural subdivisions" "The attestation certificate for pharmacy premises", "Certificate of drug analysis", "Certificate of the specialist, working in the field of pharmaceutical medicines" were excluded from the Register. Currently, the Registry includes only "Certificate on state registration of drugs".

In accordance with the Law of the KR "On Procedures for conducting inspections of business entities" the scheduled inspections of pharmaceutical organizations are conducted once a year with notification to be done 10 days prior to the inspection visit. This legislation, which orders inspections of pharmaceutical organizations, does not provide DDS&MT with real powers to control drug market and, accordingly, puts consumers at risk, since the pharmaceutical activities are not separate from other activities, being a part of the health care system, which requires special professional inspections. Therefore, in 2011 the new approach has been introduced to conduct inspections of business entities. Thus, in order to enforce the Article 2 of the Law "On Amendments and Additions to the Law "On procedures for inspections of businesses" № 121, the Department developed "Criteria for assessing the risks, related to activities of legal entities and individuals, engaged into production, manufacture and sale of drugs and medical products".

Developed criteria are quantitative and qualitative performance indicators of pharmaceutical organizations, allowing to attribute them to different degrees of risk.

In developing the criteria there were taken into account the specific features of drugs, benefit/risk ratio for patients, as well as the requirements to pharmaceutical objects, developed to ensure the safety and quality of medicines and medical products.

Analysis, assessment and risk control of businesses and individuals in the area of production, manufacture and sale of drugs and medical products will reduce the number of inspections for bona fide pharmaceutical organizations and will focus inspectorial activities to examine objects with a high degree of risk.

In general, in order to optimize further drug circulation area, it is necessary to continually improve the legislation. The legislation should be developed jointly with all stakeholders and agencies and shall be available to all interested parties. The involvement of interested parties and stakeholders in the development and implementation of the legislation and regulatory provisions will allow them to learn about their rights and obligations and to require adequate performance. This, in turn, will

promote the fulfillment of the prescribed provisions of the law as they were formulated with the full participation of stakeholders and parties.

4.2.2. Pharmaceutical market

In recent years, the drug market of the KR is dynamically developing, being expanded through opening new pharmaceutical organizations and increasing the range of drugs and medical products and by increasing import volumes and production rate of domestic producers.

As of 01/12/2011, it has been officially approved to use 6752 names of pharmaceutical products on the territory of the Republic, which were listed in the State Register of Drugs permitted for use. Out of them drugs made up 4344 and medical products made up 1774, dietary supplements made up 343 and drugs used for the treatment of animals made up 291. In addition, in accordance with the Law of the KR "On pharmaceutical products" the list of drugs, which are not registered but are allowed for use, is annually reviewed and approved. The Order of the Ministry of Health of the Kyrgyz Republic from December 15, 2011, N 630 has approved procedures for development of the List of drugs, approved for importation and use in medical practice on the territory of the Kyrgyz Republic. Currently this List includes 1749 names of drugs.

Table 3 shows the dynamics of registered pharmaceutical products developed in the past six years. As the table indicates, the number of registered pharmaceutical products increased twice as compared to 2006.

Table 3. Dynamics of registered pharmaceutical products, 2006-2011

Year	2006	2007	2008	2009	2010	2011
The number of registered pharmaceutical products	3143	3458	4228	5284	5950	6752

It should be noted that some developed European countries have the list of drugs, authorized for use in the country, which do not exceed 1000-2500 names.

This list of drugs authorized for use in the Republic does not indicate that all essential drugs are available for the population. At the present time there are still issues that remain unresolved in terms of affordability and availability of narcotic analgesics and oncology drugs on the market.

Analysis of current EDL of the KR shows that the composition of this list includes 51 drug names that are not registered in the KR (16%), and therefore they can not be used and imported into the country. In 2011, there were not imported to the country 63 drug names (15%) that were included to EDL of the KR of 2009. For example, these were halothane from the list of drugs used for inhalation anesthetics, phenytoin from the list of anticonvulsants and antiepileptic drugs, dobutamine from the list of drugs which regulate adrenergic peripheral processes, procainamide from the list of antiarrhythmic agents, 9 drugs from the list of hormonal drugs and their synthetic analogues, 6 drugs from the list of plasma-replacing solutions and means for parenteral nutrition and blood products, 4 drugs from the list of antiviral agents, 6 drugs from the list of cytostatics, and 12 drugs from the list of vaccines, serums, toxoids and immunoglobulins⁶.

One of the important parts of SDP is the development of domestic drug production. According to SDP it was planned to establish the production of essential drugs in accordance with international

⁶ EDL of the KR: Who recommendations and realias of today, A.A. Zurdinova, T.S. Sabirova, A.Z. Zurdinov, G.A. Kulushova

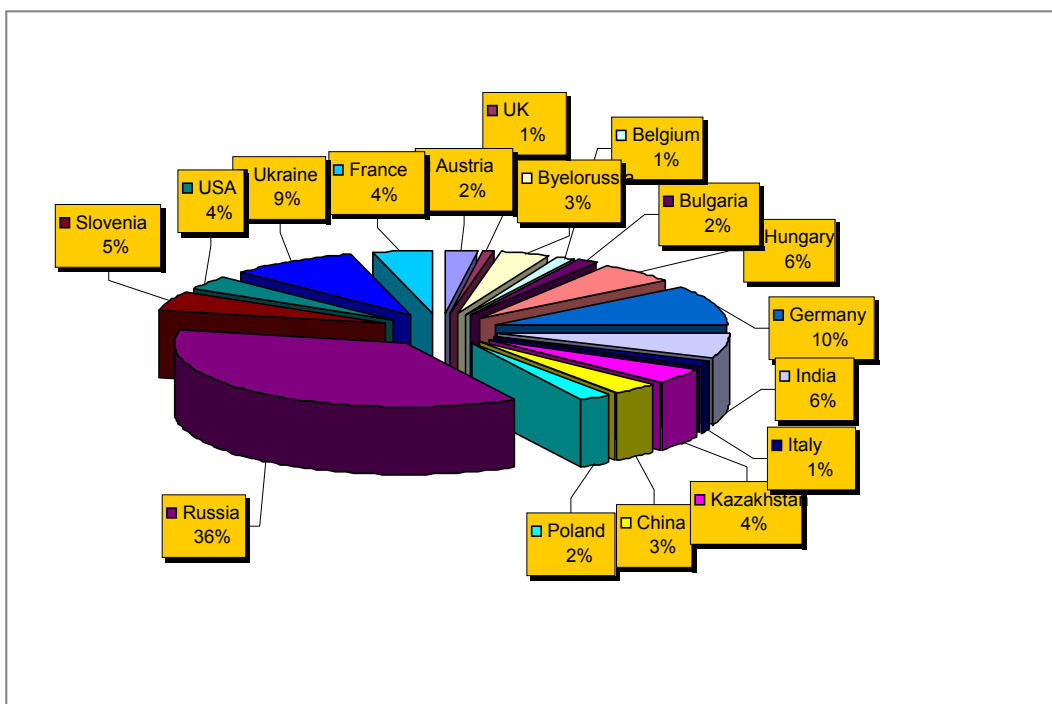
standards (GMP), to prepare and train inspectors and to develop the state order for production and supply of essential drugs.

Local manufacturers produce 218 drug names and 42 names of medical products. Today, however, the domestic production is focused mainly on the production of herbal medicines, medicinal herbs, dressings and packing of ethyl alcohol. There is developed production of the small range of tablet and injection forms: 24 names of suppositories, 16 names of tableted and encapsulated drugs, 12 injecting drugs, mainly these are infusion solutions (physiological solution, glucose solution, sodium chloride, etc).

Therefore, for today Kyrgyzstan is the country which is almost totally import-dependent on drugs, which are imported from 60 countries. Thus, drugs, imported from Russia, account for 32%, drugs imported from Ukraine - 5%, from Belarus - 3%. As to far away countries most of all imported products come from Germany - 8%, Slovenia and Hungary - to 7%, Indian drugs account for 5%, France - 4%. (Fig. 3).

Figure 3. The structure of imported drugs in terms of value

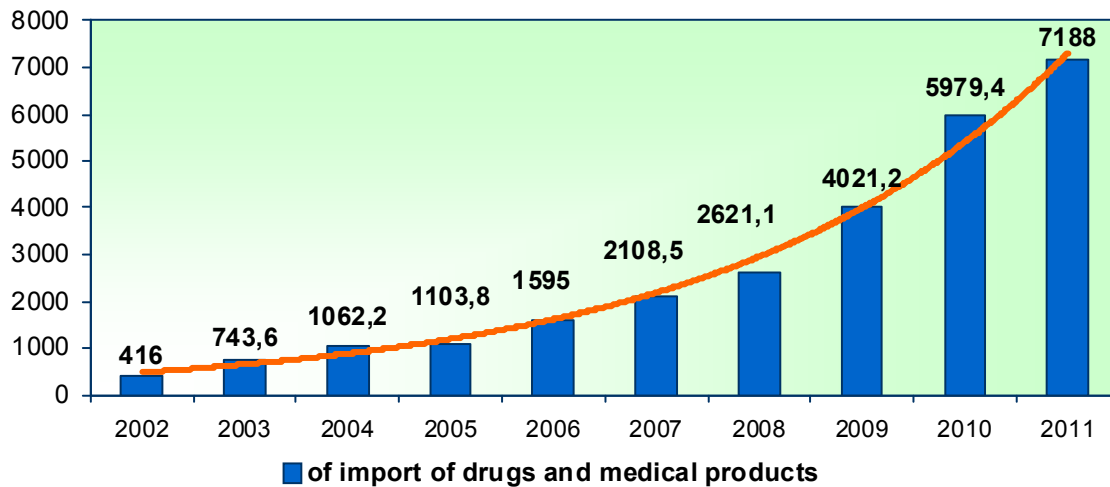
Comparative data on the structure of imported drugs in the KR in 2010 in a breakdown by manufacturing country



In recent years there has been observed a significant increase in the volume of imported drugs into the country. Most probably Rather, the liberal tax and medicines contributed to that (since 2003 in Kyrgyzstan there has been abolished the VAT on the imported drugs upon entry to the country), and the drug market is very attractive for marketing and sales activities for many foreign pharmaceutical manufacturers and distributors.

Thus, from 2002 to 2011 the volume of imported drugs and medical products to Kyrgyzstan has been constantly increasing in terms of customs value prices, and in comparison with 2002 it has increased by 17 times from 416 million soms to 7188 million soms (Figure 4). And since 2008 there is an annual increase of imported volume by 50%.

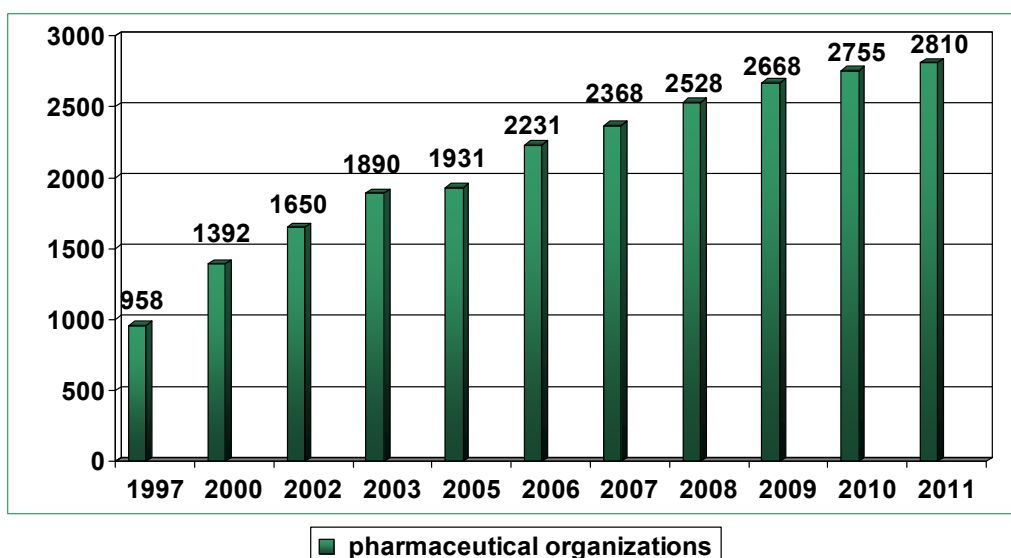
Figure 4. Dynamics of the volume of pharmaceutical market in the KR, 2002 - 2011
IMPORT



With the increase of imported volume and the range of drugs, respectively, there was an increase in the number of businesses that are engaged in the import and sale of drugs. As of December 1, 2011, in the Republic there were operating 2810 pharmaceutical organizations: of these 955 were pharmacies, 863 were pharmacy points, 65 pharmacies under health care organizations and 418 pharmacy kiosks, 41 optics shops and 13 medical goods stores, 246 wholesale warehouses and 92 warehouse for medical products, 34 pharmaceutical manufacturing organizations. The vast majority of pharmacies have private ownership as a legal or natural persons.

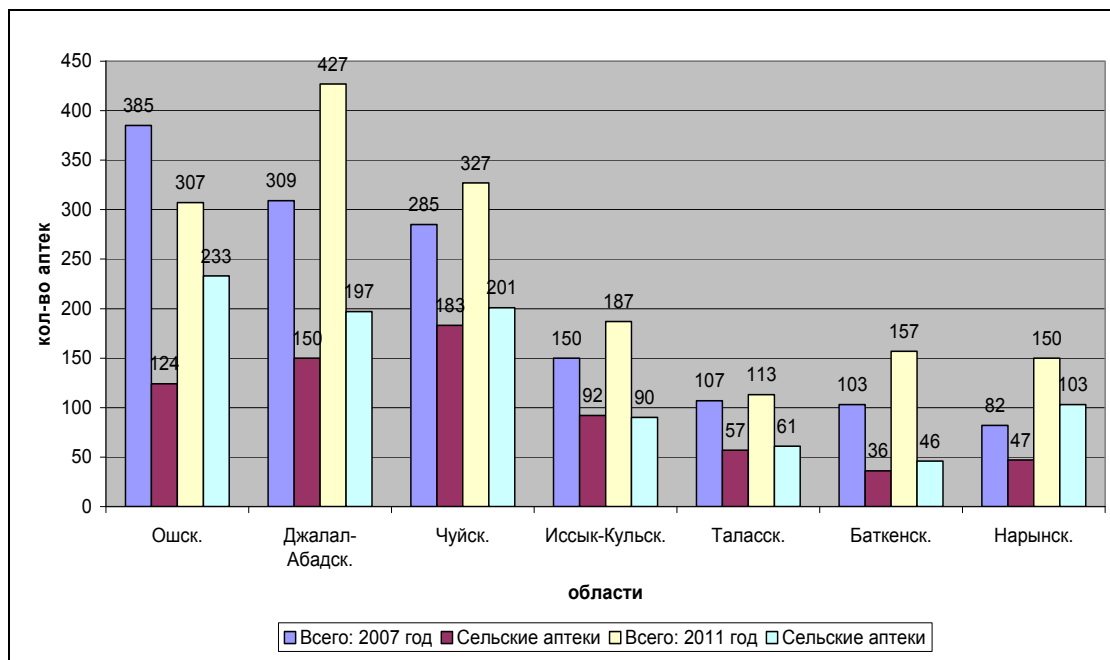
It should be noted that the number of institutions that are engaged in import and sale of drugs is increasing gradually and it is growing each year on average by 15%. The average number of pharmacies in the country compared with 1997 has increased by almost 3 times, pharmacy points and booths by 2.5 times and the number of pharmaceutical wholesale warehouses increased by more than 3 times, shops and warehouses for optics and medical devices by 9,2 times. (Figure 5)

Figure 5. The number of pharmaceutical organizations, 1997-2011



It should be noted that mostly the growth in number of retail pharmacies is observed in Bishkek, the capital, and in central cities and rayon centers. Figure 6 shows the retail pharmacy chain in the breakdown by oblasts of the KR in comparison with 2007 (as of September 2011). The number of pharmacies in rural areas tends to increase, but it's mostly drugstores, which get opened in rayon centers and large villages (Figure 6).

Figure 6. The ratio of city and village pharmacies, 2007-2011



Therefore, despite the number of undertaken measures (simplification of licensing procedures for rural regions, re-training of health workers to enable them to work in pharmacies), the availability of pharmacies in remote rural areas remains to be the challenge.

At the present time 66% of the population of the country resides in rural areas, and more than half of them do not have pharmacies, since pharmacies are mainly concentrated in cities and rayon centers. Residents of villages where there are no pharmacies, have to buy the drugs they need in neighboring villages or towns.

Analysis of the availability of pharmacies across the regions shows that:

- More than 70% of rural settlements of the country do not have pharmacies;
- Population size in areas lacking drugstores is usually less than 1,500 people;
- About 1% of the villages, where there are no pharmacies, has a population size ore than 2,500 people;
- Most pharmacies are concentrated in the villages, which are the rayon centers and in villages with the population size of more than 8-15 thousand people.
- The number of pharmacies in such villages is from 15 up to 30.

Thus, there are 327 villages in Chui Oblast, and in 249 (76%) of them there are no pharmacies. In Issyk-Kul oblast there are 180 villages, 146 of them do not have pharmacies (81%). In 90 villages of Talas oblast, there are no pharmacies in 63 (70%) of them. In Naryn oblast there are 140 villages and 83 (59%) out of them do not have pharmacies. The residents of the southern regions of the country, where rural population density is the highest, have lowest access to drugs. In Osh oblast there are 467 villages and 357 of them do not have pharmacies; in Jalalabad oblast there

are 415 villages and in 321 (77%) of them there are no pharmacies. And in Batken oblast there are 189 villages and in 151 (79%) of them there are no pharmacies (Attachment 2, Table 4)

Table 4. Comparative data on pharmacies in the breakdown by oblasts of the KR (2011)

Oblast	Rural pharmacies	The number of villages	The number of villages without pharmacies	The number of villages without pharmacies, %
Chui oblast	223	327	249	76 %
Issyk-kul oblast	86	180	146	81 %
Talas oblast	63	90	63	70 %
Naryn oblast	113	140	83	59 %
Osh oblast	200	467	357	76 %
Jalalabad oblast	225	415	321	77 %
Batken oblast	79	189	151	79 %
Total:	989	1808	1370	75 %

As already noted, the Ministry of Health had taken steps to open pharmacies in remote villages. For this purpose, in remote areas, having no pharmacies and no specialists with pharmaceutical education, health care providers (doctors, nurses) were allowed to sell drugs at remote FPGs and FAPs after proper training.

Since 2003, there were retrained 592 health workers to get the right to work in pharmacies, and most of them were retrained though funding provided by various projects (World Bank, ADB, Kyrgyz-Swiss project), out of which only 111 people have been retrained again and extended the validity of their certificates to prolong their right to work in pharmacies. In total as of December 1, 2011, 212 health workers in remote villages had permission to sell drugs and medical items (Table 5).

For example, currently in Naryn oblast 34 pharmaceutical points have been factually functioning, in At-Bashi there were only 21 health workers retrained, of which only seven have renewed their certificates for another term and continued to work, the remaining 14 specialists closed pharmacy points.

The main reasons for closure of pharmacies by health care workers in rural settlements is the lack of funding to purchase drugs, different family circumstances related to moving out to another village or city and maternity leaves.

Nevertheless, the experience of Naryn oblast was the most successful, compared with other areas in the remote villages of Naryn oblast there is the greatest number of health workers who continue to work in pharmacies. This is due to the fact that the opening of pharmacies in rural areas of this oblast have been carried out within the framework of projects supported by ADB and Kyrgyz-Swiss Project.

Table 5. The number of working medical specialists in the breakdown by oblasts, 2011

Oblast	The number of medical workers with valid certificate	The number of retrained medical workers since 2003
Naryn	50	157
Talas	9	35
Chui	14	71

Issykul	28	95
Jalalabad	29	98
Osh	61	81
Batken	21	55
Total	212	592

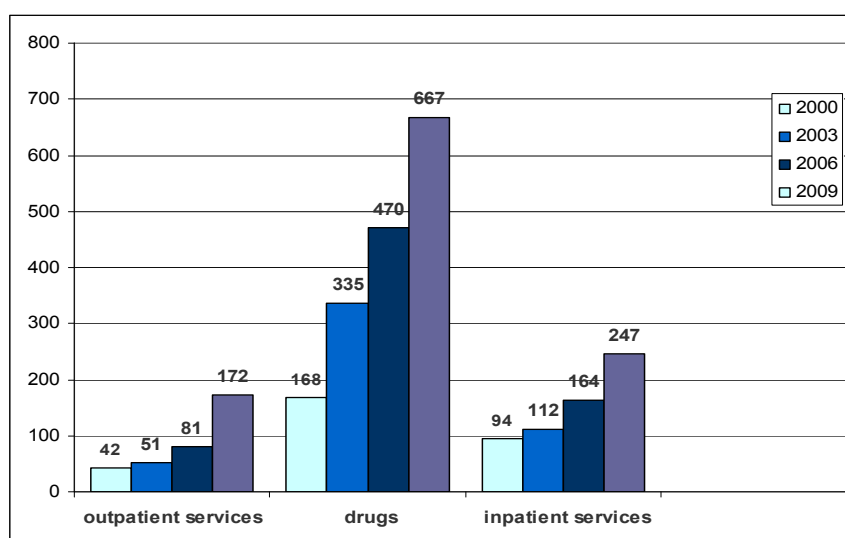
4.3. Drug affordability

4.3.1. Drug-related expenses of the population and drug affordability

Since the adoption of the first SDP (1998) in the country there have been many activities undertaken, aimed at improving access to drugs. Mechanisms were established to select drugs, to import drugs to the country, to reduce the cost of drugs (Additional drug supply program of MHIF for insured people at outpatient level), under the program "Manas Taalimi" there were taken further steps to promote the opening of pharmacies in rural areas. However, to date, the above-mentioned procedures remain to be relevant, despite of all the work implemented to improve access to essential drugs, and there is a number of reasons, which still impede drug affordability. The reasons for development of such situation are complex and are not limited to financial difficulties. To understand them, it is necessary to analyze the drug market, governmental structures, the work of doctors, pharmacists, and finally, the behavior of the consumers – patients.

As part of the conducted study "Accessibility to health services and cash pocket costs of patients in Kyrgyzstan: Overview of households 2001-2010"⁷, it was noted that the cost of drugs shown as a share of total out-of-pocket payments made by household per capita are the highest of all costs associated with health care. The annual nominal increase in spending on medicines is 33%. So for the period 2000-2009, household expenditures to buy drugs, adjusted for inflation, increased by almost 2 times. Thus, one of the factors of such substantial increase in spending on drugs is the increase in the consumption of drugs and the ever-increasing volumes of imported drugs to the Republic.

Per capita expenditures in the form of payments made from the pocket of patients by level of service delivery (som).⁸



⁷ www.hpac.kg

⁸ ¹⁰ Policy research document № 76 Accessibility to medical services and out-of-pocket expenses of patients in Kyrgyzstan: Review of households for 2001-2010: J. Aleshkina, B. Akkazieva, M. Jakab

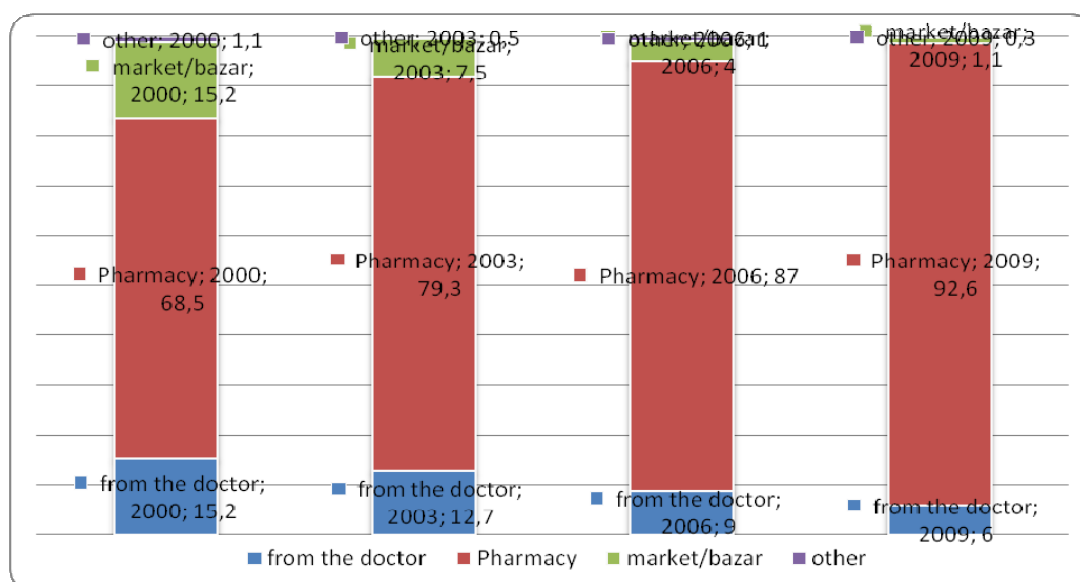
The results of the above-mentioned study indicate that in comparison with 2007 physical accessibility of drugs has improved, as 90% of patients who were given prescriptions by doctors, have purchased all prescribed products. This level is quite high, and it remains to be high over the years. In addition, we note the improvement of economic affordability of drugs: in 2009 40% of respondents reported that they did not buy drugs because of their high prices, while in 2000 their share made up 61%. Territorial accessibility to drugs at the moment is not a serious problem in Kyrgyzstan. Only 1% of patients reported that they did not purchase drugs because the pharmacy was far away.

The patients' practices in purchasing drugs prescribed by a doctor (4 rounds of the study)⁹

	2000	2003	2006	2009
Yes, we purchased all drugs	77	91	92	90
Yes, but we purchased only some of them	14	6	5	6
Purchased no drugs	9	3	3	4
Total	100%	100%	100%	100%
Reasons why some of them could not purchase drugs				
Could not find	11	17	6	10
Too expensive	61	54	43	40
Didn't want	67	3	47	39
The pharmacy is far away	-	-	3	1
Other	22	26	-	10

Another positive change was that the vast majority of respondents (92.6%) purchased drugs from pharmacies, while in 2006 this figure made up 87% and in 2000 - 68.5% (Fig. 7). These figures confirm the improvement of accessibility of population to pharmacies and increased population's commitment to purchase drugs from pharmacies.

Locations, where drugs were purchased¹⁰



¹⁰ Policy research document № 76 Accessibility to medical services and out-of-pocket expenses of patients in Kyrgyzstan: Review of households for 2001-2010: J. Aleshkina, B. Akkazieva, M. Jakob

4.3.2. Drug affordability under Additional Program of MHIF

One of the most effective methods to ensure drug affordability for the population was the introduction of MHI AP at the primary level for insured people, which was designed to dispense drugs, based on special prescription forms, from pharmacies that have concluded contracts with TU MHIF. Upon drug dispensing at pharmacies, the patient pays only a part of the cost of purchased product, the other part of the cost is to be reimbursed by the Mandatory Health Insurance Fund. Currently, the list of reimbursable drugs includes 74 names of drugs at a discount of up to 50% depending on the name of the drug. Despite the fact that MHI AP was gradually introduced in the country and since 2003 it has been extended to all regions of the country, to date, the funds allocated to implement this program remain undisbursed.

The population is still unaware of their rights that can be exercised under this program due to the fact that many doctors simply do not issue prescriptions under MHI AP. Reluctance of physicians to issue prescriptions for patients that can be purchased with a discount was due to the fact that the reimbursement mechanisms of the territorial departments of HIF to pay for issued prescriptions were not well developed, resulting in cases when doctors often had to pay out of their pocket to cover these costs.

In the framework of this study in order to determine the impact of MHI AP the survey was conducted to interview doctors about their prescription practices in relation to MHI AP and pharmacies were visited to study of drug dispensing in pharmacies under this program. Interviewers visited 24 pharmacies in the reviewed areas, which were located in the immediate vicinity of FMCs and had contracts with TU MHIF. During certain period of time in each pharmacy there were monitored 30 patients, who came to the drugstore and, on average, only 3% of them had special prescriptions related to MHI AP, the largest number of patients who come to the pharmacy with MHI AP prescriptions made up 5% in Osh, 4% in Chui, 3% in Issyk-Kul, and the city of Bishkek, none of the patients, who visited the pharmacy at the time of the study had prescription to be covered by MHI AP.

The obtained data indicates that at present there are still reasons existing that impede the expansion of this program and most likely, the population is still not aware of their rights given by this program.

Interviews and in-depth focus groups that were conducted during the study has shown that in fact there were some significant barriers in connection with which doctors did not prescribe drugs under MHI AP:

(1) Limits set for drugs/finances to be allocated to each institution:

«In the beginning of the quarter, we prescribe drugs safely (under MHIF) to all who need it, but then we have limits exhausted and we stop prescribing drugs».

«Because of these limits, we always have to make this choice; someone really needs these medicines, while others can afford themselves to buy more expensive drugs. In this case I honestly suggest - "If you want I will prescribe cheap drug, and you can get better drug but it's more expensive"....».

(2) Penalties for "irrational" prescription:

«For example, you prescribe drugs under MHIF program to the teacher, as she is 100% insured person. And then it turns out that contributions were not made for her, and we get fined. In general, we try not to prescribe such drugs».

«In order to prescribe drugs under MHIF program, first I should do examination. For example, I have some elderly women assigned, they are 80 or more years old, they have hypertensive disease diagnosed many years ago. It takes her many efforts to come here, and if I want to prescribe medication for her, I need to take her to do a cardiogram and to take other tests. I cannot imagine her to be able to do this? And if I have not examined her, then I am punished. In general, I have already stopped this practice to prescribe such drugs as it's more trouble than it is worth».

(3) The complexity of procedures for verification of the form and of the contribution made by the patient:

“My office is located on the first floor, and in order to stamp or reconcile it with the database on contributions, the patient should go up to the third floor. The patient goes up and there is nobody there. Then he/she goes down again, waits and goes up again. In general, the patients themselves re not happy about this procedure, this is inconvenient procedure... ” We have no special operator, who would always be available to do reconciliation to see if the patient is insured and paid contributions”.

However, this does not mean that the MHI AP has no effective impact on financial protection, as there is no information as to what would be the costs if there were no subsidized drugs. The frequency with which patients used MHI AP prescriptions, shows that upon prescription of drugs the medical staff takes into consideration the material welfare of the patient and the severity of the disease.

4.3.2. Results of the study on physical accessibility and economical affordability of drugs

Examination of physical accessibility and economic affordability of drugs was based on the format of WHO manual "Core indicators on country pharmaceutical situation". This manual is used to assess existing structures and processes in the pharmaceutical sector, and it is designed to do rapid assessment of SDP implementation and of its components. This methodology is aimed to examine to which extent strategic objectives were achieved in terms of improved access and it is determined by availability and affordability of essential drugs.

Physical availability is the basic measurement unit to measure access to essential drugs. To study the physical availability of drugs at the time of the study there was investigated the availability of key drugs used for treatment of common diseases at pharmacies.

The drugs, which are used for the treatment of common diseases should be available in all pharmacies, located in close proximity to the primary health care organizations - FGPs. This indicator is shown in percentage ratio.

Availability percentage for key drugs

Calculation was based on the formula 1:

Formula 1. calculation of drug availability indicator (physical availability)

$ \text{Availability of key drugs (physical availability)} = \frac{\text{The number of key drugs, available at the pharmacy}}{15} \times 100 $
--

where 15 is the number of key drugs included to the study list.

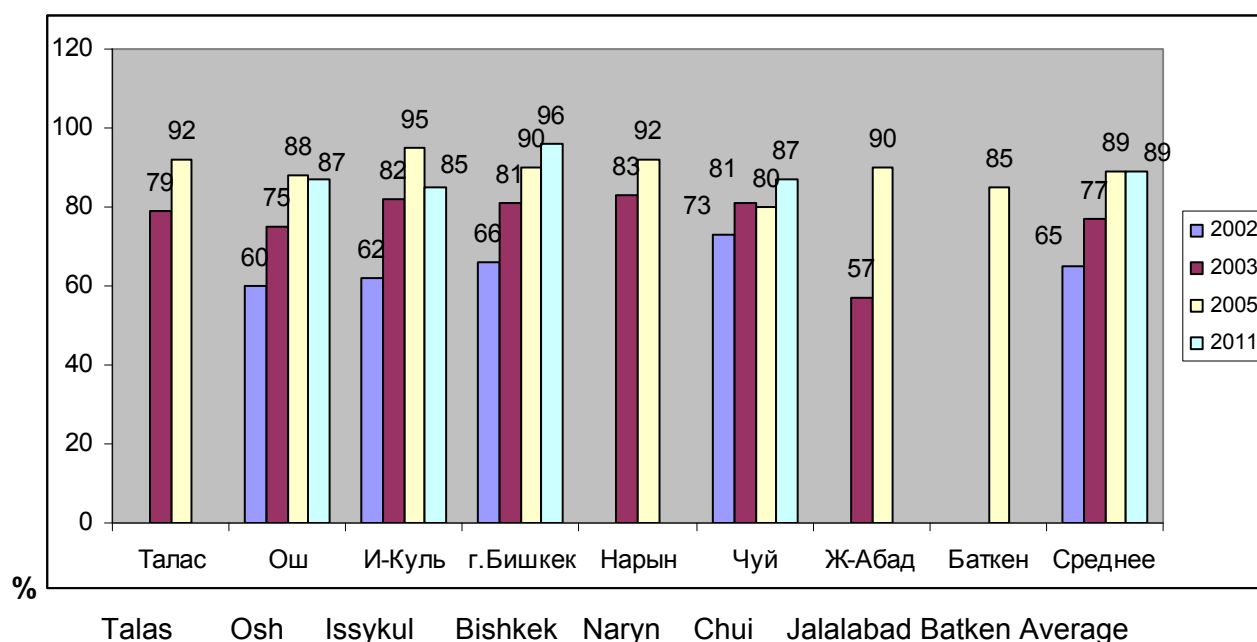
To investigate the physical availability of drugs there were selected 15 drugs, included to EDL and clinical protocols to treat the most common diseases and to MHI AP (Table 6)

Table 6. The list of drugs selected for the study

№	Drug names	Release form
1.	Hydrochlorothiazide	tablets
2.	Verapamil	tablets
3.	Enalapril	tablets
4.	Amoxicillin	tablets
5.	Beclomethasone dipropionate	aerosol
6.	Indapamide	tablets
7.	Tetracycline	tablets
8.	Metronidazole	tablets
9.	Ranitidine	tablets
10.	Teopek	tablets (syrup)
11.	Prednisolone	tablets
12.	Salbutamol	aerosol
13.	Atenolol	tablets
14.	Paracetamol	tablets (syrup)
15.	Co-trimoxazole	tablets

The results of the conducted study showed that the availability of key drugs in pharmacies of the country made up 89% on average, which corresponds to indicators of 2005. In 2003 the figure mad up 77%, in 2002 - 65%. These figures indicated that a physical accessibility of drugs for the population has much improved, and this is, primarily, thanks to abolition of VAT on drugs, increased volume of drugs and expanded range of imported drugs to the country. In the republic there is a general tendency, which is improvement of availability of drugs across regions from 85% (Issyk-Kul region) to 96% (Bishkek) (Figure 7).

Figure 7. Availability of drugs (physical availability) in pharmacies in 2002-2011,



Measuring the affordability of basic medical treatment is also one of the indicators to measure access to essential drugs. The study of affordability was based on measuring the price affordability of drugs that are needed for the course of treatment of common diseases. For this purpose, there were used clinical protocols for three diseases: hypertension, bronchial asthma, peptic ulcer and 12 duodenal ulcer. The analysis of prices was carried out to include not only the prices for generic names of drugs, which have been indicated in clinical protocols, and respectively, in research forms, but also to include the cheapest trade names, available in pharmacies at the time of the study. Upon filling out the research forms indicated there was indicated the lowest cost of drugs in the pharmacy. If there were multiple trade and generic equivalents of drugs, there were chosen the cheapest ones.

Price affordability of drug treatment was expressed in the ratio of the cost of treatment course to the average salary of civil servant (budgeted salary)

The calculation was performed using the formula 2:

Formula 2. The calculation of affordability of drugs to treat diseases

$$\text{Price affordability of treatment of a disease} = \frac{\text{The cost of drug treatment course in USD}}{\text{Average monthly budgetary salary/ 4 weeks in USD}} \times 100$$

The cost of the treatment course of bronchial asthma is defined according to the clinical protocol by three degrees of severity. Based on the fact that the treatment of bronchial asthma is a long-term, and often lifelong process, the following costs were calculated for 1 month treatment:

1. Mild state of asthma is calculated as follows: Beclometasone 250 - 500 mg/day for 1 month.
2. Moderate state of asthma is treated according to the scheme by: inhaled corticosteroid (Beklametazone dipropionate) in combination with long-acting Theophylline (Teopek) for 1 month.
3. Severe state of asthma is treated according to the scheme by: inhaled corticosteroid (Beklametazone dipropionate) + long-acting β 2-agonists, (Salmeterol or Fluticasone Propionate + Salmeterol) in combination with long-acting Theophylline (Teopek) + maintenance dose of oral corticosteroids (Prednisolone).

Beclomethasone 250 - 500 mg/day (single inhalation dose contains 250 mcg of Beclomethasone).

Table 7. Treatment cost for mild state of bronchial asthma for one month

Region	Average treatment cost (KGS)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	371	7,9	4,5
Issykul oblast	217,5	4,6	2,7
Osh oblast	366	7,8	4,5
Chui oblast	354	7,6	4,3
Average for the Republic	327	7	4

The cost of treatment of mild bronchial asthma across the country amounted to 327 soms; in 2005 it made up 151.9 soms. By regions the cost of treatment varies from 217.5 som in Issyk-Kul oblast to 371 soms in Bishkek. Low cost of treatment in Issyk-Kul oblast is due to the fact that at the time of the study the price of pharmacies for Beclason IVF was at the price of 700-750 som per vial,

while in other regions - Beclason Easy Breathing had the price from 1180 to 1310 soms per vial (Table 7).

Accordingly, the lowest cost of treatment in ratio to the average monthly wage was observed in Issyk-Kul oblast and made up 2.7%.

Across the country on average the ratio of the average wage to the cost of treatment of mild asthma made up 4%.

Table 8. The average cost of treatment of moderately severe asthma within 1 month

<i>Region</i>	Average treatment cost for BA (KGS)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	531	11,3	6,5
Issykul oblast	377	8,1	4,6
Osh oblast	584	12,5	7,2
Chui oblast	603	12,9	7,4
Average for the Republic	524	11,2	6,4

The cost of treatment of moderately severe asthma made up on average 524 som across the country (Table 8). The average cost of treatment throughout the country ranges from 377 soms (Issyk-Kul oblast) to 603 soms (Chui oblast)

In relation to the average wage the cost of the treatment of moderately severe asthma made up 7.4% across the country.

Table 9. Average cost of treatment of severe asthma within 1 month

<i>Region</i>	Average treatment cost for BA (KGS)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	1899	40,6	23,3
Issykul oblast	1583	33,8	19,4
Osh oblast	1954	41,8	24
Chui oblast	1959	41,9	24
Average for the Republic	1849	39,5	22,7

It should be noted that in case of severe asthma it is recommended to carry out anti-inflammatory therapy with the use of inhaled corticosteroids (Beklametazone Dipropionate) in combination with long-acting β 2 agonists, such as Salmeterol, or by using Fluticasone Propionate fixed combination + Salmeterol.

However, in the regions at the time of the study non of the surveyed pharmacies had any of long-acting β 2-agonists or combinations thereof. In Bishkek at the time of the study only one pharmacy had Seretide (combination of Fluticasone Propionate + Salmeterol).

In this regard, the cost calculation for the treatment of severe asthma by oblasts was made based on the cost of Seretide in Bishkek. As the table shows the cost of treatment of severe asthma is quite high and the average cost for the republic made up 1849 som (Table 9).

Affordability of drugs for the treatment of hypertension

According to the current clinical protocol the drug therapy of hypertension (HD) depends on the degree of increase in blood pressure, concomitant diseases, and it is classified into 4 groups according to risk degree. In this connection, the cost of treatment was calculated for four groups per 1 month:

1. **HD with low risk** monotherapy (Atenolol).
2. **HD with moderate risk** according to the scheme of beta-blocker of the first line with calcium channel blockers (Atenolol + Verapamil).
3. **HD of high and very high risk + diabetes mellitus** according to the scheme of ACE inhibitors in combination with calcium antagonists and non-dihydropyridine calcium antagonists and thiazide diuretics (Enalapril + Indapamide + Verapamil).
4. **HD of high and very high risk + angor pectoris** according to the scheme of beta blockers in conjunction with Dihydropyridine calcium antagonists and ACE inhibitors (Nifedipine + Atenolol + + Enalapril).

Table 10. Cost of treatment of HD with low risk per 1 month

Region	Average cost of treatment of HD (som)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	35	0,75	0,43
Issykul oblast	49,5	1,1	0,6
Osh oblast	47,7	1,0	0,58
Chui oblast	37	0,79	0,45
Average for the Republic	42,3	0,91	0,52

In the course of the treatment of uncomplicated hypertension with low-risk by one of antihypertensive drugs (Atenolol) a patient must spend 42.3 soms on average per 1 month, which is 0.52% of average wage (Table 10).

The cheapest course of treatment of low risk hypertension in Bishkek and Chui oblast made up 0,43-0,45% of average wage and the most expensive amounted to 0.58% in Osh oblast and in Issyk-Kul oblast it made up 0.6% of the average monthly wage. The high cost of treatment of low-risk hypertension in Issyk-Kul region was due to the fact that there was no cheap generic drugs in the pharmacy network, and only expensive brand names were available there

Table 11. Cost of treatment of HD with moderate risk per 1 month

Region	Average cost of treatment of HD (som)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	167	3,6	2,04
Issykul oblast	231,5	4,9	2,8
Osh oblast	222,9	4,8	2,7
Chui oblast	171	3,7	2,1
Average for the Republic	198,1	4,2	2,4

The treatment expenses of hypertensive patients with moderate risk of cardiovascular complications per 1 month on average make up 198.1 som (Table 11). The cheapest treatment of patients in Bishkek is 167 soms and the most expensive is observed in Issyk-Kul oblast - 231.5 som.

In relation to the average wage the cost of treatment of HD with moderate risk of complications makes up 2.4% of the average monthly wage. The lowest expenses to treat such diagnosis are in Bishkek - 2.04%, the highest level of expenses is observed in Issyk-Kul oblast - 2.8%.

Cost calculation for the treatment of hypertension with high and very high risk per 1 month showed that on average the patient has to spend 352 som (Table 12), which represents 4.3% of the average monthly wage. Treatment of this disease in terms of value ranges from 320 soms (Bishkek) to 403 soms (Issyk-Kul oblast).

Table 12. Cost of treatment of HD with high and very high risk per 1 month

Region	Average cost of treatment of HD (som)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	320	6,8	3,9
Issykul oblast	403	8,6	4,9
Osh oblast	341	7,3	4,2
Chui oblast	344	7,4	4,2
Average for the Republic	352	7,52	4,3

Treatment of hypertension with high and very high risk associated with cardiovascular failure within 1 month will cost for a patient on average 281 soms, which is 3.4% of the average monthly wage. The most affordable treatment of patients in terms of value is in Issyk-Kul oblast - 2.4% of average wages and the most expensive is in Bishkek - 5.2%, due to the fact that city pharmacies offer expensive trade names of antihypertensive drugs (Table 13)

Table 13. Cost of treatment of HD of high and very high risk with angor pectoris per 1 month

Region	Average cost of treatment of HD (som) (Atenolol + Nifedipine + Enalapril)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	423	9	5,2
Issykul oblast	197	4,2	2,4
Osh oblast	252	5,4	3,1
Chui oblast	250,5	5,4	3,1
Average for the Republic	281	6	3,4

Affordability of drugs for the treatment of gastric ulcer and 12 duodenal ulcer

According to the clinical protocol the treatment course of gastric ulcer and 12 duodenal ulcer is maintained with drugs of the first line (tricomponent eradication therapy including Amoxicillin + Clarithromycin + Omeprazole or Lansoprazole) and second-line (four-component eradication therapy,

including PPI (Omeprazole, Pantoprazole, etc.) bismuth tripotassium ditsitrat in combination with Metronidazole and Tetracycline.

Table 14. Cost of tricomponent eradication therapy to treat gastric ulcer and 12 duodenal ulcer

Region	Average cost of treatment (som) (Amoxicillin + Clarithromycin + Omeprazole)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	1383	29,6	16,9
Issykul oblast	1252,5	26,8	15,3
Osh oblast	1249	26,7	15,3
Chui oblast	1099	23,5	13,5
Average for the Republic	1246	26,6	15,3

The costs of patients for one-week course of tricomponent eradication therapy for gastric ulcer and 12 duodenal ulcer makes up 1246 som on average across the country. The most expensive treatment course is for the residents of Issyk-Kul oblast - 1383 som, and the lowest cost is for residents of Bishkek -1383 som (Table 14). The high cost of the treatment course is due to the fact that the cost of Clarithromycin is relatively high, and it can be purchased only at pharmacies in Bishkek and Chui oblast, Clarithromycin was not available in pharmacies of Osh oblast and Issyk-Kul oblast, so to calculate the cost of eradication therapy in Osh oblast and Issyk -Kul oblast there was taken the average price of Clarithromycin, observed in Chui oblast and Bishkek.

In relation to the average wage the cost of tricomponent eradication therapy makes up on average 15.3% of the average monthly wage.

Table 15. Average cost of alternative tricomponent eradication therapy to treat gastric ulcer and 12 duodenal ulcer

Region	Average cost of treatment (som) (Amoxicillin + Clarithromycin + bismuth tripotassium ditsitrat)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	1631	34,8	20
Issykul oblast	1536	32,8	18,8
Osh oblast	1516	32,4	18,6
Chui oblast	1345	28,7	16,5
Average for the Republic	1507	32,2	18,5

When treating gastric ulcer and 12 duodenal ulcer by using alternative scheme of Amoxicillin + Clarithromycin + bismuth tripotassium ditsitrat within seven days the treatment cost on average makes up 1507 across the country (Table 15). The cost varies by region from 1345 som (Chui oblast) to 1631 som (Bishkek City)

In relation to the average wage the cost of the one-week tricomponent eradication therapy makes up on average 18.5% across the country.

Table 16. Average cost of four-component eradicated therapy to treat gastric ulcer and 12 duodenal ulcer

Region	Average cost of treatment (som) (Metronidazole + Colloidal bismuth subcitrate+ Omeprazole+Tetracycline)	Average treatment cost, (USD)	In % ratio to average monthly salary of the Republic
Bishkek	519	11,1	6,4
Issykul oblast	565	12	6,9
Osh oblast	522	11,1	6,4
Chui oblast	536	11,4	6,6
Average for the Republic	535,5	11,4	6,6

The expenses of patients for 10-day course of four-component eradicated therapy make up 535.5 som on average for the country. The most expensive treatment - 565 som – is in Issyk-Kul oblast, and the cheapest one is found in Bishkek City and Osh oblast - 522 som and 522 som respectively (Table 16).

In relation to the average wage the cost of four-component course of eradicated therapy makes up on 6.6%. The highest level of costs are observed in Issyk-Kul oblast - 6.9% of the average monthly wage. In value terms, the most affordable treatment is in Bishkek and Osh oblast.

4.4. Drug safety and quality

4.4.1 Existing mechanisms for quality assurance, problems

Currently, the state system for quality assurance of drugs includes several steps.

- The state registration;
- Licensing of pharmaceutical activities of pharmacies, including pharmacies in the structure of health care organizations;
- Confirmation of compliance of drugs and medical products;
- Pharmaceutical inspection (surveillance)

All of the above-mentioned procedures are interlinked with each other and together they can ensure the quality, effectiveness and safety of drugs throughout the whole chain of circulation: producer - wholesaler - retail pharmacy/health care organization - patient.

The state registration of drugs and medical products in Kyrgyzstan is central link of the state regulation of the drug market in regards to all parameters: the nomenclature of drugs which are permitted for sale, their effectiveness, safety and pharmaceutical quality aspects, information for physicians and consumers, sale conditions (prescription or OTC drugs), development of the State Register of registered drugs.

The procedure of state registration as a form of conformity assessment, is standardized and carried out in accordance with the Decree of the Government of the KR from April 6, 2011 № 137 "On approval of Technical Regulations "On drug safety for medical use".

This technical regulation establishes procedures and terms for conducting the expertise and registration, as well as requirements set for the volume of expertise in terms of its sufficiency and adequacy for the level of state registration, requirements for the work of expert bodies of the Department, qualifications of experts, hiring procedures and sources of financing of experts.

In connection with the reform in the area of delivery of governmental services, the Interdepartmental Commission on the development of single systematic register (a catalogue) of

governmental services has reviewed the draft "Inventory of Departmental Services" As a result paid services, related to testing of drugs and medical items upon the registration/re-registration and those that were related to mandatory certification and testing of drugs and medical items were classified by the Interdepartmental Commission as functions of governmental regulation. Due to the fact that the budget funds are not allocated to the Department, the work is currently underway to justify charges for works, related to the examination of drugs and medical items upon the registration.

Quite a lot of problems arise around the licensing of business activities in the area of production, manufacture and sale of drugs and medical items. For example, in the framework of discussions on the draft Law "On Licenses and Permissions," the Ministry of Economics and Antitrust Policy of the KR proposed to abolish licensing for production and sales of pharmaceuticals and medical products in the Kyrgyz Republic and to make corresponding amendments to the Law of the KR "On Medicines".

It should be noted that licensing of pharmaceutical activity, as the mechanism of state regulation, is active in all developed countries.

Licensing of activities on drug sale is intended to provide protection of rights of citizens to receive high-quality pharmaceutical care through non-admission of unprepared and unscrupulous businesses to the pharmaceutical market.

When making decisions related to abolition of licensing for sale of drugs and medical items long-term consequences should be also considered. Any violation of conditions, related to drug transportation, storage and distribution, and side effects of drugs and harm to the health of patients, associated with the abolition of licensing, are impossible to trace, and much less it is possible to punish the liable party, as anyone will be able to sell drugs and medical products after licensing procedures are abolished.

On the basis of the Decree of the Government of the KR from December 30, 2005, № 639 "On mandatory assessment of conformity of products" drugs are included to in the list of products, which are subject to obligatory compliance verification in the form of mandatory certification. The Department and its Southern Branch are accredited as the certification body in accordance with the CIC GOST ISO/IEC 65: 2002 "General requirements for product certification bodies" to conduct certification of drugs and medical products in the scope of accreditation. DDS&MT can impose a prohibition on the implementation of counterfeit, substandard and illegally imported drugs to the country.

Currently there are ongoing discussions held in regards to the possibility of exclusion of drugs from the sphere of technical regulation.

Such need is developed due to the fact that the drugs are a special commodity, and the government shall not only secure and guarantee the safety of drugs, but also it shall regulate such characteristics that determine their consumer properties, particularly their efficiency and quality.

For example, modern effective drug for various reasons may happen not to be absolutely safe. And as stated in the letter of WHO/Europe: - "Medicines and medical products can not be assessed by consumers or health professionals or the public. The assessment should be carried out by trained, competent and motivated staff".

For this reason, any document, providing a package of measures to ensure a reasonable balance of drug benefit/risk ratio, will inevitably go beyond the concept of "technical regulation" and therefore would not meet the formal requirements of technical regulations. It is no accident that in none of the countries in the world the pharmaceutical market is governed by technical regulations.

Also today there are existing two drug regulatory mechanisms: the Law of the KR "On Medicines" and the Law of the KR "On technical regulation framework in the KR" and in this connection, there have occurred a number of contradictions associated with the control and oversight functions exercised by the Department.

And the most problematic issue is related to the status of pharmaceutical inspections. In connection with the revision of the Law of the KR "On business inspection procedures" the Pharmaceutical Inspection of DDS&MT has lost the right to conduct surprise inspections, as the inspector must notify the employer of his/her intention to inspect ten days before the assessment. Ten days would be enough time to hide the violations before the arrival of the inspector. During the long time there was introduced the moratorium on inspections, and after the moratorium the number of inspections has been mechanically reduced by three times. Based on the orders issued by the Ministry of Economy and Antitrust Policy of the Kyrgyz Republic since November 2011 the conduct of planned inspections of economic entities, engaged into pharmaceutical activities, has been suspended.

In addition, despite the constant work of DDS&MT in the area of elimination of uncontrolled drug trafficking, still it is hard to eliminate it. The main reasons are the small number of pharmaceutical inspections, lack of authorities on part of the Department, as well as the discrepancy in terms of the severity of punishment for administrative misconduct.

In light of the above-mentioned problems the number of studies that were conducted in recent years indicated that the existing system of quality control at the moment can not fully guarantee the quality of drugs.

Thus, according to WHO study on the quality of drugs in the pharmaceutical sector, which was conducted in 2008, about 70% of the drugs had "unknown" quality level (made in the CIS and Asia). There is a wide range of such products, which are available in retail pharmacies, and then they are offered in the official chain of retail drug sales. This indicates to the fact that there is illegal drug market in the country. Despite the number of measures undertaken by DDS&MT, the question related to the existence of counterfeit and smuggled drugs in the market remains highly relevant.

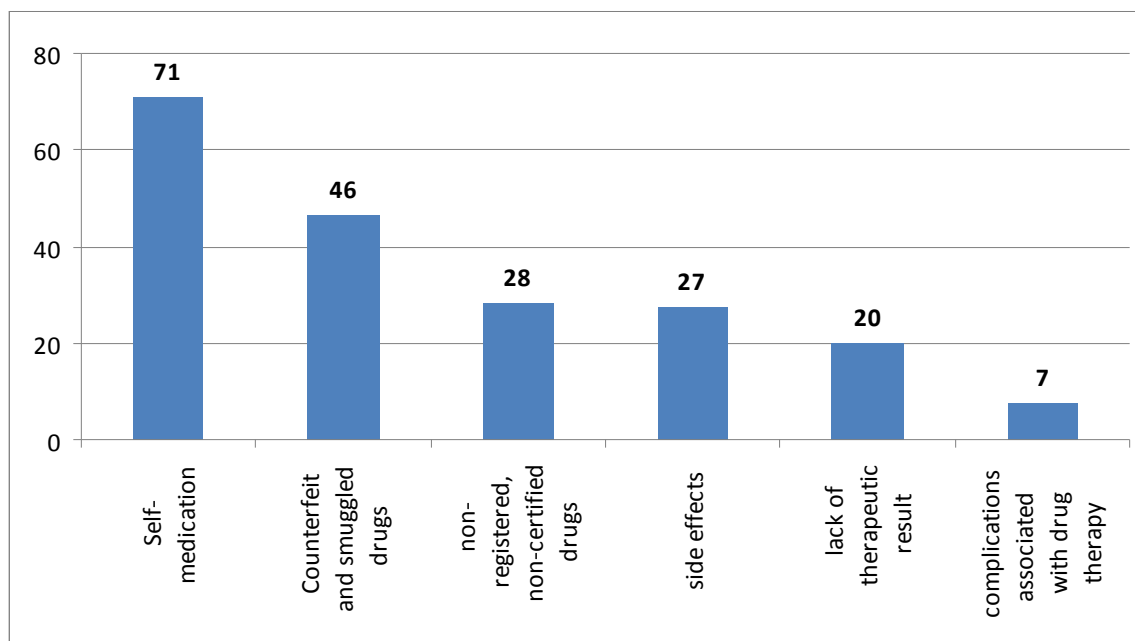
Procurement rules and procedures that currently exist in Kyrgyzstan do not require that procured drugs shall meet the standards of GMP. The Ministry of Health is concerned that the introduction of mandatory compliance of procured drugs to GMP standards will significantly increase the expenses of the public sector and will limit public access to essential drugs. In addition, the adopted requirement that an applicant shall provide GMP certificate upon registration, as the primary document for quality certification, is often not fulfilled. However, the mere existence of the certificate is no guarantee of quality as the GMP certificate is national document issued by the national regulatory agency of the country of origin. At present, the majority of generics that are available on the market, is manufactured in countries of CIS and Asia, and in spite of the availability of GMP Certificate, they are not registered in the European Union.

There is a widespread opinion that the quality necessarily entails higher costs. Nevertheless, the study of WHO "The quality of medicines in the public procurement sector of the Kyrgyz Republic", conducted in 2008, has shown that to buy higher-quality medicines was sometimes even cheaper, and in most cases it is not more expensive than to buy lower-quality medicines.

The survey of physicians, conducted to assess the quality and safety of drugs prescribed by them, has shown the overall situation regarding the drug safety was positive in the opinion of interviewed physicians based on their practice: every fourth respondent believes the general situation to be "good" and more than 60% rated it as "a satisfactory situation". Physicians believed that the most pressing issue related to drug safety, was the common practice of self-medication and complications associated with such practice. (Figure 8) .

The second most pressing issue was about illegally imported drugs, most often this issue was raised by physicians in Bishkek (61%) and Chui oblast (50%), and the problem was least urgent in Issyk-Kul oblast (21%).

Figure 8. Problems related to drug safety, %



4.5. Rational use of drugs

4.5.1. Measures, undertaken to ensure rational use of drugs

Since 1996, Kyrgyzstan has introduced the concept of rational use of medicines, aimed at curbing the cost of drugs and improving their supply, increasing their efficiency, rationalization and justification of medical treatment.

From this period the country has implemented the main strategic directions on rational use of drugs: the implementation and regular update of Essential Drug List, development and implementation of evidence-based clinical guidelines\protocols, the development of Essential Drugs Formulary, and the introduction of prescription-based dispensing of drugs with generic names in the framework of MHI AP.

However, in spite of implemented activities, the issue of rational use of drugs remains one of the most challenging elements of the state drug policy, since the rational use of drugs is restricted in the country by lack of budget funds allocated by the state for drugs, and therefore it has developed a rather negative attitude towards the rationalization as a factor that limits the freedom of prescriptions issued by physicians.

The activities that were carried out within the concept of rational use of drugs, of course, are important, but their benefit is not significant in the absence of regular measures and the lack of efforts to ensure more rational use of drugs.

For example, in Kyrgyzstan, all medicines that are subsidized under the various programs at different levels of health care are based on the essential drug list, approved by the Government. However, the study which compared the EDL of WHO with the list of Uzbekistan, Kazakhstan, Tajikistan and Kyrgyzstan, has shown that although the list of those countries was identical with the list of WHO by 40-80%, they have also included the number of drugs with unproven efficacy. Promoting the use of generic medicines is often resisted due to their quality as they are often produced in CIS countries and Asia.¹¹ The study that examined the factors that influenced the use of

¹¹ Elias Mossialos, Monika Mrazek, «Regulating pharmaceutical sector in Europe: for effectiveness, quality and justice». Chapter 20 «Access to drugs in CIS countries»

generic drugs "(Research document # 67, HPAC, Bishkek, 2009) has shown that the practice of generic substitution does not work in pharmacies, replacement in pharmacies most often happens in the absence of prescribed drug, and this does not mean that the patients were offered cheaper generics under INN. Doctors and patients prescribe, and, respectively, prefer to buy more expensive drugs, because they believe that they are more effective and have higher quality. Obviously, it is impossible to achieve rational use of drugs without proper access to safe and high-quality medicines (both in terms of accessibility and affordability).

Proper prescription and use of drugs is of great benefit to patients and leads to lower costs, but health care workers should receive the necessary tools and unbiased information to make good decisions, so the most important condition to achieve rational use of drugs is to ensure continuous training of physicians and pharmacists.

In addition, given the scale of self-treatment of the population in Kyrgyzstan (every fourth patient gets drugs at the pharmacy without a prescription), it is necessary to pay attention to introduction of appropriate programs to improve the health of the population by increasing their awareness about new drugs and approaches to their administration.

The range of measures, aimed at implementing the current SDP and promoting rational use of drugs, included the number of activities and the major ones are the following: the periodic update of EDL and development of instructions for its update, evaluation of implementation of clinical protocols in health care facilities and training for physicians on use of clinical protocols, the introduction of the formulary system in health care organizations, data collection on side effects and others. However, as results of the survey of physicians has shown, not all of the activities identified in SDP were introduced, and those that have been implemented, were not widely expanded.

4.5.2. Results of the survey of physicians to analyse activities undertaken to ensure rational drug use

4.5.2. Results of doctors interviewing for analysis of activities on rational drugs using

A very important aspect of rational drug use is an availability of official regulations that govern drug prescription and information about them among medical workers.

Currently there are few worldwide recognized and reliable sources of information about drugs. In German language this is the guide *Arzneimittelgrossbuch*, in English it is *Martindale*, the *British Formulary (BP)* and *USP (U.S. Pharmacopoeia Convention)*, they are compiled by the scientists, who do not collaborate with pharmaceutical companies. Such publications are funded only by the state or non-profit organizations.

The source of information about drugs used in the former USSR was the reference-book by M.D. Mashkovsky, which is still used by pharmacists and physicians of the Republic, but given the current range of drugs and new evidences on many drugs, it is obvious that this information is insufficient.

In Kyrgyzstan, the basic adopted documents with information about the drugs use are the *Formulary of Essential Drugs*, *CGs/CPs for the treatment of various diseases* and *EDL*.

The results of the survey on the availability of these documents among physicians showed that to the biggest extent FMC physicians are provided with major clinical protocols and report on their use in most of cases (Table 17). Only 60% of physicians reported on use of *Formulary of Essential Drugs* and only a third of respondents noted that they have and use the current *EDL*.

Since the rational use of drugs is accompanied by drugs prescription process, the issue of availability of prescription forms raises a concern. Prescription forms of MHIF are available only for

70% of physicians, while the prescription standard forms is available only for 55% of respondents. At the same time 32% of physicians recognized that they used forms of pharmaceutical companies, including 58% of respondents in the Chui oblast. Observations show that in fact this figure is much higher, but due to official policy, not all physicians confess on cooperation with pharmaceutical companies.

Table 17. Availability of basic documents, (%)

Title of regulatory documents	Bishkek	Issyk-Kul obl.	Osh obl.	Chui obl.	Total
Formulary of Essential Drugs (last edition)	64	47	48	85	60
Current EDL	28	37	25	42	31
List of Essential Drugs for health facility	53	26	50	62	50
Clinical protocol on treatment of hypertension	67	68	75	85	74
Clinical protocol on treatment of gastric ulcer	69	53	63	81	67
Clinical protocol on treatment of bronchial asthma	64	63	58	81	65

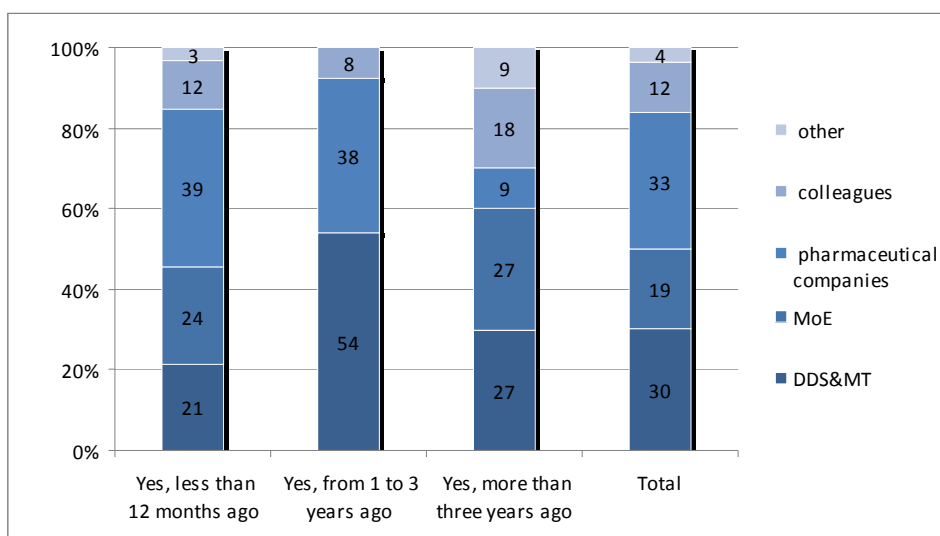
However, the availability of the documents does not guarantee their use as promotion of the idea of rational use of drugs, as indicated above, requires a constant awareness raising activities, which is also included to the list of measures to ensure implementation of SDP.

As the results of the survey showed, less than half of physicians have ever been trained on rational use of drugs (47%), including only 27%, who were trained on it in the past 12 months.

The main providers of information on rational use of drugs are DDS&MT and pharmaceutical companies (Figure 9). And, for those who have been trained in the recent past, pharmaceutical companies are dominant as a source of information.

Other additional information on rational use of drugs was received by 71% of physicians in the form of publications, brochures, presentations, etc. And only 23% of respondents reported that they have been trained on the use of Formulary of Essential Drugs.

Figure 9. «Who conducted training on rational use of drugs?», %, n=57



Insufficient coverage by measures, aimed at improving the rational use of drugs, is evidenced by the fact that about half of interviewed physicians considered that they have not received any additional information on replacement of drugs, their compatibility and side effects (Table 18). But even among those who reported on receiving such information, about the third of them noted that the information was provided by private pharmaceutical companies. Other possible organizations that could provide information on drugs, have not received substantial support (less than 1%), and therefore were not included in this table 18.

Table 18. «Did you get the following information during the last 12 months, and if «Yes», then from whom?», %

	Information provided by pharmaceutical companies	Information was searched by myself	Did not get
Recommendations on analog and therapeutic replacement of drugs	39	17	44
Recommendations on prevention from using incompatible drugs	32	14	54
Information about assessment of benefits/risks of drugs	31	21	48
Information about side effects of drugs	33	21	45

As can be seen from the above, the large role is played for pharmaceutical companies in terms of provision of information.

What is clear is that currently pharmaceutical companies continue to conduct aggressive marketing of manufactured products among physicians, which is very alerting since the information provided by them about drugs is often biased.

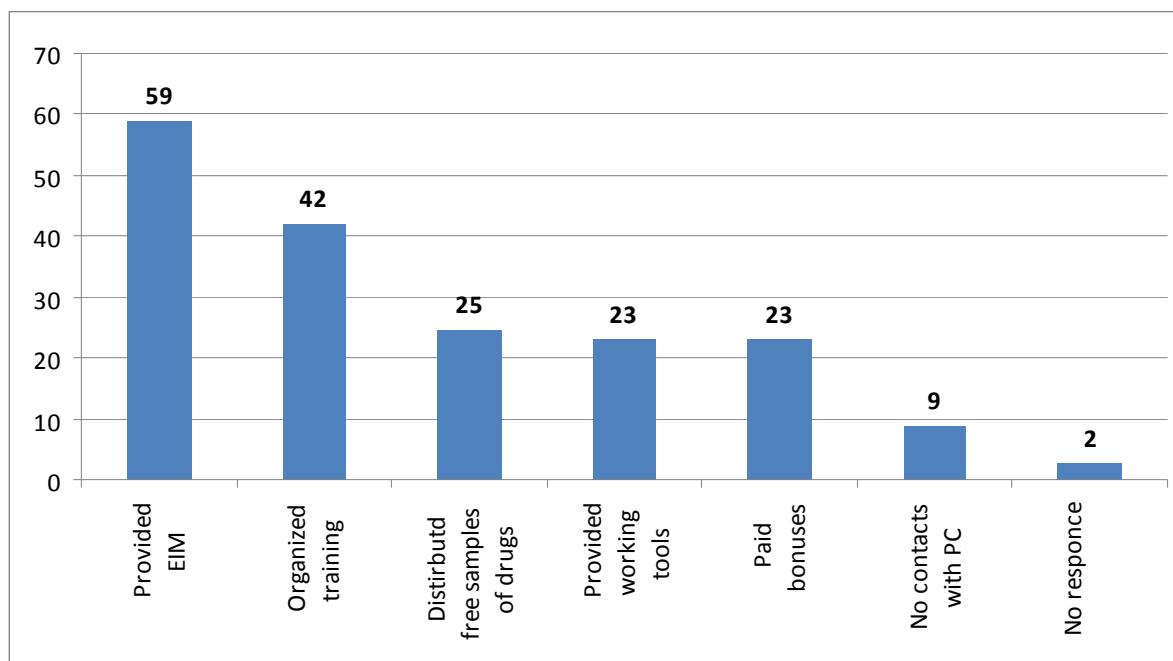
In all health facilities that we visited the companies-manufacturers make presentations of their products on a regular basis, moreover participation of physicians at so-called conferences is mandatory as it is approved by administration and included to the work schedule of FMC.

Despite of the number of steps undertaken by the Ministry of Health in order to restrict the activities of pharmaceutical companies at the level of health facilities, 90% of doctors noted that they have met with representatives of private pharmaceutical companies within last year, and 42% noted that the frequency of contacts was at least 1 time per month.

Active position of pharmaceutical companies includes application of all marketing tools: from distribution of information materials and presentations to providing of free samples of drugs and bonuses (see Figure 10).

Based on these observations it can be also supposed that the distribution percentage of free samples of drugs and bonuses is much higher, because not all physicians are willing to acknowledge the fact of cooperation with pharmaceutical companies.

Figure 10. Actions conducted by pharmaceutical companies within last 12 months, %



The survey revealed that 78% of physicians assess the activity of pharmaceutical companies as positive. Among the positive aspects of their work were the following aspects: provision of information on new drugs (84%), greater efficiency of drugs offered by them (25%), and the possibility of extra earnings for doctors (9%).

13% of respondents believe that the activity of private pharmaceutical companies have a negative impact, out of which 68% noted that the offered drugs are more expensive, 37% noted that doctors have now more work, and 31% of doctors admitted that they prescribe more drugs than patients really need.

Therefore, we must recognize that the activity of the pharmaceutical companies almost completely fills the information vacuum, which exists in relation to issues of rational drug use.

Norms introduced by the regulatory authorities, requiring to obtain official permission to conduct presentations and other activities of pharmaceutical companies, have not yet indicated a decrease in such activity and better understanding of physicians about the necessity of critical assessment of information on drugs provided by pharmaceutical companies.

An equally important aspect of the SDP Action Plan on rational use of drugs is to reduce the morbidity associated with drug use – i.e. pharmacological surveillance. One of the activities in this area is data collection on side effects, assessment of benefits/risks of drugs and provision of health care professionals and consumers with information about adverse reactions to drugs.

According to existing procedures, related to provision of information on adverse reactions to drugs in cases of development of side effects, physicians must submit the yellow card to DDS & MT.

Yellow card is a mandatory written report from physicians and pharmacists about the side effects of drugs, as well as facts of manifestation features in case of interaction of drugs with each other. The form "Reports about adverse reactions or lack of efficacy of drugs (yellow card)" was approved by the technical regulation "On the safety of drugs for medical use," it is disseminated among health care organizations by DDS & MT staff and it was published at the official website of DDS & MT. Collection and analysis of the yellow cards is carried out by DDS & MT. Also holders of the registration certificate for drugs must submit to the DDS & MT the reports on serious adverse reactions, including unforeseen ones, as well as periodic reports on safety (PSUR).

So the results of the survey showed that 70% of physicians experienced the side effects of drugs in their practice, the most common manifestation of which were allergic reactions (55%) and drug intolerance (35%). However, only 6% of them indicated that they filled in the "yellow" cards.

The main reasons for not using the "yellow" card is almost complete lack of awareness on part of physicians about the procedures, related to their processing. So 65% of doctors said these forms were not available, often in the discussion on this issue the respondents admitted that they even had never seen a yellow card and have not heard of their existence. Another 15% of physicians indicated that they did not know that they must provide information about side effects and moreover to whom they should submit such information.

Another aspect of the SDP implementation in part of measures on rational use is to provide population with information on use of drugs. According to the results of this survey, only 45% of physicians reported that they informed the population of their district about the rational use of drugs, moreover if to analyse the results of this study in a breakdown by regions, one can see that even physicians that work in the same locality, do not always share the same opinion in the assessment of this aspect. Thus, half of the respondents in Bishkek city and Issyk-Kul oblast noted that such events take place, and 27% admitted them in Osh oblast. The highest rate of respondents was in Chui oblast - 65%. The main method to inform the population is to inform them during their visits (66%) by using informational materials and posters (7%) and lectures for population (12% - only in Bishkek city). In-depth discussions of this issue with physicians showed that more often information on rational use of drugs covers only issues related to administration of certain drugs. Physicians reported on patients' self-treatment as one of the major problems, including irrational use of antibiotics and patients' preference for injectable drugs.

Thus, the results of the survey of medical personnel indicated that in the framework of the achievement of one of SDP goals «Rational use of drugs," the planned activities were not implemented in full. If development of regulatory documents, such as updating the EDL and Formulary of Essential Drugs and clinical protocols, has been implemented in full, the aspect of raising of awareness and knowledge improvement among medical staff and population remains practically unfulfilled.

4.5.3. The results of the survey conducted to study prescribing practices at primary level

The implementation of SDP should always include appropriate strategies to improve prescribing practices and distribution of drugs by medical professionals. The study on prescription practices of physicians and regular supervision of this process is one of the most powerful tools for improving the rational use of drugs. It should be noted that in Kyrgyzstan, assessment and study of prescription practices was conducted since 1998 through regular monitoring of the SDP implementation based on the format of WHO guideline "Core indicators on country pharmaceutical situation." Standardized indicators of rational drug use have been tested and adapted during the previous monitoring stages over SDP implementation. To conduct this survey on prescription practices of physicians at primary level there were also used the following indicators: the average number of drugs prescribed per medical visit, the percentage of antibiotics prescribed by physicians, the percentage of injections prescribed by physicians, the percentage of prescribed drugs, covered by EDL.

Identification of these indicators was based on working practices of physicians at outpatient institutions to treat acute and chronic diseases. Visits of outpatients were considered retrospectively,

based on data fixed in medical records (out-patient cards). The studied cases of patients's visits to FGP physicians has mostly covered the general illnesses, representing different diagnoses and different age categories, and there were considered cases, when patients referred to physicians regarding only one disease. Combined drugs were counted as one drug.

In order to conduct the study in each facility (FGP) there were selected 20 outpatient cards and there were examined patients' visits made in the period between January 2009 and September 2011.

Indicator: Average number of drugs prescribed per one medical visit.

The assessment goal of this indicator is to determine the prevalence of polypragmasy. This indicator is intended to describe the behavior of the physician, because too high or too small number of prescribed drugs may be indicative of poor (irrational and ineffective) prescription practices or uncertainty in diagnosis issued by physicians.

Calculations were done by using formula 2:

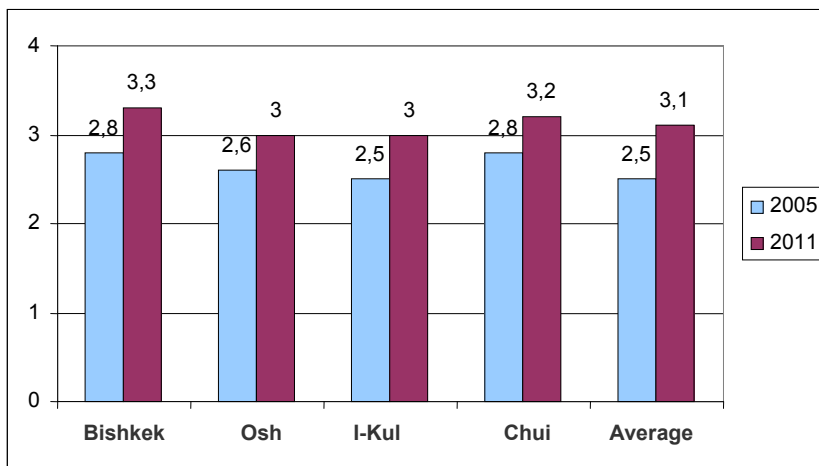
Formula 2. Calculation of the number of prescribed drugs per 1 outpatient visit

Average number of prescribed drugs per 1 outpatient visit	=	$\frac{\text{Total number of prescribed drugs during all visits}}{\text{Total number of examined outpatient visits}}$
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The study examined 480 cases of patients visits, associated with one or another disease for treatment of which physicians have prescribed 1403 various drugs. Analysis of the study of this indicator has shown that patients were prescribed in average 3.1 drugs per visit. Fluctuations in this indicator ranged from 3 to 3.3. According to monitoring results over implementation of the State Drug Policy, conducted in 2005, this figure made up 2.5.

The highest number of drugs prescribed by doctors in Bishkek city made up 3,3 and in Chui oblast - 3,2 drugs. In Osh and Issyk-Kul oblasts there were registered 3 drugs per one case. It should be noted that in 2011, compared with data of 2005, almost in all studied regions there was observed an increase of prescribed drugs. This fact is probably determined by excessive prescription of vitamin supplements of last generation and various herbal remedies and biologically active supplementation, widely advertised in the mass media (Figure 11).

Figure 11. Number of prescribed drugs per 1 outpatient treatment case



Indicator: Percentage of prescribed drugs, covered by Essential Drugs List (EDL)

Definition of this indicator allows us to determine the degree of compliance between actual practices and the national policy in the sphere of drugs, based on the index of drug prescription, covered by EDL. An essential element in regulation of expenses is mandatory prescribing of drugs by doctors mostly from the approved EDL, or only those drugs that were approved for this type of health facility.

For identifying this indicator there was determined whether prescribed drugs were included to the Essential Drugs List. The current list was approved by the Decree of the Government of the KR dated March 20, 2009 N 187. This indicator is expressed as a percentage ratio.

Calculations were done by using formula 3:

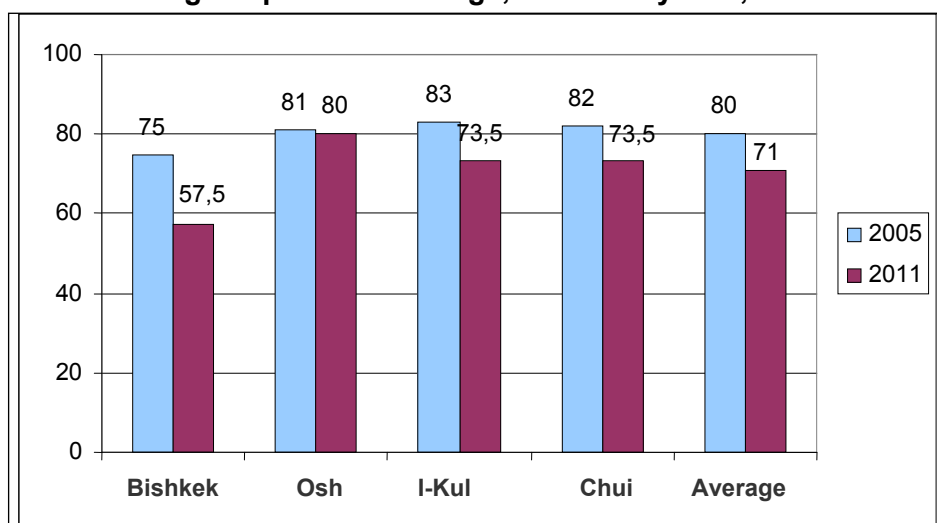
Formula 3. Calculation of percentage of prescribed drugs, covered by EDL

$\% \text{ of prescribed drugs, covered by EDL} = \frac{\text{Total prescribed drugs, covered by EDL}}{\text{Total number of prescribed drugs}} \times 100$

The study examined 480 treatment cases and 1403 different drugs prescribed, out of which 996 drugs were from the last approved edition of EDL, which made up on average 71% across the country. It should be noted that during monitoring of SDP implementation for the period from 2001 to 2005, this indicator has increased year by year and in 2005 made up 80%. A significant reduction in this indicator may also be the result of the fact that for the recent period at primary health care level there was carried out very few training activities related to the rational drug prescription, including measures for introduction of EDL and the Formulary of Essential Drugs.

The least number of drugs, covered by EDL, were prescribed in Bishkek city (57,5%), the highest number was prescribed by physicians of Osh oblast - 80%. Compared with 2005 the number of prescribed EDL drugs in Bishkek city fell by 17.5%, in Chui oblast by 6.5% (Figure 12).

Figure 12. Percentage of prescribed drugs, covered by EDL, %



Indicator: Percentage of prescribed antibiotics

This indicator determines the overall level in terms of use of antibiotics, prescription and usage of which is usually excessive, despite of high cost and the risk of possible development of bacterial resistance to antibiotics. This is particularly serious because the laboratory capacity test sensitivity of microbes to antibiotics is limited or not available at all in the regions of the Republic.

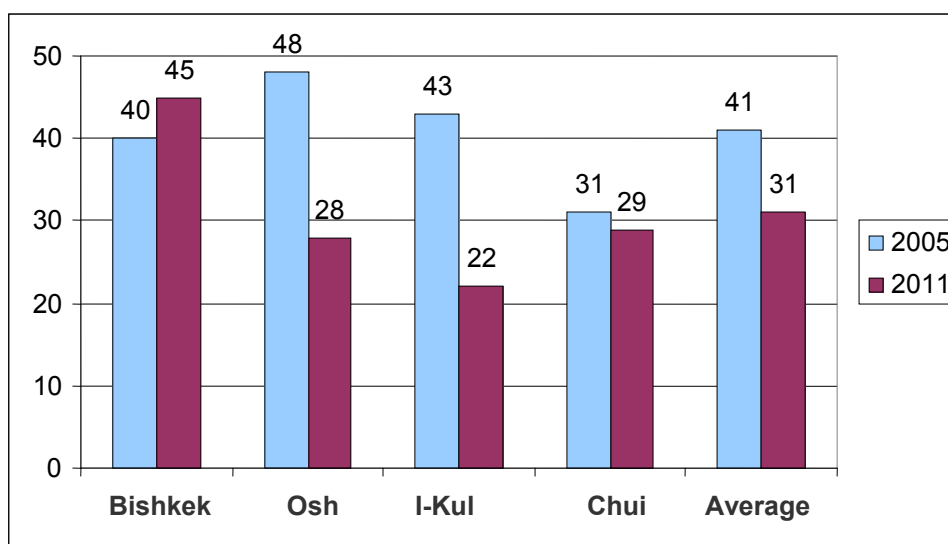
Calculations were done by using the next formula 4:

Formula 4. Calculation of percentage of prescribed antibiotics

%	of	Total number of prescription cases for 1 or more	
prescribed		antibiotics	X 100
antibiotics =		<hr style="width: 100%; border: 0.5px solid black;"/>	
		Total number of examined visits (cases)	

To study this indicator there were also examined 20 outpatient cards in each FGP with different diagnoses and there was determined the number of antibiotics out of the total number of prescribed drugs per 1 outpatient visit. The indicator was measured as a percentage.

Figure 13. Percentage of prescribed antibacterial drugs.



The level of prescription of antibacterial drugs made up in average 31% throughout the country, which was lower than figures of 2005. The increase of indicators compared to 2005 was observed only in Bishkek city from 40% to 45% (Figure 13).

In general, the findings testify some good downward trend for prescription of antibiotics by physicians.

Indicator: The percentage of prescribed injectable drugs

The purpose of the definition of this indicator is to measure the use of injectable drugs, which are usually excessively administered, despite of the high cost and inconvenience in usage, as this procedure requires professional skills. Prescription of injectable drugs leads to irrational use of funds, but also exposes patients to risks, related to adverse reactions and diseases. Such consequences are less likely when using oral drugs.

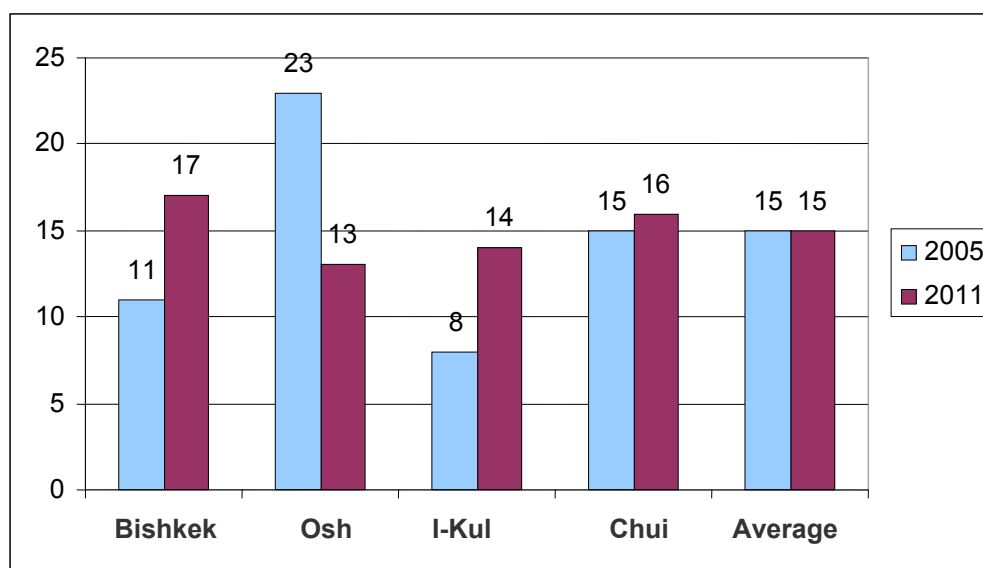
Calculations were done by using formula 5:

Formula 5. Calculation of percentage of prescribed injectable drugs

$$\% \text{ of prescribed injections} = \frac{\text{Total number of patients, who were prescribed injections}}{\text{Total number of examined patient visits}} \times 100$$

To study this indicator routine vaccinations were not considered as injections, and only those injectable drugs were taken into account, which were prescribed during the examined visit case.

Figure 14. Percentage of prescribed injectable drugs



Prescription of injectable drugs throughout the country is very uneven with the average figure amounting to 15%. Despite of the fact that the average for the country remained the same, there were increased indicators for Bishkek city and Issyk-Kul oblast by 6% compared with 2005. Reduced rate of prescribed injections as compared with 2005 is observed only in Osh oblast and decrease was made from 23% to 13% (Fig. 14).

4.5.4 Results of study of drugs prescribing at the appropriate prescription forms

In order to strengthen and to enforce drug prescription procedures there was approved the Decree of the Government of the KR dated January 5, 2011 N 2, "On approval of drug prescription procedures and their dispensing in the Kyrgyz Republic", which approved three forms of types of prescription blanks. The prescription form N 148-1/y is used to prescribe one name of a drug for their patients on exempt or free of charge basis. The prescription form N 107-1/y allows to prescribe one name of a drug, which is subject to quantitative recording, and up to 2 names of other drugs.

The approved form for prescription of drugs that contain narcotic substance, are used to prescribe narcotic drugs, which are subject to national control in the KR.

This Decree legislatively determines that physicians should prescribe drugs, using only standard established forms and shall prescribe them under international nonproprietary (generic) names.

In spite of the activities undertaken in the sphere of prescription-based drug dispensing up to date non-prescription sale of drugs is constantly increasing, division of drugs into prescription and non-prescription categories is of formal nature: almost all prescribed drugs, excluding narcotic,

psychotropic and drastic drugs, which are under national control, can be freely bought at the pharmacy.

Besides, in Kyrgyzstan any antibacterial drugs can be easily bought without having prescription. Prescriptions are issued by doctors most often only for subsidized drugs in the frame of different programs (MHI AP, АСП, SGP).

There is the practice of drug prescription, when physicians use so-named "brand" prescription forms, issued by various pharmaceutical companies (to be used for prescription only of those drugs that are promoted by the specific company). As we know, there are different schemes of work to process such prescriptions: one is that when prescriptions are collected from each company at the pharmacy and the physician is paid a certain percentage of the amount of prescribed drugs.

The results of the research aimed at studying the availability of prescription forms at the level of physicians raises some concern (Table 19). Prescription forms, issued by MHIF were available at the time of the study only among 70% of family physicians, while the established standard prescribed forms were available only among 55% of all interviewed physicians. At the same time 32% of physicians recognized that they are using forms of pharmaceutical companies, among them 58% of respondents were from Chui oblast. Observations show that in fact this figure is much higher, but due to official policy not all physicians recognize cooperation with pharmaceutical companies. It should be noted that the prescribing practices, when forms of pharmaceutical companies are used, is actively suppressed in accordance with the order of MOH KR. On the basis of this order the specialists of DDS & MT regularly organize inspections and seize so-called "brand" prescriptions from doctors, and disciplinary actions are imposed on doctors. Also, warning letters about suspension or cancellation of the licenses are sent to pharmaceutical companies, whose forms are seized from the doctors during the inspections.

Table 19. Availability of prescription forms among family physicians, (%)

Title	Bishkek	Issyk-Kul obl.	Osh obl.	Chui obl.	Total
Prescription forms of MHIF	75	58	65	81	70
Prescription forms of established sample	67	47	38	69	55
Prescription forms of pharmaceutical companies	33	37	13	58	32

To study the frequency of drug prescriptions, issued to patients with various diseases there were interviewed patients who attended physicians and visited pharmacies to purchase drugs. Interviewers visited 24 pharmacies in the surveyed regions, located in the immediate proximity to FMC and contracted by TU MHIF. At the certain time there were interviewed and observed 30 patients in each pharmacy, the total number of interviewed patients made up 720 people for the republic. The results of this survey and observation have shown that, in average, only 3% of patients who came to the pharmacy after medical visit, had prescriptions of MHI AP, the largest number of patients who came to the pharmacy with prescriptions of MHI AP was registered in Osh oblast - 5%, Chui oblast - 4%, Issyk-Kul - 3%, and in Bishkek city none of the patients who visited the pharmacy at the time of the study had the prescription of MHI AP.

In Issyk-Kul oblast at the time of study none of the patients who came to the pharmacy had a standard prescription form of established sample. Most patients, who came after medical visit, having prescription forms issued by certain pharmaceutical companies, were registered in Bishkek - 9% of patients.

Table 20.**Number of patients, who visited pharmacies with prescription, (%)**

Region	Patients with prescription forms of old sample,	Patients with prescriptions of MHI AP	Patients with prescriptions issued by pharm. company	Patients without prescription forms, drug prescriptions were written on paper
Issyk-Kul oblast	0%	3%	2%	84%
Bishkek city	4%	0%	9%	80%
Chui oblast	4%	4%	5%	77%
Osh oblast	5%	5%	5%	79%

As shown in Table 20, doctors often prescribe drugs just on pieces of paper. In-depth interviews with doctors to find out why they do not write prescriptions using standard forms, has clarified that the prescription forms require names of drugs to be written in Latin, and it takes more time. Since doctors are very busy and have a huge queue at the reception area, they try to save their time by doing so. Some admitted they wanted to avoid problems with inspection bodies, such as MHIF, as they have to prescribe more drugs than it is instructed under approved CGs/CPs, including antibiotics, and some prescription forms cannot be used to prescribe these drugs because they are afraid of different penalties and audits. Some of the doctors referred to the lack of standard prescription forms, but in all cases, when we were clarifying the reason of their absence we got evidences that, in fact, blanks were available in the facility in sufficient quantity.

5. Conclusion

SDP as the strategic document has always been developed in the framework of general health system reform. The first draft of SDP, approved in 1998, became the way to overcome the crisis in the pharmaceutical sector and has had a decisive influence on the development of the regulatory system in the drug area. Two SDP drafts, implemented from 1998 to 2005, have ensured qualitative changes and dynamic development of the pharmaceutical sector and they were developed through systematic consultations with all stakeholders under financial and methodological support of WHO/EURO. In addition, there was conducted regular monitoring of the SDP implementation.

In the State Drug Policy for 2007-2011 the majority of interventions were focused on improving the established drug regulation systems, solving the problems related to access of population to drugs, including those in rural areas, the rational use of drugs and the development of informational system in drugs area, since these issues remained highly relevant and had the political and social significance.

The logical structure of the SDP has shown that this program had a number of strengths and weaknesses. As the strengths there were identified succession of the program, its focus on the significance and feasibility of interventions, the availability of M&E tools. The weaknesses of the program were the lack of expected results for which the program was directed, the lack of communication between some components of the program, the lack of indicators related to the impact and effectiveness of policies and the assignment of responsibility for SDP implementation on one performer. Such a system cannot be sufficiently effective, because there is no function of external control over performance and results achievement and no interest from other institutions and agencies, involved in drug supply processes.

As part of the SDP there was carried out serious work on the development and revision of legislation regulating relationships in the sphere of drugs circulation. In order to further optimize measures on drugs circulation, it is needed to continue law improving efforts and to develop it jointly with all stakeholders and agencies. The involvement of interested parties and stakeholders in the development and implementation of the legislation and regulatory provisions will facilitate the enforcement of the law regulations as they were formulated with the participation of interested persons and parties.

Analysis of the pharmaceutical market has shown that the sector is constantly developing thanks to opening of new pharmaceutical organizations, increased range of drugs and medical products, increased volume of import and production output of domestic manufacturers.

Despite the fact that availability of pharmacies in rural areas remains to be problematic, it should be noted that a lot of measures were undertaken in this direction (simplification of licensing procedures for rural regions, re-training of health workers to get the right to work in pharmacies). Achievement of results was achieved also thanks to the fact that in Health Care Reform Program «Manas» a lot of attention was given to the development of the network of private pharmacies with a wide territorial coverage. During the implementation of the second program «Manas Taalimi» the further steps were done to promote opening of pharmacies in rural areas.

The number of studies and the assessment of physical access to drugs conducted in the framework of this study showed that physical availability of drugs and their territorial accessibility has been significantly improved. However, the highest costs still fall under expenses, related to purchase of drugs out of pocket money for many patients and many population categories have to cover these costs. The cost of treatment of patients depends directly on which drugs are prescribed by the doctor. In this regard issues of rational use of drugs remain highly relevant. Proper prescription and use of drugs is of great benefit to patients and leads to lower costs, so medical professionals should always

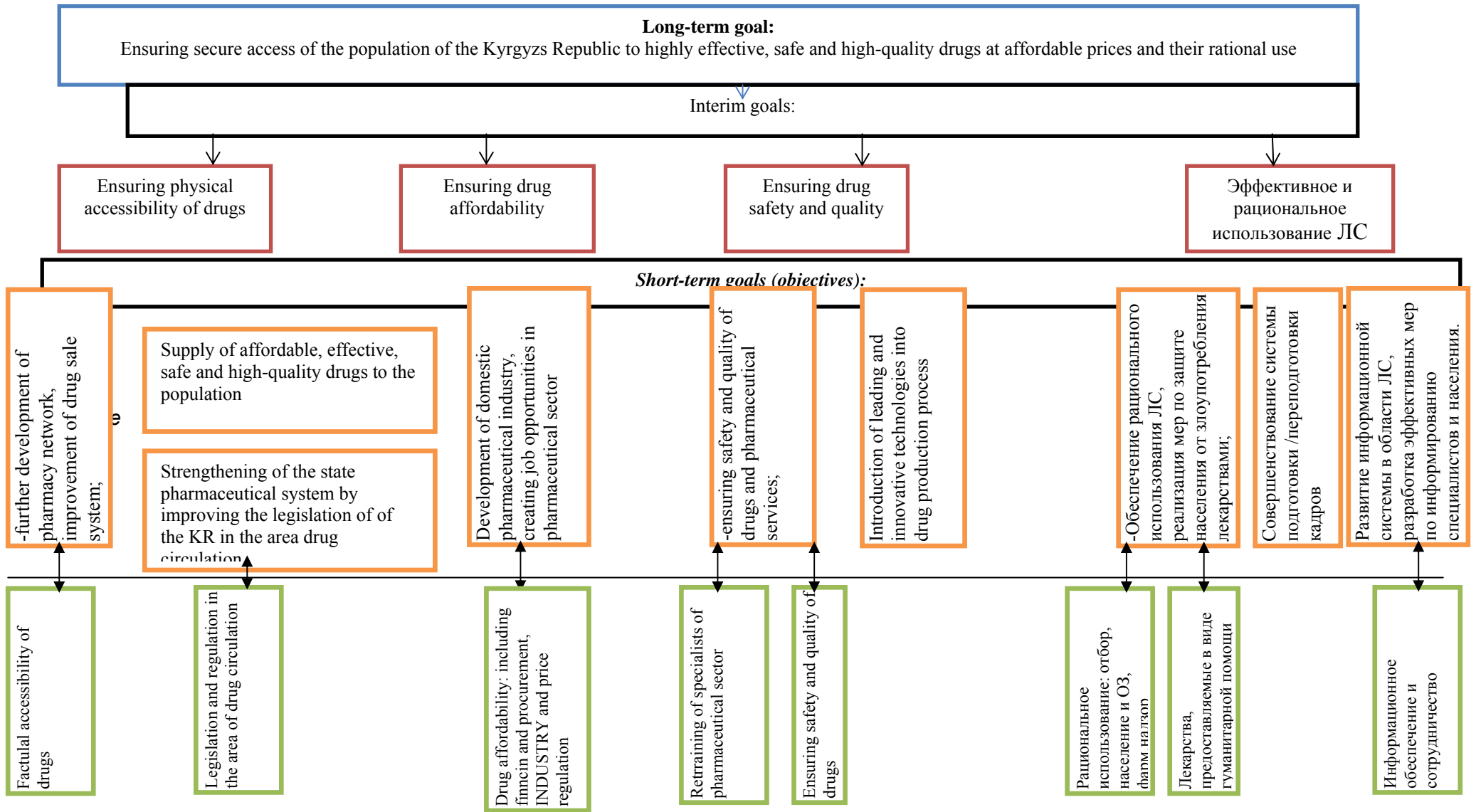
get the necessary tools and unbiased information to be able to make good decisions. However, as shown by the results of the survey efforts are being made sufficiently on the part of regulating bodies to ensure that physicians are provided with objective information, as the awareness of physicians about drugs is very low, the physicians get their information about drugs mostly from drugs manufacturers. Besides, the large-scale practices of self-medication are widespread among the population, most of the drugs are purchased without a prescription, including antibiotics.

6. Recommendations

- **Development of SDP:** National policy is the framework document, which should focus on long-term goals, so we need to clearly define the objectives, program components and their logical link
- During development of the document attention should be drawn to the mechanisms of SDP: for this purpose all stakeholders should be involved in the implementation process
- For assessment of the SDP it is necessary to develop indicators of goals and objectives, and indicators on activities, to determine the baseline and target values of indicators. The wording of the indicators must correspond to the SMART formula
- The control function (i.e., acceptance of reports on implementation, evaluation of the effectiveness of the process) over SDP implementation should be assigned to the MOH.
- **Legislation improvement:** It is needed to further improve the legislation on drugs by joint efforts of all stakeholders and agencies, particularly with regard to the existing contradictions. The involvement of interested parties and stakeholders in the development and implementation of the legislation and regulatory provisions will facilitate the execution of the regulations of the law, as they are formulated with the full participation of stakeholders and interested parties.
- **Drugs accessibility:** To continue efforts directed at improving the physical accessibility of some groups of drugs. In order to ensure economic affordability of drugs to carry out detailed study of the mechanisms impeding the spread of this program and to continue to inform the population about MHI AP
- **Ensuring quality and safety of drugs:** As the quality control functions are strengthened, the focus should be shifted towards quality assurance programs;
- introduction of regulatory requirements to conduct active monitoring of all newly registered drugs, if necessary, to impose restrictions.
- strengthening of state regulation in relation to supervision of drug circulation and pharmaceutical activities of entrepreneurs.
- **Rational use of drug:** To activate the policy of rational use of drugs among medical professionals, for this purpose to develop a sustainable program for rational drug prescription, including economic benefits, quality and evidence-based effectiveness of drugs;
- to conduct serious analysis of the situation, related to promotion and advertising of drugs in Kyrgyzstan in order to continue further training of health professionals on critical assessment of information on drugs provided by pharmaceutical companies, methods of counteraction against aggressive marketing and on communication skills when dealing with medical representatives of pharmaceutical companies;
- To strengthen activities aimed at informing the population about the damages from self-medication and irrational use of antibiotics, therefore to develop measures to implement the system of responsible self-medication;
- In some issues of rational use of drugs to exploit fully the capacity of pharmacists in health care system.

Attachment 1

Figure 1. Logical structure of the State Drug Policy for 2007-2010



Attachment 2

Table 1. Villages of Naryn oblast with indication of pharmacy institutions

Rayon	Name of village	Population	Number of pharmacies	Name of village	Population	Number of pharmacies
Ak-Talaa rayon	1. Ak-Talaa	1028	1	13. Ugut	769	
	2. Ak-Chu	432		14. Baygonchok	591	
	3. Jany-Tilek	413		15. Kadyraly	1116	
	4. Kayyndy-Bulak	907		16. Baetovo		6
	5. Terek	1057		17. Kosh-Dobo		1
	6. Kara-Burgan	1948	1	18. Jany-Talap		1
	7. Ak-Kuu	819		19. Ak-Kiya		1
	8. Kary-Oi	2610		20. Terek		1
	9. Kok-Jar	722		21. Kurtka		1
	10. Cholok-Kaun	1770	2	22. Togolok Moldo		1
	11. Jergetal	239		23. Tilektesh		1
	12. Konorchok	1066	1			
				11 villages without pharmacies	14487	18(12)
2. At-Bashi rayon	1. Ak-Jar	2594	1	9. Kyzyl-Tuu	1517	1
	2. Ak-Moyun	2022		10. Kara-Bulun	1296	
	3. Terk-Suu	1350		11. Dyikan	556	1
	4. Acha-Kayyndy	3111		12. Ozgorush	611	
	5. Bash-Kayyndy	3201	1	13. Pervomayskoe	865	
	6. Bolshevik	673		14. Ak-Muz		3
	7. Kazybek	2923	1	15. At-Bashi		16
	8. Jany-Koch	708		16. Dyikan		1
				8 villages without pharmacies	21427	25(8)
3. Zhumgal rayon	1. Kyzyl-Suuk	226		22. Sary-Bulun	135	
	2. Bash-Kuugandy	2237		23. Ken-Suu	185	
	3. Jany-Aryk	909	3	24. Kyzyl-Korgon	611	
	4. Bazar-Turuk	560		25. Sary-Bulun	135	
	5. Kyzart	1209		26. Dungurovo	40	
	6. Kyzyl-Emgek	832		27. Kok-Oi	1801	1
	7. Kara-Chi	1041		28. Kichi-Aral	216	
	8. Doskulu	1759	1	29. Kyrchin	105	
	9. Lama	529		30. Chon-Dobo	1045	1
	10. Apal	296	1	31. Tash-Dobo	1522	1
	11. Kuyruchuk	3264	1	32. Besh-Terek	615	
	12. Tugol-Say	1334	1	33. Jany-Jol		
	13. Erkin	372		34. Ak-Talaa		
	14. Kyzyl-Jyldyz	1637		35. Ortok		1
	15. Mantysh	415		36. Buguchu		
	16. Kara-Maynok	415		37. Ak-Kuu		
	17. Kotur-Suu	155		38. Tuz		
	18. Tabylgety			39. Minkush		2
	19. Ak-Kul			40. Baizak		2
	20. Ken-Suu	185		41. Chaek		8

	21. Kyzyl-Korgon	611				
				30 villages without pharmacies	24148	23(11)
4. Naryn rayon	1. Ak-Kuduk	533		19. Ottuk	1286	
	2. Shoro	621		20. Tash-Bashat	1118	1
	3. Dobulu	1361	1	21. Kayyndy	639	
	4. Alysh	434		22. Oruk-Tash	112	
	5. Kenesh	597		23. Jylan-Aryk	1206	
	6. Jan-Bulak	2008		24. Uchkun	2126	
	7. Jergetal	2525		25. Orto-Nura	1257	2
	8. Jalgyz-Terek	970	1	26. Ak-Bulun	277	
	9. Kyzyl-Jyldyz	1048	2	27. Iyri-Suu	916	1
	10. Kara-Unkur	74		28. Orto-Saz	532	
	11. Lahol	987	1	29. Oruk-Tam	101	
	12. Jer-Kochku	636		30. Chet-Nura	657	
	13. Emgekchil	2819	1	31. Tegerek-Kyrchin	87	
	14. Kuybyshev	3121		32. Eki-Naryn	596	
	15. Min-Bulak	951		33. Emgek-Talaa	1277	1
	16. Echki-Bashi	1458		34. Ak-Talaa		1
	17. Kazan-Kuygan		1	35. Kulanak		1
	18. 8 March		1	36. Min-Bulak		1
			23 villages without pharmacies	32330	16(13)	
5. Kochkor rayon	1. Kochkor		14	15. Tolok		1
	2. Bolshevik		1	16. Chekildek		
	3. Tendik			17. Don-Alysh		1
	4. Kara-Saz			18. Komsomol		1
	5. Kara-Kungoi		1	19. Kok-Jar		1
	6. Kum-Dobo		1	20. Cholpon		1
	7. Ak-Jar		1	21. Ara-Kul		
	8. Buguchu			22. Osoviahim		
	9. Shamshy		1	23. Tuz		1
	10. Ak-Kuu			24. Erkin		
	11. Sary-Bulak			25. Ara-Kel		1
	12. Kara-Too		1	26. Kara-Jol		1
	13. Arsy			27. Jany-Jol		1
	14. Semiz-Bel		1	28. Kara-Suu		1
				29. Kyzyl-Dobo		1
			11 villages without pharmacies		31(18)	

Table 2. Villages of Issyk-Kul oblast with indication of pharmacy institutions

Rayon	Name of village	Population	Number of pharmacies	Name of village	Population	Number of pharmacies
1. Ak-Suu rayon	1. Ak-Bulun	1618	1	22. Uch-Kaynar	774	
	2. Ak-Chi	1301		23. Shapak	813	
	3. Boru-Bash	259		24. Kurbu	736	
	4. Enchilesh	940		25. Chelpek	2361	
	5. Jany-Aryk	1713		26. Kachybek	785	
	6. Zhergalan	87		27. Engilchek	109	
	7. Sary-Kamysh	1516		28. Echgili-Tash	3	
	8. Zhergez	824		29. Zyndan	914	
	9. Otuz Uul	993		30. Kyzyl-Kiya	788	
	10. Orliynoe	981		31. Boz-Uchuk	3093	2
	11. Jyldyz	815		32. Tegizchil	1195	
	12. Lesnoe	10600		33. Boz-Bulun	825	
	13. Tash-Kiya	1667	1	34. Cholpon	1287	
	14. Tash-Koroo	3		35. Kerege-Tash	2317	
	15. Ak-Bulak			36. Jol-Kolot	2186	

	16. Cherik	269		37. Otradnoe	1682	
	17. Ichke-Zhergez	1618		38. Tepke	835	
	18. Kara-Isal			39. Teploklyuchinka	10600	7
	19. Karakol	1657		40. Burma-Suu	1571	
	20. Kayryma-Aryk	1112		41. Koyluu	3	
	21. Kara-Kyz	389		42. Maman		1
				37 villages without pharmacies		12(5)
2. Jeti-Oguz rayon	1. Tilekmat	1998		25. Ak-Kochkor		
	2. Ak-Dobo	1207		26. Yrdyk		1
	3. Ak-Osten	1142		27. Boltobay	876	
	4. Munduz	527		28. Konkino	491	
	5. Ak-Shyirak	179		29. Kok-Dobo	721	
	6. Kara-Say	11		30. Barskoon		1
	7. Ak-Terek	2771		31. Saruu		1
	8. Jenish	1953		32. Kyzyl-Oruk	198	
	9. Kichi-Zhargylchak	21995		33. Kyzyl-Suu		9
	10. Ak-Kochkor	1360		34. Zhalgyz-Oruk		
	11. Zhele-Dobo	871		35. Zelenyi Zhai	267	
	12. Kabak	1026		36. Boz-Beshik	1042	
	13. Taldy-Bulak	57		37. Issyk-Kul	321	2
	14. Chyrak	1554		38. Tamga	3113	1
	15. Zhalgyz-Oruk	1205		39. Jon-Bulak	1582	
	16. Lipenka	1341		40. Zharkynbaevo	1842	
	17. Ichke Bulun	1179		41. Pristan		
	18. Podgornoe	921		42. Jon-Bulak		
	19. Svetlaya Polyana	2101		43. Kaynar	488	
	20. Tosor	1645		44. Bogatyrovka	668	
	21. Kytai	531		45. Orgochor	1886	
	22. Karool-Dobo	639		46. Zhuuku	52	
	23. Darhan		1	47. Chon-Kyzyl-Suu	494	
	24. Jeti-Oguz		2	48. Chon-Zhargylchak		
			40 villages without pharmacies		19(8)	
3. Issyk-Kul rayon	1. Ananievo		3	15. Kozhoayyr		
	2. Kok-Dobo			16. Tamchy		2
	3. Chet-Vaysoruun			17. Kosh-Kol		
	4. Bosteri		6	18. Chyrlykty		
	5. Baktuu-Dolonotu		1	19. Temirovka		1
	6. Grigorievka		5	20. Kashat		
	7. Grigorevskaya pristan			21. Toru-Agyr		
	8. Kara-Oi		1	22. Kyzyl-Oruk		
	9. Korundu		1	23. Sary-Kamysh		
	10. Bulan-Sogotuu			24. Chon-Sary-Oy		
	11. Chon-Oruktu		1	25. Baetovka		
	12. Orto-Oruktu			26. Ornok		
	13. Oruktu-Hutor			27. Sary-Oy		
	14. Semenovka			28. Chok-Tal		
			19 villages without pharmacies		21(9)	
4. Tup rayon	1. Belovodskoe	234		18. San-Tash	177	
	2. Frunzenskoe	820		19. Sary-Tologoy	1107	
	3. Min-Bulak	572		20. Balbay	1831	
	4. Aral	1376		21. Kurmantu	2299	
	5. Dolon	765		22. Taldy-Suu	3561	1
	6. Кош-Добо	355		23. Ichke-Suu	1018	
	7. Sary-Dobo	1383		24. Koochu	1570	
	8. Issyk-Kul	1677	2	25. Korumdu	1509	
	9. Yntymak	537		26. Toguz-Bulak	1175	
	10. Toktoayan	1239		27. Sary-Bulun	544	
	11. Chon-Toguz-Bai	823		28. Shaty	1085	
	12. Kichi-Oruntu	1160	1	29. Chon-Tash	982	
	13. Oy-Bulak	659		30. Zhylu-Bulak	1210	
	14. Oy-Tal	934		31. Mikhaylovka		1
	15. Kara-Chunkur	1454		32. Tup		9
	16. Karkyry	118		33. Kudurgu		1
	17. Ken-Suu	1513		34. Ak-Bulak		1

				27 villages without pharmacies		16(7)
5. Ton rayon	1. Ala-Bash	1268		15. Archaluu	290	
	2. Kalkaga	536		16. Tura-Suu	723	
	3. Kok-Moinok-1	756		17. Kazhy-Say	452	3
	4. Toguz-Bulak	1680		18. Tura-Suu	723	
	5. Burkut	1974		19. Don-Talaa	1776	
	6. Kok-Sai	659		20. Ak-Olon		
	7. Temir-Kanat	994		21. Kyzyl-Ompol	226	
	8. Ak-Sai	1628	1	22. Jer-Uy	386	
	9. Kara-Talaa	1776	1	23. Tort-Kul	2932	
	10. Bar-Bulak			24. Ton	1644	
	11. Kyzyl-Tuu	1264		25. Ottuk	1547	
	12. Kok-Moinok-2	512		26. Shor-Bulak	1012	
	13. Kol-Tor	871		27. Bokonbaevo		8
	14. Konur-Olon			28. Kara-Koo		2
			23 villages without pharmacies		15(5)	

Table 3. Villages of Talas oblast with indication of pharmacy institutions

RAYON	Name of village	Population	Number of pharmacies	Name of village	Population	Number of pharmacies
1. Bakai Ata rayon	1. Kyzyl Sai	1245		12. Urmalar	462	
	2. Kyzyl Charba	257		13. Min Bulak	2313	1
	3. Namatbek	663		14. Ozgorush	4399	1
	4. Ken Aral	2576		15. Kyrgyzstan	2066	
	5. Kok Tash	560		16. Jon Korgon	359	
	6. Ak-Dobo	3893	2	17. Birinchi Mai	1461	
	7. Bakai Ata	6552	8	18. Yntymak	2028	1
	8. Boo Terek	4662	1	19. Tuyto	760	
	9. Madaniyat	1371	1			
	10. Tash Kuduk	1088				
			13 villages without pharmacies		15(7)	
2. Kara Buura rayon	1. Zhoon Dobo	1985	1	12. Kyzyl Adyr	9964	14
	2. Zhiyde	1304		13. Chon Kara Buura	2651	
	3. Amanbaevo	5464	3	14. Uch Bulak	1304	
	4. Ak Zhar	993	1	15. Kara Sai	2503	
	5. Kuru Maimak	359		16. Ak Bashat	1427	
	6. Suulu Maimak	1547		17. Kok Sai	3091	2
	7. Beysheke	1398	1	18. Kaynar	1093	
	8. Bakyyan	2424	1	19. Chymkent	4581	1
	9. Kara Buura	898	1	20. Kok Dobo	677	
	10. Kara Suu	1641		22. Sheker	1500	1
	11. Tamchy Bulak	311		23. Archagul	1882	1
			12 villages without pharmacies		27(11)	
3. Manas rayon	1. Aral	1203	1	12. Sogot	227	
	2. Sary Bulak	166		13. Kenesh	627	
	3. Manas	574		14. Uch Korgon	1095	
	4. Pokrovka	6919	5	15. Nyldy	559	
	5. Kara Archa	579		16. Talas	3029	4
	6. Zhiyde	695		17. Novodonetskoe	435	
	7. Tash Bashat	249		18. Zhayylgan	1166	
	8. Kayyndy	459		19. Ak Tash	293	
	9. Chech Dobo	885		20. Chon Karka	1285	
	10. Maiskoe	3357		21. Kyzyl-Jyldyz		1
	11. Balasary	1355				
			17 villages without pharmacies		11(4)	
4. Talas rayon	1. Aral	3524		15. Chyyrchyk	231	
	2. Kum Aryk	1938		16. Sasyk Bulak	1765	

	3. Kozuchak	1116		17. Kara Oy	1747	
	4. Arashan	709		18. Kenesh	406	
	5. Kyzyl Tuu	2342		19. Khan Burga	470	
	6. Kok Kashat	1225		20. Kara-Suu	2299	1
	7. Tash Aryk	1263		21. Kuugandy	1984	
	8. Ak Zhar	1505		22. Jon-Aryk	2144	
	9. Orto Aryk	1277		23. Kok-Tokoi	1959	
	10. Balbal	914		24. Taldy-Bulak	2274	1
	11. Kalba	11801		25. Ak-Korgon	961	
	12. Kok Oy	5657	3	26. Kopuro-Bazar	3658	
	13. Ak Sai	3589	1	27. Chat Bazar	1283	2
	14. Ogonbaev		1			
				21 villages without pharmacies		9(6)

Table 4. Villages of Chui oblast with indication of pharmacy institutions

Район	Наименование села	Числ. нас-я	Кол-во АУ	Наименование села	Числ.н ас-я	Кол-во АУ
1. Isyk-Ata rayon	1. Kirovkoe	1738		26. Milyanfan	3964	2
	2. Ak Kuduk	649		27. Sary Zhon		
	3. Kotovskoe	290		28. Nurmanbet	1833	1
	4. Pervomayskoe	593		29. A. Toktonalieva	1472	
	5. Hun Chi (part)	460		30. Kenesh	2617	
	6. Birdik	1801		31. Sotsialchy	600	
	7. Hun Chi (part)	176		32. Telman	1068	
	8. Gagarin	395		33. Ak Sai	586	
	9. Dyuek	959		34. Zhetigen	656	
	10. Internationalnoe	2736	1	35. Dayyrbek	132	
	11. Jar Bashy	263		36. Kyzyl Aryk	601	
	12. Almaluu	1034		37. Otogon	729	
	13. Gornaya Serafimovka	342		38. Zhaylama	319	
	14. Jogorku Ichke Suu	207		39. Nizhnii Norus	709	
	15. Ichke Suu	228		40. Rot Front	968	1
	16. Karagai Bulak	509		41. Syn Tash	722	
	17. Norus	257		42. Nizhnyaya Serafimovka	1148	
	18. Tash Bashat	456		43. Isyk-Ata	373	1
	19. Uch Emchek	225		44. Dmitrievka		2
	20. Ken Bulun	2706		45. Yurevka		2
	21. Hidrostroytel	1032	1	46. Budenovka		2
	22. Druzhba	2201	1	47. Novopokrovka		4
	23. Cholpon	1182		48. Tuz		1
	24. Krasnaya rechka	6206	4	49. Ivanovka		7
	25. Karmelik	1538		50. Luxembourg		1
			35 villages without pharmacies		31(15)	
2. Panfilov rayon	1. Voznesenovka	3896		11. Rovnoe	849	
	2. Orto Kayryma	953		12. Telman	1071	
	3. Erkin Sai	700		13. Bukara	1362	
	4. Kyurpuldek	1424		14. Kum Aryk	1088	
	5. Jayylma	984		15. Orto Aryk	1616	
	6. Efironos	746		16. Cholok Aryk	871	
	7. Chorgolu	346		17. Pervomayskoe	537	
	8. Ozernoe	354		18. Oktyabrskoe	1546	
	9. Oyrondu	459		19. Kirov	1546	
	10. Panfilovskoe		6	20. Chaldyvar		2
			21. Kayyndy		2	
			18 villages without pharmacies		10(3)	
3. Sokuluk rayon	1. Tash Bulak	1783		34. Lesnoe	809	
	2. Berlyulyu	217		35. Gavrillovka	2559	1
	3. Chetindi	60		36. Shapta	1255	
	4. Komsomolskoe	2565		37. Verhnevostochnaya	346	1
	5. Ozernoe	602		38. Zelenoe	927	
	6. Studentcheskoe	1712	1	39. Ak Kashat	492	
	7. Assylbash	1959		40. Mirnyi	691	

	8. Ak Jol	2319		41. Chat Kel	2742	
	9. Tort Kol	1072		42. Togoz	626	
	10. Jylamysh	1227		43. Aral Dalnii	332	
	11. Jany Jer	4774	2	44. Kamyshanovka	1527	
	12. Zapadnoe	865		45. Dostuk	257	
	13. Nizhnevostochnoe	1376		46. Karasakal	393	
	14. Zarya	668		47. Novoe	507	
	15. Maiskoe	194		48. Nizhnechuiscoe	1866	1
	16. Belek	959		49. Kashkabash	373	
	17. Aral Blizhnii	975		50. Nizhnii Orok	1455	
	18. 1 May	1754		51. Plodovoe	190	
	19. Kuntuu	3306	1	52. Sarban	905	
	20. Malaya Shapta	187		53. Seleksionnoe	1309	
	21. Chon Jar	721		54. Pervomaiskoe	1754	
	22. Malovodnoe	2446		55. Natsionalnoe	510	
	23. Tokbay	348		56. Panfilov	313	
	24. Mirnoe	595		57. Saz	1378	
	25. Sadovoe	1009		58. Konush	371	
	26. Severnoe	572		59. Sokuluk		18
	27. Stepnoe	160		60. Voenno-Antonovka		8
	28. Taltak	106		61. Manas		2
	29. Uchkun	632		62. Kyzyl-Tuu		1
	30. Jal	1860		63. Romanovka		1
	31. Verhnii Orok	552		64. Novopavlovka		7
	32. Kaltar	94		65. Jany-Pahta		1
	33. Kirovskoe	1174				
				52 villages without pharmacies		45(13)
4. Moscow rayon	1. Temen Suu	1677	1	14. Murake	597	
	2. Ak Torpok	349		15. Besh Oruk	1267	
	3. Keper Aryk	638		16. Kosh Dobo	1124	
	4. Chon Aryk	1118		17. Zavadscoe	1769	
	5. Krupskoe	1635		18. An Aryk	501	
	6. Besh Terek	1011		19. Bolshevik	304	
	7. Predetechenka	1477		20. Tyolyok	950	
	8. Sretenka	3649	3	21. Spartak	1344	
	9. Zarya	632		22. Malovodnoe	494	
	10. Kyz Molo	1285		23. Belovodskoe		15
	11. Ak Seok	315		24. Ak-Suu		3
	12. Ak Bashat	723		25. Sadovoe		2
	13. Bala Ayylchy	908		26. Petrovka		3
				27. Aleksandrovka		3
				20 villages without pharmacies		30(7)
5. Kemin rayon	1. Kyzyl Suu	1489		17. Jany Alysh	2104	1
	2. Bordu	434		18. Jany Jol	220	
	3. Ilyichevskoe	1207		19. Altymysh	395	
	4. Kara Bulak	815		20. Chuiscoe	344	
	5. Beysheke	875		21. Tegirmenchi	1290	
	6. Karool Debe	895		22. Kyzyl Oktyabr	1417	
	7. Kichi Kemin	2503		23. Jel Aryk	290	
	8. Belyi Piket	863		24. Kshkenen	836	
	9. Dorozhnoe	156		25. Sasyk Bulak	81	
	10. Kyzyl Kiya	51		26. Cholok	71	
	11. Udarnik	203		27. Kalmak Ashuu	535	
	12. Shabdan	1929	2	28. Tar Suu	508	
	13. Kyzyl Bairak	273		29. Novomikhailovka	329	
	14. Tort Kul	407		30. Orlovka		5
	15. Samansur	718		31. Kemin		15
	16. Almaluu	807	1	32. Chym-Korgon		2
				28 villages without pharmacies		26(6)
6. Jayil rayon	1. Tunuk	570		17. Maltabar	466	
	2. Bokso Jol	780		18. Orto Suu	984	
	3. Kayryma	419		19. Sary Bulak	971	
	4. Bekitai	701		20. Monoldor	431	
	5. Aidarbek	606		21. Eriktuu	635	

	6.Ak Bashat	838		22.Altyn	952	
	7.Aral	232		23.Jeken	450	
	8.Jayil	1065		24.Jon Aryk	624	
	9.Stavrapolevka	1154		25.Iyri Suu	638	
	10.Kara Suu	556		26.Fedorovka	1374	
	11.Kozhomkul	932		27.Sosnovka	5483	
	12.Karakol	120		28.Stepnoe	1868	
	13.Kyzyl Oy	831		29.Suusamyр	2414	1
	14.Kaldyk	485		30.Kaisar	262	
	15.Kara Dobo	667		31.1 May	609	
	16.Kyzyl Dyikan	1002		32. Poltavka		2
				33. Novonikolaevka		2
				30 villages without pharmacies		5(3)
7. Alamudin rayon	1. Kayryma	1169		24.Vasilevka	2575	1
	2.Mramornoe	1660		25.Privoinoe	82	
	3.Tatyr	107		26.At Bashi	186	
	4.Archaly	1907		27.Vtoraya Pyatiletka	58	
	5.Bash Kara Suu	767		28.Kara Jygach	4869	1
	6.Vinogradnoe	2170		29.Dachnoe	1249	2
	7.Polevoe	125		30.Mykan	1088	
	8.Grozd	1749		31.Lubyanoe	442	
	9.Birdik	1227		32.Prigorodnoe	5465	2
	10.Lesnoe	93		33.Stepnoe	1659	
	11.Vostok	2997		34.Malinovka	320	
	12.Konstantinovka	1026		35.Gornaya Maevka	785	3
	13.Oktyabrskoe	4232	2	36.Podgornoe	1348	
	14.Ozerno	1922		37.Tashmoinok	362	
	15.Zarechnoe	565		38. Lebedinovka		7
	16.Chon Tash	689		39. Nizhnyaya Ala-Archa		9
	17.Kyzyl Birdik	535		40. Tash-Tobo		6
	18.Prohladnoe	668		41. Kok-Jar		1
	19.Moldavanovka	4718		42. Leninskoe		5
	20.Rassvet	209		43. Arashan		2
	21.Baitik	2197		44. Besh-Kungei		1
	22.Baigeldi	474		45. Alamudun		16
	23.Kashka Suu	1081		46. Koi-Tash		1
			32 villages without pharmacies		58(15)	
8. City council Chui, Tokmok	1. Ak Beshim	2099		20.Plhotnikovo	150	
	2.Jany Jol	1099		21.Chapaev	560	
	3.Oktyabrskoe	653		22.Kosh Korgon	1526	
	4.Don Aryk	2041		23.Progress	1978	
	5.Alga	327		24.Kayryma	804	
	6.Burana	468		25.Madaniyat	619	
	7.Meenetkech	750		26.Onbir Jylga	1078	
	8.Kalinovka	1436		27.Sailyk	941	
	9.Kara Oy	694		28.Jany Chek	386	
	10.Kyzyl Asker	402		29.Aral	986	
	11.Lenin	425		30.Karagul	133	
	12.Lenin Jol	912		31.Kosh Kashat	452	
	13.Taldy Bulak	557		32.Chon Jar	429	
	14.Kara Dobo	1226		33. Sovetskoe		
	15.Vostochnoe	131		34. Chui		14
	16.Jany Turmush	327		35.Shamshy		
	17. Zhelezno Dorozhnoe	91		36. Sadovoe		
	18.Kegeti	1905	1	37. Iskra		1
	19.Arpa Tektir	405		38. Koshoi		1
			34 villages without pharmacies		17(4)	

TABLE 5. VILLAGES OF BATKEN OBLAST WITH INDICATION OF PHARMACY INSTITUTIONS

Rayon	Name of village	Populat ion	N umbe r of phar maci es	Name Of Village	Populat ion	Numb er Of Pharm acies
1. Kadamdjai rayon	1. Fakil	2341		48.Byurgendyu Pmk	398	1
	2. Ak Turpak	390		49.Kojo Korum	69	
	3. Min Chynar	1916		50.Kara Jygach	2369	
	4. Galga	238		51.Austam	194	
	5. Orukzar	1331		52. Kara Kyshtak	767	
	6. Kyzyl Korgon	900		53.Karooch	569	
	7. Otukchu	568	1	54.Kerege Tash	429	
	8. Sary Kamysh	26		55.Maidan	1680	
	9. Tokoi	220		56.Puch	861	
	10. Chogorok	194		57.Arpa Sai	1372	
	11. Chon Kara	198		58.Kara Debe	647	
	12. Adyr	556		59.Kok Talaa	1881	
	13. Shak Shak	699		60.Kalykov	610	
	14. Shybran	580		61.Pytdyrak	626	
	15. Chungur Kyshtak	1872		62.Ohna	7485	
	16. Jany Chek	39		63.Kuldu	2533	
	17. Ormosh	1118		64.Tash Kiya	1514	
	18.Bel	731		65.Chaa Tash	1155	
	19. Jal	835		66.Kakyr	746	
	20. Jany Korgon	931		67.Kachana	1731	
	21. Kichi Haidarkan	693		68.Kaltak	1687	
	22. Molo Vargan	784		69.Sulaimanobod	623	
	23. Sur	1397		70.Razjezd	997	
	24. Syrt	1177		71.Suhana	2558	
	25. Teskei	127		72.Chauvai	704	
	26. Chechme	920		73.Isfairam	1423	
	27. Eshme	557		74.Halmion	4259	6
	28. Kara Debe	1692	3	75.Baichaala	243	
	29.Valakish	986		76.Gulderema	767	
	30.Kojo Kakyr	1147		77.Jany Ayil	542	
	31.Kon Koko	1806		78.Joshuk	989	
	32.Gulistan	980		79.Kok Tal	735	
	33.Kyzyl Charba	1899		80.Kurulush	150	
	34. Tash Korgon	1571		81.Noogardan	2041	
	35. Kyotyormo	520		82.Abdusamat	2056	
	36. Elpeiseki	903		83.Yntymak	896	
	37.Gairat	1126		84.Chekelik	1142	
	38.Oron Terek	307		85.Jany Jer	179	1
	39.Orto Aryk	596		86.Tash Debe	948	
	40.Kara Shoro	121		87.Shaldy Maala	250	
	41.Kesken Tash	1016		88. Alga		2
	42.Sai Oozu	1357		89. Markaz		2
	43.Tamasha	704		90. Orozbekovo		3
	44. Langar	650		91. Pulgon		15
	45.Kyrgyz Kyshtak	3112	1	92. Uch-Korgon		10
	46. Byurgendyu	110		93. Haidarken		7
	47.Kaitpas	1526		81 villages without pharmacies		52(12)
2. Batken rayon	1.Bazar Bashi	1777		23.Samarkandyk	5596	2
	2.Bulak Bashi	542		24.Ak Sai	810	
	3.Chet Bulak	422		25.Ak Tatyr	2090	1
	4.Chek	2712	1	26. Govsuvar	780	
	5.Tunuk Suu	178		27.Jany Bak	937	
	6.Kan	808		28.Kapchygai	555	
	7.Tabylgy	360		29.Kok Tash	1779	
	8.Kayyndy	778		30. Pasky Aryk	2261	
	9.Sary Talaa	170		31.Ravat	1544	

	10.Korgon Tash	65		32.Uch Debe	1663	
	11.Jany Jer	1634		33.Boz Adyr	1891	1
	12.Janyryk	182		34.Apkan	843	
	13.Kyzyl Bel	3081		35.Boksai	560	
	14.Buzhum	6734	1	36.Kara Tokoi	725	
	15.Kara Bulak	2361	1	37.Aigul Tash	173	
	16.Kyzyl Jol	2824	1	38.Chon Talaa	1015	
	17.Tayan	1214		39. Ak Otok	255	
	18.Gaz	1504	1	40. Ak Turpak	925	
	19.Kyshtut	942		41.Zar Tash	500	
	20.Sai	1566		42.Chon Kara	2355	
	21.Sogment	1573		43. Kara-Bak		1
	22.Charbak	356				
				34 villages without pharmacies		10(9)
3. Laylak rayon	1.Ak Suu	2437		22.Baul	1352	
	2.Jenish	1086		23.Ozgorush	767	
	3.Suu Bashi	438		24.Kulundu	7207	6
	4.Margun	2153	1	25.Bulak Bashi	1318	
	5.Churbek	893		26.Internatsionalnoe	3268	1
	6.Andarham	1693		27.Communist	3665	
	7.Darhum	622		28.Lenin	3196	
	8.Dargaz	178		29.Korgon	2284	
	9.Layly	344		30.Kara Suu	1159	
	10.Eski Oochu	1075		31.Laylak	663	3
	11.Centralnoe	1989		32.Choyunchu	831	
	12.Arka	2979	1	33.Andarak	4736	
	13.Dostuk	2556		34.Iskra	1850	
	14.Jashtyk	2956		35.Kok Tash	2780	
	15.Ak Bulak	595		36. Communa	1480	
	16.Chimgen	2700		37.Min Jygach	1562	
	17.Tailan	1368		38.Ai Kol	860	
	18.Golbo	1209		39.Kara Bulak	1877	
	19.Samat	1762		40.Aibike	2124	
	20.Murza Patcha	724		41.Toguz Bulak	1024	
	21.Katran	4442	2	42.Gordoi	270	
			43. Beshkent		1	
			36 villages without pharmacies		15(7)	

TABLE 6. VILLAGES OF JALAL-ABAD OBLAST WITH INDICATION OF PHARMACY INSTITUTIONS

RAYON	Name of village	Population	Number of pharmacies	Name of village	Population	Number of pharmacies
1. Aksy rayon	1.Pazyl Ata	3321		34. Jany Ayil	2019	
	2.Baikashka Terek	472		35.Kara Debe	298	
	3.Deres Sai	509		36.Sogot	477	
	4.Jangaktuu Bulak	310		37.Kerben	13929	
	5.It Agar	292		38.Kuluk Debe	1835	
	6.Korgon	673		39.Ak Debe	3170	
	7.Mukur	956		40.Jetigen	1524	
	8.Tegermen Sai	506		41.Mamai	238	
	9.Tovar Sai	1745		42.Ustukan	129	
	10.Ak Jol	1971		43.Arkit	818	
	11.Jolbostu	632		44.Jylgyn	1127	
	12. Kara Tyt	125		45.Jol Sai	1157	
	13.Kechuu	554		46.Atana	3295	1
	14.Raikomol	1242		47.Munduz	721	
	15.Tegene	769		48.Sary Kashka	1507	
	16.Kyzyl Beyit	191		49.Semet	1159	
	17.Kurp Sai	90		50.Toruk	867	
	18.Razan Sai	190		51.Uluk	1172	
	19.Ak Sai	837		52.Chie	1123	

	20. Korgon Debe	912		53.Top Jangak	887	
	21.Jany Jol	3008	2	54. Juzumjan	1226	
	22. Koi-Tash	1279		55.Kara Suu	962	
	23. Tashtak	299		56.Kezart	555	
	24.Ters	421		57.Kyzyl Kel	899	
	25. Bospiek	1142		58.Sai Bulun	298	
	26.Kyzyl Kapchygai	880		59.Turdyuk	98	
	27.Kara Jygach	2422		60.Chaldybar	530	
	28.Dardak Debe	310		61.Chat	176	
	29.Kara Oy	302		62.Kyzyl Jar	3865	1
	30.Syny	292		63.Kum	2127	
	31.Torkamysh	614		64. Jyl Kol	768	
	32.Charba	1214		65.Naryn	7049	
	33.Kashka Suu	3272	2	66. Avletim		1
				61 villages without pharmacies		7(5)
2. Ala Buka rayon	1. Sapalak	212		22.Ken Kol	427	
	2.Sary Talaa	2927		23.Orto Tokoi	469	
	3.Ak Korgon	5505	5	24.Oryuktu Sai	1432	
	4.Padek	2616		25.Cholok Tama	461	
	5.Bayastan	4066		26.Ayry Tam	3446	3
	6. Ak-Tam	3554	1	27.Ak Bashat	757	
	7.Japa Saldy	1438		28.Alma Bel	195	
	8.Kyzyl Ata	1706		29.Jany Shaar	1839	
	9.Tengi	2148	1	30.Kara Unkyur	494	
	10.Ak Tailak	664		31.Azhek	1585	
	11.Birleshken	688		32.Sovet Sai	956	
	12.Kosh Bolot	671		33.Yzar	1353	1
	13.Sara Kol	136		34.Baimak	1678	
	14.Toloko	273		35.Kashkalak	2521	1
	15. Kok Tash	408		36.Kelte	1137	1
	16.Bulak Bashi	369		37.Kosh Almurut	1559	
	17.Jalgyz Oruk	437		38.Kosh Terek	1493	
	18.Kulpek Sai	257		39. Ala-Buka		21
	19.Orto Suu	413		40. Dostuk		1
	20.Chon Sai	360		41. Madaniyat		1
		21.Oryuktyu	2447			
				31 villages without pharmacies		36(10)
3. Bazar Korgon rayon	1. Jany Akman	2260		28.Dukur	474	
	2.Jarake	1922		29.Saidykum	91	
	3.Kayryma	1765		30. Toichubek Chek	366	
	4.Kolot	1782		31.Turpak Korgon	436	
	5.Kosh Korgon	1991		32.Hadjir Abad	2124	
	6.Tash Bulak	403		33.Chek	699	
	7.Besh Badam	1172		34.Chon Kurulush	461	
	8.Jeti Koshkon	644		35.Auk	2830	
	9.Beshik Jon	3786		36.Kara Jygach	1039	
	10.Bai Munduz	2467		37.Kyzyl Oktyabr	2446	
	11.Karacha	2050		38.Mogol Korgon	867	
	12. Bel Terek	822		39.1 May	3662	
	13.Gumhana	1517		40.Seyit Kyzy	700	
	14.Jai Terek	1960		41.Shydyr	3374	
	15. Jaradar	477		42.Kaba	861	
	16. Kyzyl Unkur	964		43.Sary Jayik	662	
	17.Ak Bulak	910		44.Katar Jangak	339	
	18.Jaz Kechuu	402		45.Ak Tyt	347	
	19.Koso Terek	800		46.Uch Bulak	2760	
	20.Kara Oy	693		47.Ak Terek	329	
	21.Kyzyl Suu	692		48.Kok Alma	1824	
	22.Pravda	2880		49.Kyrgoo	477	
	23. Chkalov	1127		50. Arslanbob		1
	24.Arkalyk	454		51. Bazar-Korgon		30
	25.Jany Abad	1389		52. Sovetskoe		1
	26. Jash Lenin	849		53.Charbak		1
	27. Dosh	257		49 villages without pharmacies		36(4)

4. Nooken rayon	1.Ortonku Aral	2123		26.Kara Bulak	901	
	2.Tomonku Aral	494		27.Sary Siya	1092	
	3.Chertek Tash	774		28.Komintern	2862	
	4.Cheremushki	391		29.Kyzyl Jyldyz	714	
	5.Byurgendyu	1830	4	30.Parakanda	334	
	6.Jany Aryk	3826		31.Rahmanjan	2327	1
	7.Jenish	908		32.Arimjan	1707	
	8.Kichi Byurgendyu	904		33.Bobui	490	
	9.Kokandyk	349		34.Kagazdy	867	
	10.Kurama	546		35.Kyzyl Kygzystan	2424	
	11.Nooshken	2840		36.Chon Bagysh	3359	
	12.Uuru Jar	393		37.Alma	2641	
	13.Kuduk	177		38.Birdik	2191	1
	14.Sary Kamysh	108		39.Jany Aryk	1588	
	15.Shynga Sai	80		40.Jon Aryk	683	
	16.Apyrtan	1404		41.Kok Aidar	530	
	17.Besh Jygach	395		42.Toskool	1280	
	18.Bogot	1198		43.Eski Maasi	1508	
	19.Mombekovo	2976		44.Chek	602	
	20.Boston	1302		45. Kochkor Ata		8
	21.Jazgak	1385		46. Massy		16
	22.Jany Kyshtak	482		47.Sakaldy		2
	23. Kok Tash	16		48. Shamaldy-Sai		13
	24.Kurulush	2522				
	25.Chek	1338				
			41 villages without pharmacies		45(7)	
5. Suzak rayon	1.Taran Bazar	1846		58. Soku Tash	503	
	2.Joon Kyungoi	2184		59.Ak Bash	1988	
	3.Kalmak Kyrchyn	1032		60. Shatrak	397	
	4.Kanjyga	491		61.Boston	1879	
	5.Kara Cholok	1718		62.Alchaluu	265	
	6.Sary Bulak	254		63.Jany Achy	706	
	7.Saty	1075		64.Jashasyn	223	
	8.Bagysh	2314		65.Kashka Suu	86	
	9. Besh Bala	1011		66.Kyzyl Alma	205	
	10.Kedey Aryk	944		67. Talaa Bulak	1042	
	11.Kyzyl Tuu	935		68.Leninskoe	2337	1
	12.Sary Bulak	895		69.Orto Sai	1544	
	13. Safarovka	2120		70.Jygach Korgon	2318	
	14.Kypchak	1867		71.Balta Kyzy	876	
	15.Achy	305		72.Jany Jer	1886	
	16.Boz Chychkan	1078		73.Kara Jygach	647	
	17.Besh Moinok	1052		74.Kashkar Maala	351	
	18. Jany Ayil	815		75.Kyzyl Bagysh	767	
	19.Jar Kyshtak	822		76.Kyrgyz Abad	499	
	20.Doboi	1064		77.Munduz	1270	
	21. Kandy	405		78.Naiman	411	
	22. Min Orok	720		79.Turk Abad	1084	
	23.Markai	340		80.Uzbek Abad	361	
	24.Sai	388		81.Chek	712	
	25.Teoles	721		82.Shirin	556	
	26.Tashtak	837		83.Blagoveshenka	3554	1
	27. Turk Maala	567		84.Jany Dyikan	2038	
	28.Ulgyu	1359		85.Kamysh Bashi	892	
	29.Osmonov	623		86.Kyr Jol	387	
	30.Choko Dobo	3084		87.Sadda	623	
	31.Chokmor	1409		88.Tash Bulak	4953	
	32.Kara Alma	918		89.Aral	168	
	33.Ortok	849		90.Gulstan	1211	
	34.Urumbash	926		91.Dmitrovka	2897	
	35.Tosh	4507		92.Doskana	784	
	36.Changyr Tash	2218		93.Eshme	155	
	37.Jalgyz Jangak	3561		94.Irrigatorov	571	
	38.Mazar Bulak	544		95.Teplichnoe	517	
	39.Uch Malai	961		96.Yntymak	2032	

	40.Ak-Took	1723		97.Jar Kyshtak	3871	
	41.Ak-Bulak	149		98.Aral Sai	1593	
	42.Kara-Mart	2608		99.Kumush Aziz	5148	
	43.Jany-Aryk	257		100.Domor	1690	
	44.Jylan-Temir	318		101.Kainar	87	
	45.Kadu	1129		102.Kurgak Kol	2868	
	46.Kara-Bulak	1026		103.Ladan Kara	4150	1
	47.Katranky	673		104.Masadan	1578	
	48.Kashka Terek	852		105.Sasyk Bulak	73	
	49.Kyz Kol	586		106.Totiya	2039	
	50. Sary Bulak	648		107.Chymchyk Jar	954	
	51.Munduz	2088		108.Yrys	1183	2
	52.Ak Terek	372		109. Bekabad		2
	52.Akchaluu	397		110. Jiyde		1
	53. Almaluu Bulak	839		111. Oktyabrskoe		3
	54.Kara Ingen	181		112. Suzak		25
	55.Kara Kol	608				
	56.Kyzyl Senir	2441				
	57.Orto Azia	2284				
				104 villages without pharmacies		36(8)
6.Toguz Toro rayon	1.Atai	1221	1	9.Kosh Bulak	376	
	2.Birdik	1074	1	10. Lenin	1927	
	3.Karl Marx	578		11. Ornok	105	
	4.Makmal	194		12. Aral		1
	5.Chet Bulak	992	1	13. Dedemel		1
	6.Abdymanap	1441		14. Kazarman		7
	7.Tabylgyty	687	1	15. Kara-Suu		1
	8.Isak	814				
				7 villages without pharmacies		14(8)
7. Toktogul rayon	1.Sary Sogot	1830	1	23.Nichke Sai	1702	1
	2.Bel Aldy	941		24.Chorgochu	1266	1
	3.Korgon	494		25.Birlik	601	1
	4.Kara Suu	1205	1	26.Kotorme	780	1
	5.Kara Tektir	2681		27.Torkent	4401	1
	6.Bala Chychkan	2459		28.Kara Jygach	2345	1
	7.Jazy Kechuu	1472		29.Toluk	1227	1
	8.Terek Suu	4168	1	30.Almaluu	608	
	9.Beke Chal	56		31.Noot	560	
	10.Chon Aryk	2810	1	32.Chaar Tash	524	
	11.Eshsai	240		33.Jetigen	2370	1
	12.Kyzyl Ozgorush	2471		34.Kyzyl Uraan	2343	1
	13. An Aryk	538		35.Sargata	1829	1
	14.Bel Kara Suu	250		36.Cholpon-Ata	1310	1
	15.Buurakan	409		37.Ak Tenir	1817	1
	16.Kamysh Bashi	1513		38.Balykty	59	
	17.Konur Ogyuz	262		39.Kara Kungei	1189	1
	18.Kosh Tash	1265		40.Kushchu Suu	162	
	19.Orto Jon	1220	1	41.Mazar Suu	1400	1
	20.Cech Dobo	306		42. Jany Jol		1
	21.Shayik	425		43. Toktogul		19
	22.Ak Jar	617		44. Uch-Terek		2
				22 villages without pharmacies		41(22)
8. Chaktal rayon	1. Kyzyl Tokoi	940		7. Kurulush	1122	
	2. Bashky Terek	557		8. Jany Bazar		1
	3. Aygir Jaak	2313	1	9. Kanysh-Kiya		3
	4. Korgon Sai	598		10. Sumsar		1
	5. Chakmak Suu	288		11. Terek-Sai		1
	6. Ak Tash	868		12. Shekaftar		1
				6 villages without pharmacies		8(6)

TABLE 7. VILLAGES OF OSH OBLAST WITH INDICATION OF PHARMACY INSTITUTIONS

Rayon	Name of village	Population	Number of pharmacies	Name of village	Population	Number of pharmacies
1. Alai rayon	1.Kok Suu			31.Arpa Tektir	1707	1
	2.Nura	572		32.Jar Kyshtak	535	
	3.Copu Korgon	2206		33.Kablan Kol	2389	1
	4.Askaly	258		34.Kara Shoro	1208	
	5.Jergetal	467		35.Kyzyl Oy	196	
	6.Kolduk	670		36.Toguz Bulak	1720	1
	7.Targalak	489		37.Ken Jylga	2213	
	8.Terek	1050		38.Pervoe Maya	1480	
	9.Chi Talaa	1331	1	39.Kyzyl Korgon	2344	
	10.Kainama	419		40.Kun Elek	1057	1
	11.Kum Shoro	723		41.Murdash	2292	1
	12.Oktyabr	858		42.Tooshkan	263	
	13.Oro Dobo	179		43.Taldy Suu	1411	1
	14.Tamga Terek	680		44.Archa Bulak	262	
	15.Koshulush	96		45.Kok Bulak	64	
	16.Kol Chaty	224		46.Kurgak	42	
	17.Kichi Bulyolu	816	1	47.Tuura Bulak	39	
	18.Chon Bulyolu	635		48.Ak Jai	970	
	19.Jyluu Suu	549		49.Ak Bosogo	1132	1
	20.Kara Bulak	537		50.Gejige	161	1
	21.Kurmanjan Datka	1048		51.Kichi Karakol	1139	
	22.Chakmak	326		52.Kyzyl Alai	798	
	23.Jany Turmush	1017	2	53.Chon Karakol	1023	
	24.Ayu Tapan	1327		54. Gulche		12
	25.Lenin Jol	950		55. Kara-Suu		1
	26.Miyazdy	536		56. Sary-Mogol		1
	27.Osoaviahim	1132		57. Sary-Tash		2
	28.Jany Alai	1593				
	29.Jany Aryk	1056				
	30.Boz Karagan	1124				
				42 villages without pharmacies		28(15)
2. Aravan rayon	1.Achi	1546		23.Naiman	2372	
	2.Kara Bulak	84		24.Sary Tash	1542	
	3.Karrak	615		25.Syrt	1010	
	4.Oktyabr	1990		26.Hauz	1537	
	5.Sasyk Unkyur	1107		27.Tepe Korgon	5869	8
	6.Suhtor	294		28.Arap	1792	
	7.Erke Kashka	161		29.Internatsional	871	
	8.Yangi Aravan	2056		30.Kayragach Aryk	1707	1
	9.Gulbaar	6458		31.Kakyr Piltan	1320	
	10.Kichik Alai	434		32.Kesov	2111	
	11.Kundolyuk	101		33.Langar	3095	
	12.Maidan Talaa	36		34.Uigur Abad	1649	
	13.Min Teke	39		35.Chertik	1031	
	14.Sary Bulak	15		36.Yangi Abad	1197	
	15. Chogom	504		37.Yangi Yul	1912	
	16.Mangyt	1784	1	38. Kochubaevo	4211	2
	17.Kesek	789		39.Jakshylyk	1702	
	18.Kyzyl Korgon	830		40. Jar Kyshlak	634	
	19.Teleikon	2300		41.Kukalapash	690	
	20.Yangi Aryk	1604		42.Maksim Tobu	510	
	21.Jeke Meste	2252		43.Pahtachi	2210	
	22.Kerkidan	1324		44. Agronom	639	
			45. Aravan		37	
				40 villages without pharmacies		49(5)
3. Kara Kulджа rayon	1.Kok Art	2526	1	22.Jany Talap	1789	
	2.Kan Korgon	2578	1	23. Jiyde	814	1
	3.Sary Bee	982	1	24.Oktyabr	2137	

	4.Kara Tash	713		25.Chachyrkanak	1219	
	5.Terek Suu	692		26.Kayn Talaa	1159	
	6.Jany Talaa	1164		27.Koo Chaty	1844	1
	7.Altyn Kurek	297	1	28.Kyzyl Jar	614	1
	8.Jetim Debe	1452		29.Terek	1166	
	9.Kalmatai	1100		30.Oy Tal	1572	1
	10.Kara Jygach	1305		31.Konduk	960	1
	11.Kenesh	1941		32.Sarytash	593	1
	12.Nasirdin	426		33.Kara Bulak	568	
	13.Por	1322		34.Kyzyl Bulak	472	
	14.Ak Kiya	2743		35.Sary Kungei	1045	
	15.Kara Kochkor	3322	2	36.Tegerek Saz	652	
	16.Sary Bulak	1614	2	37.Toguz Bulak	1022	
	17.Kara Kuldja	10770	8	38.Tokbai Talaa	644	
	18.Biy Myrza	3778	1	39. Tokbai Talaa	4267	
	19.Pervoe Maya	5921	1	40.Buyga	1028	1
	20.Sary Kamysh	906		41.Ylai Talaa	6394	1
	21.Togotoi	2091		42.Sai	2110	1
				24 villages without pharmacies		27(18)
4. Kara Sui rayon	1.Jylgeldi	3135		60.Jyidalik	3535	
	2.Ak Tash	3177		61. Jim	1621	
	3.Barak	528		62.Zarbdar	3263	
	4.Jany Aryk	5194		63.Karatai	2186	
	5.Ak Terek	631		64.Kurankol	164	
	6.Dostuk	562		65.Kyzyl Mehiat	2091	
	7.Pravda	3666		66.Langar	1430	
	8.Tash Aryk	1720		67.Osmon	899	
	9.Uchkun	270		68.Tadjik Abad	1686	
	10.Agartuu	1764		69.Ak Kolot	504	
	11. Ak Jar	1250	1	70.Kara Debe	3506	
	12.Birlik	928		71.Kurban Kara	1600	
	13.Gairat	1837		72.Kyzyl Abad	1298	
	14.Zarbalik	1408		73.Kyzyl Suu	2295	
	15.Communist	829		74.Kysh Abad	1726	
	16.Kyzyl Koshchu	2204		75.Otuz Adyr	5393	1
	17.Kyzyl Sarai	1130		76.Savai Aryk	896	
	18.Madaniyat	2131		77.Sary Kolot	2353	
	19.Mamajan	2385		78.Tynchtyk	609	
	20.Pitomnik	1225		79.Yntymak	577	
	21.Bash Bulak	5453		80.Papan	3335	2
	22.Achy	547		81.Ak Terek	683	
	23.Jany Turmush	490		82.Alchaly	1226	
	24.Kara Saat	1472		83.Ata Merek	271	
	25.Kyzyl Ordo	1418		84.Boru	1745	
	26.Sadyrbai	786		85.Karagur	1357	
	27.Taldyk	1418		86.Kodjo Kelen	1322	
	28.Eshme	749		87.Kyzyl Tuu	1660	
	29.Jar Ooz	1754		88.Toguz Bulak	396	
	30.Alga Bas	1075		90.Kyzyl Shark	4389	
	31.Andijan Mahal	376		91.Ken Sai	4607	
	32.Bek Jar	1242		92.Kurban Kara	1805	
	33.Kendjekul	2021		93. Kydyrsha	2216	
	34.Monok	3434		94.Oktyabr	1988	
	35.Tadjik Mahala	467		95.Savai Aryk	3003	2
	36.Andizhanskoe	3593		96.Yntymak	2024	
	37.Bel Kyshtak	1324		97.Kirov	7635	
	38.Jany Kyshtak	4226		98.Telman	3533	
	39.Karl Marx	1828		99.Konurat	1276	
	40.Communist	1493		100.Miyaly	422	
	41. Kyzyl Bairak	1008		101.Prisavai	88	
	42.Chaigi	1387		102.Erkin	2482	
	43.Ali Ordo	993		103.Dyikan Kyshtak	7403	1
	44.Korgon	401		104.Birleshken	2444	
	45.Talaa	1082		105.Ozgur	1366	
	46.Horok	565		106.Tolokon	2684	
	47.Kyrgyz Chek	4189		107.Uchar	2912	

	48.Asan Chek	3875		108.Shark	8230	6
	49.Kaarman	2564		109.Imam Ata	3539	
	50. Laglan	986		110.Madaniyat	3122	
	51. Socialism	2425	1	111.Padavan	6227	
	52.Teeke	554	1	112.Tashlak	10454	
	53.Uchkun	1422		113. Top Terek	396	
	54.Chagyr	1197		114. Bolshevik		1
	55.Nurdar	2797		115. Kashkar-Kyshtak		5
	56.Alim Tepe	1589		116. Kyzyl-Kyshtak		1
	57.Bash Moinok	727		117. Mady		2
	58.VLKSM	3114		118. Nariman		6
	59.Jany Mahala	2367		105 villages without pharmacies		30(13)
5. Nookat rayon	1. Bel	4079	2	35.Tash Bulak	1099	
	2.Borbash	5084		36.Alashan	2073	
	3.Frunze	11597		37.Borbash	3030	
	4.Gyulstan	3824	2	38.Jyide	3279	1
	5.Jany Nookat	17882	2	39.Karanai	1407	
	6.Kyzyl Teyit	1765	1	40.Sarykandy	2489	
	7.Temir Koruk	712	1	41.Ak Bulak	4524	
	8.Communist	3296	2	42.Borko	2989	1
	9.Aibek	1561		43.Kara Oy	328	
	10.Ak Chabuu	472		44.Kara Tash	40	1
	11.Jatan	1642		45.Kyrgyz Ata	4403	1
	12.Internatsional	2102	1	46.Tash Bulak	16	
	13.Karake	1051		47.On Eki Bel	3036	
	14.Osor	1903	1	48.Narai	1821	1
	15.Tashtak	694		49.Merkit	2587	1
	16.Uchbai	1743		50.Ai Tamga	1905	
	17.Chuchuk	1498		51.Gerey Shoron	2311	1
	18.Jar Korgon	2566	1	52.Jayishma	1510	1
	19.Kok Bel	4681	1	53.Dodon	1187	1
	20.Kungei Kojoke	3424		54.Kenesh	2615	1
	21.Teskei Kojoke	3240		55.Murkut	2855	1
	22.Chech Debe	1320		56.Tolman	1179	
	23.Kara Tash	6640		57.Chapaev	12755	
	24.Noigut	3040		58.Aral	1538	1
	25.Kuu Mайдan	3697		59.Baryn	3367	
	26.Ak Terek	137		60.Budailyk	76	
	27.Arbyn	3142	1	61.Kapchygai	203	
	28.Chegeden	272		62.Kara Koktu	632	
	29.Shankol	3468	1	63. Arykboyu		1
	30.Kyzyl Bulak	2528		64. Jany-Bazar		2
	31.Akchal	2127		65. Kok Jar		3
	32.Baglan	481		66.Ket erme		1
	33.Kodjo Aryk	6642		67. Kodjoke		1
	34.Kosh Dobo	843		68. Yntymak		1
			69. Naiman		1	
			38 villages without pharmacies		38(31)	
6. Uzgen rayon	1. Ak Jar	1582	1	51.Iyrek	277	
	2.Kakyr	1220		52.Korgon	302	
	3.Semiz Kel	695		53.Unkyur	378	
	4.Kenesh	1079		54.Yntymak	344	
	5.Aigyr Jol	1901		55.Elchibek	519	
	6.Kosh Korgon	514		56.Karool	3034	1
	7.Kyzyl Kyrman	1510		57.Myrzy Aryk	4246	
	8.Bakmal	1027		58.Orto Aryk	425	
	9.Babashuulu	336		59.Sheraly	3880	
	10.Bokso Jol	371		60.Shamal Terek	1591	
	11.Don Bulak	1238		61.Chalk Oy	2201	
	12.Jany Abad	957		62.Staraya Pokrovka	1552	
	13.Kara Darya	377		63.Alga	1297	
	14.Michurino	211		64.Besh Abyshka	220	
	15.Ozgorush	2377		65.Guzar	648	
	16.Teolo	567		66.Kochkor Ata	631	
	17.Chymbai	2386		67.Kreml	531	

	18.Kurbu Tash	1295		68.Kyzyl Oktyabr	2178	
	19.Ak Terek	563		69.Kyzyl Sengir	3486	
	20.Karl Marx	897		70.Kyzyl Too	2924	1
	21.Kirov	649		71.Ak Kiya	1082	
	22.Kysyk-Alma	551		72.Donuz Too	257	
	23.Tuz Bel	1450		73.Karchabek	424	
	24.Uch Kapchal	1252		74.Erkin Too	1855	
	25.Jylandy	2526		75.Shagym	1870	
	26.Kalta	759		76.Erdik	328	
	27.Krasnyi Mayak	2718		77. Adyr	1591	
	28.Makarenko	451		78.Altyn Bulak	791	
	29.Progress	393		79.Babyr	912	
	30.Yassy	457		80.Kandava	1103	
	31.Kairat	1251		81.Kara Batkak	173	
	32.Ayuu	861		82.Sasyk Bulak	269	
	33.Jany Ayil	743		83.Chechebai	355	
	34.Zarger	1057	1	84.Salam Alik	1417	1
	35.Kugurgan	1615		85. 15 Jash	558	
	36.Nichke Sai	1861		86.Ak Terek	705	
	37.Toktogul	1134		87.Ara Kel	925	
	38.Jyde	2005		88.Kosh Eter	1082	
	39. Ak Terek	637		89.Kyzyl Bairak	548	
	40.Jangakty	963		90.Kyzyl Charba	920	
	41.Kara Kolot	638		91.Shoro Bashat	4678	1
	42.Kors Etti	1248		92.Makarenko	1897	
	43.Kyrgyzstan	2184		93.Ana Kyzyl	1709	
	44.Orkazgan	289		94.Boston	1095	
	45.Ostyuruu	1323		95.Kyimyl	300	
	46.Langet	1306		100. Ilyichevka		2
	47.Kara Dyikan	5125		101. Kara-Bolot		1
	48.Jazy	1160		102. Kurshab		11
	49.Jeerenchi	2573		103. Myrzaki		3
	50.Kyzyl Dyikan	2699				
				94 villages without pharmacies		23(9)
7. Chon Alai rayon	1.Karamyk	2262	1	9.Kashka Suu	2171	1
	2.Jekendi	1901		10.Jar Bashi	1573	
	3.Kara Teyit	1016		11.Jash Tilek	1023	
	4.Shibee	665		12.Kulchu	176	
	5.Jayilmaa	630		13.Kyzyl Tuu	295	
	6.Achyk Suu	1625		14.Kyzyl Eshme	1070	
	7.Kabyk	725		15.Sary Bulak	185	
	8.Kara Kabak	698		16.Chak	1479	
				17. Daraot Korgon		3
				14 villages without pharmacies		5(3)