Strategic management of public health

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Abstract Public health is a priority area of socio-economic development of the country. The aim of the study is to develop a model of strategic management of public health to provide accessible, quality and effective services for the protection and strengthening of health, the prevention of diseases and the extension of life expectancy of citizens of the Kyrgyz Republic. The results of the study confirm that healthcare system is still underfunded, resulting in inefficient operation, outdated infrastructure, and a shortage of staff. As a result, the current healthcare system cannot cope with modern challenges. The growth of the country's population, the trend of population aging, the increased impact of risk factors, high mortality and incidence of non-communicable diseases. In view of the above, the Concept «Strategic Management of Public Health» has been developed, based on the recommendation of WHO, which contain an integrated approach at the national level to address the priority tasks in the field of public health.

Keywords: strategic management, public health, healthcare system, prevention, health promotion, COVID-19, noncommunicable diseases.

Introduction

The state of public health depends on a number of socio-economic factors and the State’s health policy, as well as on the commitment of citizens to improving individual and public health [7].

For any State, regardless of its level of economic development, the health of a nation should not be an end but a means to achieve the well-being of society and to satisfy the physical, mental, cultural and spiritual needs of every member of society. Public health consists of the health of each citizen of a given society. At the same time, the health of the individual is determined by many factors that are often beyond the control of the health system [10]. It has not been possible to change the perception that health care is almost synonymous with medicine and that the only person responsible for health is a doctor. A conceptually new approach is needed when the health of society in the broad sense (as a state of physical, spiritual and social well-being) is the only objective criterion for social development [2]. Such principles have led to the need for an effective public health system that addresses the needs of each individual and society as a whole.

The health and well-being of people should be a goal of the entire system of government and society. The new public health policy should therefore involve partners from other sectors, including heads of Government, parliamentarians, business leaders, mayors and citizens. Such a strategy could be strengthened by the establishment of a new public health system [3].

At the same time, the COVID-19 pandemic has made its adjustments in international public health policy by expanding and developing preventive public health areas [8]. In view of the above, the study of the current state of the public health system of the Kyrgyz Republic for the
development of strategically important recommendations for its improvement in accordance with modern requirements is highly relevant.

The aim of the study is to develop a model of strategic management of public health to provide accessible, quality and effective services for the protection and strengthening of health, the prevention of diseases and the extension of life expectancy of citizens of the Kyrgyz Republic.

**Methodology**

The methodology of this research is the study of statistical information (official data, etc.), statistical analysis and content analysis of official data. The methods used were: epidemiological research methods; statistical research methods.

**Results**

The average annual resident population in the Kyrgyz Republic was 6.69 million, according to the statistical data of January 1, 2021. In the age structure of the population, 34.6% were children and adolescents (0-17 years old), 57.1% - were people of working age, 8.3% - were people older than working age.

Life expectancy for men was 67.8 years and for women 76.0 years, averaging 71.7 years. While the world average was 74.9 years, the Kyrgyz Republic was 3.2 years below the world average.

According to the Demographic Projection, by the end of 2050 the population of Kyrgyzstan will be in a state of demographic aging, which means that the population older than the reproductive age is becoming more numerous than the population younger than the reproductive age. This, in turn, will put a significant strain on the public health system[1].

In 2020, more than 1 million patients were registered in healthcare organizations of the republic, of which 36% were children. When determining the rank of the prevalence of diseases for the period 2017-2021, as can be seen in the table, the first place was occupied by diseases of the respiratory system (6297.8 per 100,000 population), the second place was taken by diseases of the circulatory system (5653.1 per 100,000 population), the third place - diseases of the digestive system (4133.6 per 100,000 population), the fourth place - pathologies during pregnancy, childbirth and the postpartum period (3620.9 per 100,000 population), the fifth place - diseases of the urogenital system and endocrine system (3269.9 and 2502.5 per 100,000 of us. respectively). Over a five-year period, the overall prevalence rate, as well as the rates for all classes of diseases, have shown a downward trend between 2020 and 2021, except for some infectious and parasitic diseases, which have shown an upward trend.

**Table 1** Ranking by main classes of diseases, Kyrgyz Republic, 2017-2021 (per 100,000 population)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Disease classes</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Respiratory diseases</td>
<td>6536,5</td>
<td>6637,1</td>
<td>5723,5</td>
<td>5232,5</td>
<td>6297,8</td>
</tr>
<tr>
<td>2</td>
<td>Cardiovascular diseases</td>
<td>7879,5</td>
<td>7870,9</td>
<td>7652,2</td>
<td>5716,5</td>
<td>5653,1</td>
</tr>
<tr>
<td>3</td>
<td>Digestive diseases</td>
<td>4442,5</td>
<td>4185,2</td>
<td>4550,2</td>
<td>3198,1</td>
<td>4133,6</td>
</tr>
<tr>
<td>4</td>
<td>Pathology during pregnancy, childbirth and postpartum period</td>
<td>5725,9</td>
<td>3065,6</td>
<td>4666,8</td>
<td>2854,5</td>
<td>3620,9</td>
</tr>
<tr>
<td>5</td>
<td>Diseases of the urogenital system</td>
<td>5327,3</td>
<td>5096,0</td>
<td>4301,8</td>
<td>2821,8</td>
<td>3269,9</td>
</tr>
<tr>
<td>6</td>
<td>Endocrine Diseases</td>
<td>2607,3</td>
<td>2581,0</td>
<td>2585,4</td>
<td>2371,4</td>
<td>2502,5</td>
</tr>
<tr>
<td>7</td>
<td>Diseases of the eyes and their appendages</td>
<td>2782,4</td>
<td>2847,3</td>
<td>2829,6</td>
<td>1782,1</td>
<td>2235,2</td>
</tr>
<tr>
<td>8</td>
<td>Musculoskeletal diseases</td>
<td>3102,8</td>
<td>3106,8</td>
<td>2877,5</td>
<td>1840,6</td>
<td>2176,0</td>
</tr>
<tr>
<td>9</td>
<td>Infectious and Parasitic Diseases</td>
<td>1217,6</td>
<td>1120,5</td>
<td>1017,9</td>
<td>1365,0</td>
<td>1646,2</td>
</tr>
<tr>
<td>10</td>
<td>Nervous System Diseases</td>
<td>2111,6</td>
<td>2071,3</td>
<td>1923,7</td>
<td>1338,5</td>
<td>1542,7</td>
</tr>
<tr>
<td>11</td>
<td>Injuries and poisonings</td>
<td>1915,8</td>
<td>1910,9</td>
<td>1751,9</td>
<td>1226,1</td>
<td>1358,5</td>
</tr>
</tbody>
</table>
The likely reason for the decline in prevalence rates between 2020 and 2021 was the country emergency (restrictive and quarantine measures) associated with the COVID-19 pandemic, which led to the collapse of the health system and the cancellation (postponement) Medical services: prevention, diagnosis, treatment, recording and registration of diseases, etc.

New evidence suggests that each withdrawal (postponement) may have led to poor health, long-term recovery and reduced chances of survival. The total mortality rate of the population in 2020, compared to the previous year (5.2 in 2019), increased to 6.1 deaths per 1,000 population.

Non-communicable diseases accounted for 80.4 per cent of all causes of death. The study of the rank of the main causes of death, as shown in Figure 1, the first place was occupied by cardiovascular diseases (52.3%), the second place - neoplasms (10.5%), the third place - respiratory diseases (6.8%), the fourth place - injuries and poisonings (5.6%), fifth place - diseases of the digestive system (5.2%). The share of COVID-19 in the overall structure of causes of death was 6.1%.

![Figure 1](https://doi.org/10.1051/bioconf/202412001013)

**Figure 1** Ranking of causes of death (Kyrgyz Republic, 2020)

*Official data of the eHealth Center under the Ministry of Health of the Kyrgyz Republic (%)*

It should be noted that the prevalence and mortality rates of non-communicable diseases far exceed those of communicable and parasitic diseases. However, both non-communicable and communicable diseases are expected to increase in the near future, according to the projections of leading international experts.
In this regard, the health system must work to close the gaps as quickly as possible to sustain any health gains made before the pandemic and to avoid excess morbidity and mortality.

Discussion
Despite the downward trend in the level of non-communicable diseases in 2020-2021, in the future we should expect a sharp increase in diseases of the circulatory system, respiratory organs, neoplasms, diseases of the digestive system, pathologies during pregnancy, childbirth and the postpartum period, diseases of the genitourinary system and endocrine system. Accordingly, mortality from the above diseases may increase.

In studying risk factors for the development of diseases in Kyrgyzstan, it has been found that tobacco and alcohol used in Kyrgyzstan is quite high: 48.2 per cent of men aged 25-64 used tobacco daily; 44.8 per cent of men consume alcohol at least once in the past 30 days, 22.8% of men took more than 6 doses of alcohol at one time. Women consumed less tobacco (2.7%) and alcohol (17.7%). 76.2 per cent of the people surveyed do not engaged in physical activity or sports at all. Seventy-four per cent of respondents said they consumed less vegetables and fruits than the recommended norms. In the food of residents, there was a high salt content, exceeding the permissible norms by 2-3 times, which was one of the highest in the world - the fourth place in the ranking of 187 countries [6].

Currently, in the Kyrgyz Republic, health organizations involved in the prevention and promotion of public health do not meet modern challenges and requirements: they do not interact with each other, have outdated infrastructure, do not have modern technologies, there is a shortage of qualified personnel. At the same time, government funding of the public health service is carried out on a residual basis and does not allow the introduction of modern research methods and technologies [6, 9].

An analysis of government funding for the health care system in the Kyrgyz Republic shows, as shown in Figure 2, that government spending on health care has been declining over the years. If in 2012 the amount allocated to health care was 3.4% of GDP, then in 2021 it fell to 2.5% [5].

![Figure 2](image-url)  
*Figure 2* Government spending on the healthcare system. (Kyrgyz Republic, 2012-2021)  
*Official data of the National Statistical Committee (in % of GDP)*

Due to the deficit of the state budget, besides public expenditures, private sector expenditures (2-3%) and external financial revenues (0.5-1%) are involved. The total consolidated health budget ranges from 5.0 to 6.5 per cent of GDP.

A comparison of the share of public health expenditure in Kyrgyzstan’s GDP with that of other countries shows that the indicators in Kyrgyzstan are very low. For example, in the last two decades, the share of health spending in GDP in countries such as the US, Japan, Spain, and
France has almost doubled. In the US, spending as a percentage of GDP reached 17.6% and in Germany 11.6% [10].

**Conclusion**

Thus, the country’s population growth, population ageing trend, increasing exposure to risk factors, high mortality and non-communicable disease morbidity, predetermine the need for the Cabinet of Ministers of the Kyrgyz Republic to adopt urgent preventive measures that are economically advantageous for the country, contributing to the preservation and strengthening of public health. It is widely recognized that prevention requires significantly less than the treatment of diseases.

The Kyrgyz Public Health Service is still underfunded, resulting in inefficient operations, outdated infrastructure and low human resource capacity. As a result, the current health-care system fails to cope with today’s challenges.

In view of the above, the Concept «Strategic Management in Public Health» has been developed, based on the recommendation of WHO [4,8], which contain an integrated approach at the national level to address the priority tasks in the field of public health.

Concept «Strategic management of public health in the Kyrgyz Republic»:
1. Providing strategic guidance for health and well-being
2. Implementation of e-health and research
3. Planning and implementation of practical measures:
4. Establishment of a modern public health service

The implementation of the Concept “Strategic Management in Public Health” will be carried out within the framework of the implementation of strategic government programs and will contribute to the introduction of modern cost-effective methods for organizing the healthcare system, as well as the effective distribution of healthcare resources. This, in turn, will contribute to the prevention of diseases, protection and promotion of health, prolongation of life of citizens, thereby improving medical and demographic indicators and socio-economic indicators and ensuring the national security of the country.

**References**