

DEVELOPMENT STRATEGY

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Development of health economics for improving the quality of life

The article deals with the developmental problems of public health in Russia as a key factor of improving the quality of life and providing the high efficiency of domestic economy. It shows the dynamics of main health indicators in the last two decades. Economic and organizational, social and cultural reasons for Russia's lagging behind the developed countries in terms of public health are characterized in the article. It focuses on the essential territorial differentiation of public health standards in the country and represents the specific indicators of these differences for federal districts, which allow us to see the complexity and volume of health problems. The main ways and directions of progressive public health development in Russia are indicated in the article.

Russia, public health dynamics, territorial differences, directions of health development, quality of life.



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Health has always been the main value of people; it is a basis for harmonious individual development and the greatest boon. The famous ancient physician Hippocrates said, "Health is the greatest of human blessings". According to the philosopher Arthur Schopenhauer, nine-tenths of our happiness depends upon health.

The better the public health, the higher the rate of social and economic development. Poor health leads to lower production volumes; when morbidity is mass, production is disorganized. The state bears losses due to paying sickness benefits, disablement pensions and survivor's

pensions, expenses for disabled persons homes and disabled children boarding schools. It should be noted that the amount of the gross domestic product reduces because of temporary or permanent disability as a result of disease, disablement or death.

This can be illustrated by the following figures. According to the Institute of Social and Economic Development of Territories of RAS, the state loses about 0.3% of GDP because of temporary disability and 17% of GDP because of untimely deaths. That is, losses are significant and the problem of public health preservation is very urgent (*tab. 1*).

Table 1. Decline in GDP due to the poor health of Russia's population involved in the production process

Indicator	2008		2009	
	bln. rub.	% to GDP	mln. rub.	% to GDP
Annual decline in GDP due to the diseases of population (insurance payments)	118	0.28	124.5	0.32
Annual decline in GDP due to disabled persons' noninvolvement in the production process	10.5	0.03	14	0.04
Annual decline in GDP due to untimely deaths of able-bodied population	360	0.9	320	0.8
Annual decline in GDP due to the lost years of potential life	7 500	18	6 670	17

Today, not only doctors and sociologists, but economists deal with the health problems. Both the value and importance of health is greater than such familiar types of resources as wood, coal, gas and oil. It is no mere chance, economic services have been established in many medical institutions and the position of Deputy Director on Economy has been introduced. All these facts allow us to consider the health not only in terms of medicine or sociology, but also in terms of economics and speak about a new field in science – health economics.

Health economics deals with the public and individual health as a component of economic growth and therefore the sustainable development of the state, which can and should be managed.

Nowadays, the state invests significant resources in the health sector. Thus, according to the Ministry of Finance of RF, almost 930 billion rubles have been allocated over the period from 2006 to 2012 to implement the national project “Health”. Modern cardiovascular and cancer medical centres have been established; perinatal and high-tech medical centres are being built (*fig. 1*). However, state budget expenditures on health account for only 4.8% of GDP. It is one of the lowest index among the developed countries of Europe.

Health is one of the most important factors determining the quality of life. And the increase in the life quality of population is one of the most important national challenges. The United Nations Development Programme

(UNDP), which appeared in 1990, points out that the main purposes and sense of economic and social progress include providing everyone with the opportunity to realize his/her potential and have a healthy, creative and active style of life. There is a method of calculating the **human development index (HDI)** in the Programme, which is a synonym for the concept of “life quality”.

Nowadays, HDI calculation method is the most versatile tool to evaluate and compare the life quality of the population in different countries and regions.

According to it, three main possibilities, representing three components of HDI, are recognized as fundamental constants:

- life expectancy index;
- education index;
- real GDP per capita.

Reports within the United Nations Development Programme (UNDP) have been published since 1990; our country ranked 29 among 130 countries according to the Human Development Index at that time. Today, we rank 71 among 182 countries by this index.

It should be emphasized that UN experts consider **life expectancy**, which is primarily dependent on the **health**, as the most important component of HDI.

Today, Russia takes the 122th place among 182 countries (*fig. 2*). But despite some growth, our country is still far behind the leading countries according to this indicator – by more than 10 – 12 years.

Figure 1. Cost of the national project "Health", bln. rub.

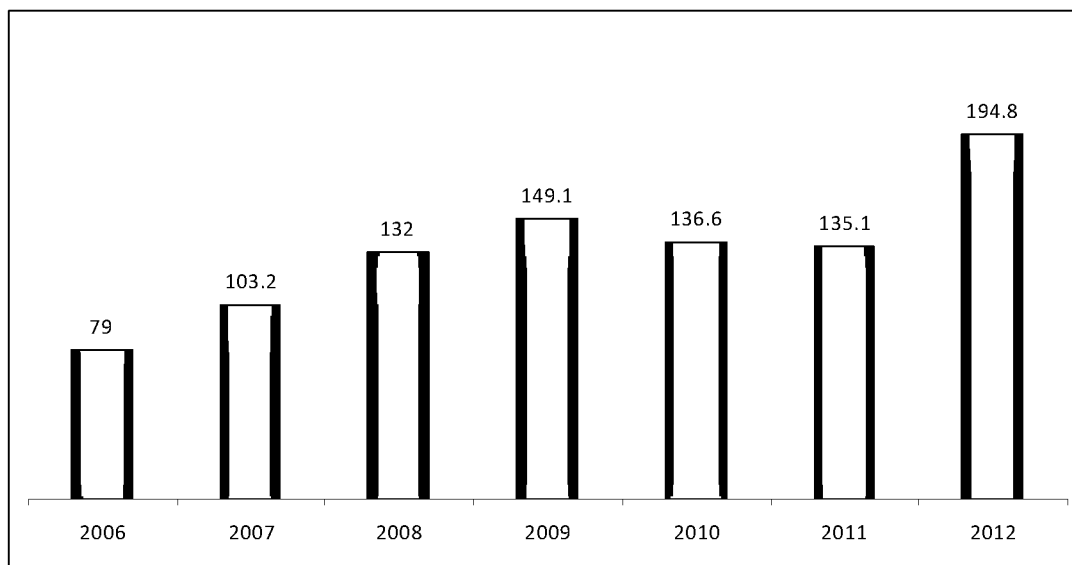
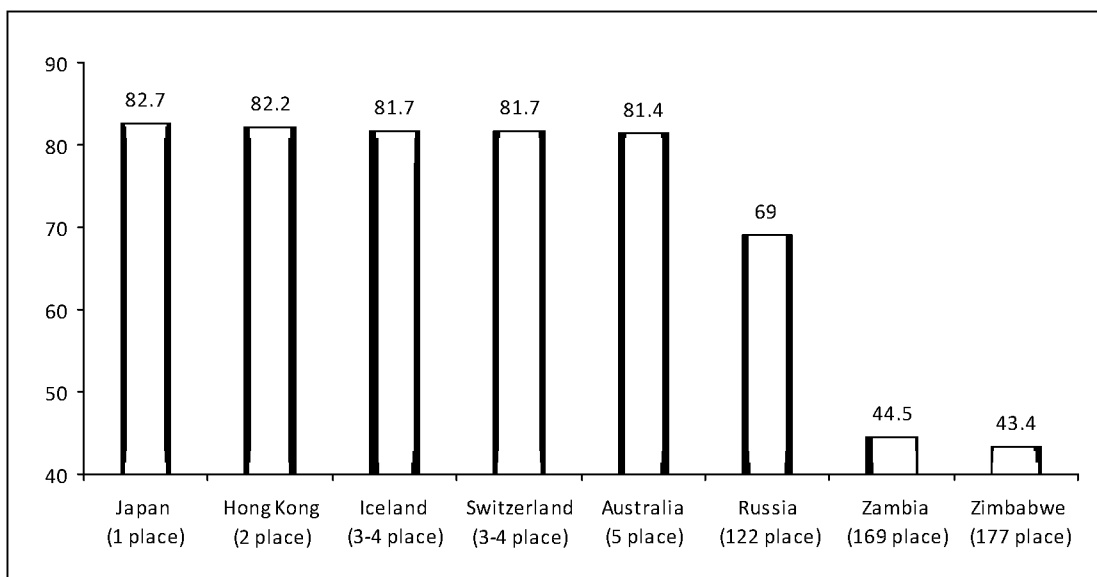


Figure 2. Dynamics of life expectancy in some countries



Source: 2009 Human Development Report, UNDP.

The territorial differentiation of life expectancy in Russia is quite significant. In 2009, the minimum rate – 65.9 years – was fixed in the Far Eastern Federal District. It was 4.7 years less than the maximum rate that was fixed in the Southern Federal District (tab. 2).

Demographic situation in Russia has begun to change for the better in the recent years: a

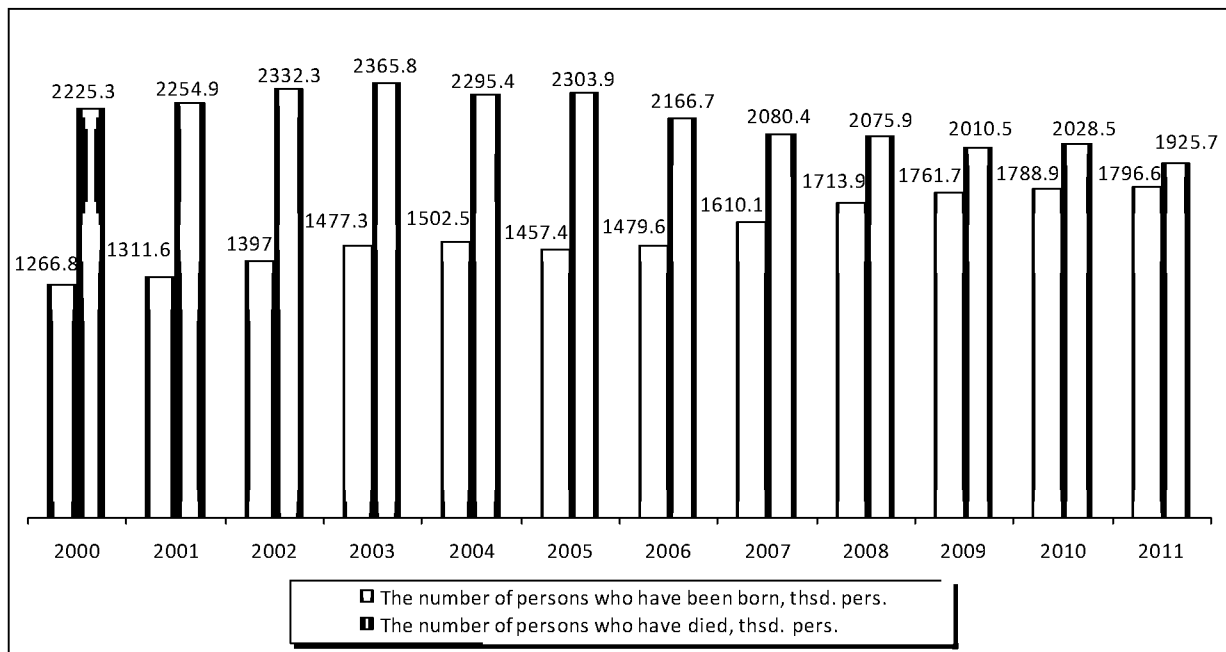
birth rate has increased and a mortality rate has reduced (fig. 3). But it should be noted that the total mortality in Russia was much lower in the 1980s than today. Moreover, mortality among the able-bodied population in Russia is four times higher than in the developed countries, and it is two times higher than in the developing countries.

Table 2. Life expectancy at birth in the federal districts of the Russian Federation, years

Federal district	2000	2005	2006	2007	2008	2009
Central	66.1	66.3	67.3	68.1	68.5	69.4
North-West	64.5	64	65.6	67	67.4	68.2
Southern	67.3	68.1	68.8	69.7	70.1	70.6
Volga	65.5	65.3	66.5	67.2	67.6	68.5
Ural	64.6	65.2	66.8	67.6	67.9	68.6
Siberian	63.7	62.8	64.7	65.7	66.2	67
Far Eastern	63.2	62.2	63.9	64.9	65	65.9
RF, on average	65.3	65.3	66.6	67.5	67.9	68.7

Note. The calculations of life expectancy index, as well as the analysis of other demographic indicators, given in the article, do not include the data about the North Caucasian Federal District, because there are no these figures till 2010 in the database of the Federal State Statistics Service.
Source: Databases of the Federal State Statistics Service. Available at: <http://www.fedstat.ru/indicator/data.do>

Figure 3. Demographic situation in Russia



Source: Federal State Statistics Service.

Table 3 shows that there were highest birth rates in the Ural and Siberian Federal Districts, where the total birth rate accounted for 14.1‰ in 2010. The worst situation was in the Central and North-West Federal Districts, where there were the lowest birth rates (10.7 and 11.4‰, respectively) with high mortality rates (15.2 and 14.9‰, respectively).

However, there is no significant effect of a higher level of health development in Moscow and St. Petersburg on the improvement of the demographic situation.

According to Academician A.G. Aganbegyan, people die from diseases 12 years earlier in Russia than in Western Europe, and men die from diseases 16 years earlier.

Table 3. Crude birth and death rates in the federal districts, ppm

Federal district	2000	2005	2006	2007	2008	2009	2010	2011
Central								
Birth rate	7.4	8.8	9	9.7	10.3	10.8	10.7	10.7
Mortality rate	17	17.4	16.7	16.1	16.1	15.5	15.2	13.9
North-West								
Birth rate	7.7	9.3	9.4	10.2	10.7	11.3	11.4	11.4
Mortality rate	16.4	17.7	16.6	15.6	15.7	15.2	14.9	13.9
Southern								
Birth rate	8.6	10	10.2	11.1	11.8	11.9	11.8	11.8
Mortality rate	15	15.6	15	14.5	14.4	14.1	14.1	13.7
Volga								
Birth rate	8.8	9.8	10.1	11.1	11.8	12.1	12.4	12.4
Mortality rate	15.3	16.5	15.6	15.2	15.1	14.6	15	14.3
Ural								
Birth rate	9.2	11.1	11.4	12.4	13.2	13.6	14.1	14.2
Mortality rate	14.4	14.8	13.8	13.3	13.3	12.9	13	12.7
Siberian								
Birth rate	9.7	11.4	11.6	12.7	13.7	14	14.1	14.1
Mortality rate	14.6	16.5	15.1	14.4	14.4	13.9	14.2	13.7
Far Eastern								
Birth rate	9.7	11.5	11.5	12.3	12.6	13	13.2	13.2
Mortality rate	13.2	15.3	14	13.5	13.6	13.3	13.8	13.5
Russian Federation, on average								
Birth rate	8.7	10.2	10.4	11.3	12.1	12.4	12.5	12.6
Mortality rate	15.3	16.1	15.2	14.6	14.6	14.2	14.2	13.5
Source: Databases of the Federal State Statistics Service. Available at: http://www.fedstat.ru/indicator/data.do								

The main mortality causes are the following:

1. *Cardiovascular diseases* – 57% of the total number of deaths; it is the main cause of all the deaths in the world. But these figures are higher in Russia than in other countries: 25% of the Russians, who had a heart attack, die. For comparison, this indicator is 5 times lower in Western countries. Every second person dies of apoplectic attack in our country, while in France only every eighth person dies of this disease.

2. *Injuries and external causes of death* – 27%. Injury mortality rate is much higher in Russia than abroad: it is 4 times higher than in

Japan, 3 times higher than in France, 3.5 times higher than in the USA.

3. *Cancerous diseases* – more than 14%. Comparing the cancer mortality rates among men in Russia and Western countries we can see that the share of dead is almost equal. But people die at the age of 65 in Russia and at the age of 75 in Western countries.

There is the highest cardiovascular death rate in the Central Federal District – 917.71 deaths per 100 thousand people (tab. 4).

High mortality rates in the North-West and Volga Federal Districts are influenced by high mortality rates because of external causes (156.26 and 192.83 per 100 thousand people, respectively);

Table 4. Mortality rate according to mortality causes in the Federal Districts of the Russian Federation in 2010 (the number of deaths per 100 thousand people)

Mortality causes	Central FD	North-West FD	Southern FD	Volga FD	Ural FD	Siberian FD	Far Eastern FD	RF on average*
Cardiovascular diseases	917.71	860.82	828.28	850.87	674.45	720.02	735.75	805.88
Neoplasms	227.16	229.37	212.63	192.83	200.82	208.06	190.97	205.10
External causes	124.89	156.26	115.20	173.99	173.42	203.44	202.45	151.72
Diseases of the digestive system	64.10	73.86	61.17	68.07	62.16	65.82	78.09	64.36
Diseases of the respiratory system	47.55	48.81	40.59	59.34	53.31	68.29	58.83	52.34
Some infectious and parasitic diseases	14.93	23.51	25.58	21.95	33.37	37.49	32.56	23.51
Suicides	14.51	21.60	17.69	30.36	30.16	36.53	34.04	23.42
All the types of transportation accidents	20.45	18.83	18.31	20.74	19.26	20.63	22.42	19.98
Accidental alcohol poisoning	11.80	17.30	4.73	15.95	13.10	22.27	13.18	13.39
Murders	9.28	12.43	8.32	12.61	15.95	23.05	25.61	13.26
<i>Total number of deaths</i>	<i>1517.54</i>	<i>1491.31</i>	<i>1406.32</i>	<i>1503.26</i>	<i>1297.54</i>	<i>1418.10</i>	<i>1376.38</i>	<i>1419.16</i>

* Ranked by prevalence in the Russian Federation.
Source: Database of the Federal State Statistics Service. Available at: <http://www.fedstat.ru/indicator/data.do>

the most common of them are suicides and transport accidents. It should be noted that there are higher death rates of neoplasms in the North-West and Central Federal Districts than in the country on average (229.37 and 227.16 cases per 100 thousand people, respectively).

In modern conditions, it is possible to determine four factors that are crucial for health support.

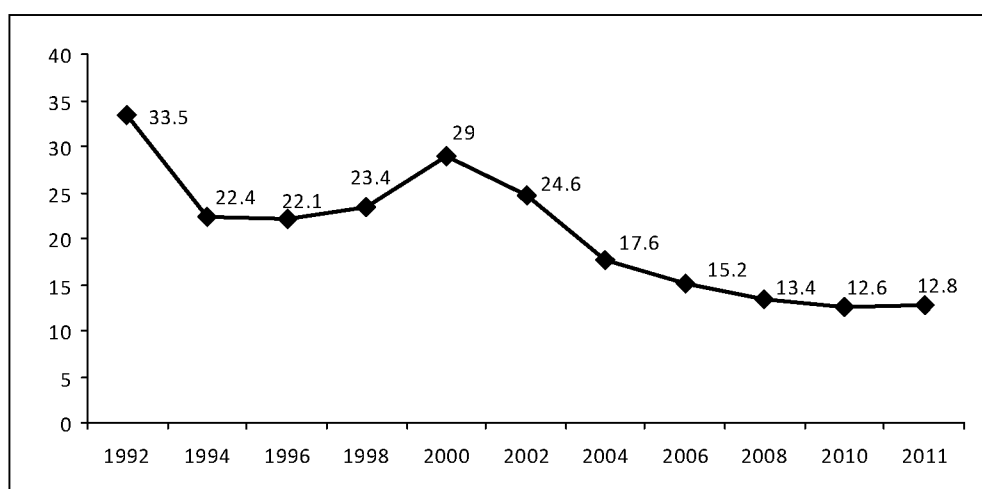
The first one is an economic factor that is associated with human capabilities to create the material basis of well-being.

One of the main problems in modern Russia is a huge gap between the rich and the poor. Low wages of most employees and high unemployment rate do not improve health. And at first glance, the state has taken steps to improve the welfare of the Russians. For example, according to the Federal State Statistics Service, the number of people living below a minimum subsistence income has been decreasing since 2000. The number of these citizens has reduced almost 2-fold over 10 years. This is a positive trend (*fig. 4*).

However, the rise in population's welfare is accompanied by the increase in property stratification. This process is being observed during the recent decade in all the districts of the Russian Federation. The most difficult situation is in the North-West Federal District. During the period from 2000 to 2010, there was the lowest decrease in the number of people living below a minimum subsistence income in this territory with the highest growth rates of funds coefficients in comparison with other federal districts (*tab. 5*). For comparison, the rate of decline in the share of people living below a minimum subsistence income for the same period accounted for 56.6% in the Russian Federation on average, and the growth of R/P 10% ratio and Gini coefficient – 6.3 and 18.7%, respectively.

The Internet-based survey, the results of which were published last spring in the newspaper "Metro", showed that the population's cost structure of life-saving goods was far from optimal. Thus, the citizens of the Russian Federation spend half of their income to buy food-stuffs – this is more than in many other

Figure 4. The Russians living below a minimum subsistence income (in% to the total population)



Source: Data of Federal State Statistics Service.

Table 5. Indicators that characterize the dynamics of population's living standards

Federal district	R/P 10% ratio (the ratio of the average income of the richest 10% to the poorest 10%)				Gini coefficient (coefficient of income concentration)			
	2000	2005	2009	2010	2000	2005	2009	2010
Central	10.72	11.89	13.65	13.54	0.342	0.365	0.388	0.384
North-West	9.72	12.68	14.11	14.16	0.340	0.378	0.395	0.396
Southern	10.03	11.78	13.27	13.28	0.348	0.372	0.389	0.389
North Caucasian	9.37	10.48	11.70	12.02	0.339	0.356	0.371	0.376
Volga	9.76	11.76	13.95	13.93	0.340	0.367	0.387	0.394
Ural	14.39	15.61	16.63	16.40	0.394	0.409	0.419	0.418
Siberian	10.82	12.15	13.65	13.95	0.359	0.381	0.390	0.396
Far Eastern	9.53	11.98	13.39	13.26	0.342	0.374	0.390	0.389
RF, on average	13.9	15.2	16.6	16.5	0.395	0.409	0.421	0.42

Source: Federal State Statistics Service. Available at: <http://www.fedstat.ru/indicator/data.do>

countries (fig. 5). Consequently, most people have not enough income to supply other vital needs.

This conclusion is confirmed by the results of another survey conducted by the All-Russian Public Opinion Research Centre (VTSIOM): more than half of people do not invest their spare money, because they simply do not have them. And the share of such people has increased over three years. Of course, it is rather difficult to find money to invest them in the health in these conditions (fig. 6).

This means not only, for example, the payment for classes in the pool or gym. The people in Russia have to save not only on food but on medicines due to a lack of funds. The results of the survey, conducted by VTSIOM specialists in autumn in 2011, show that 58% of respondents consider their medical products expenses as burdensome for their budgets. 19% of respondents (almost – one in five!) claim that they have no money to buy even the essential medicines (fig. 7).

Figure 5. Food expenses in the world (in % of personal income, national average)

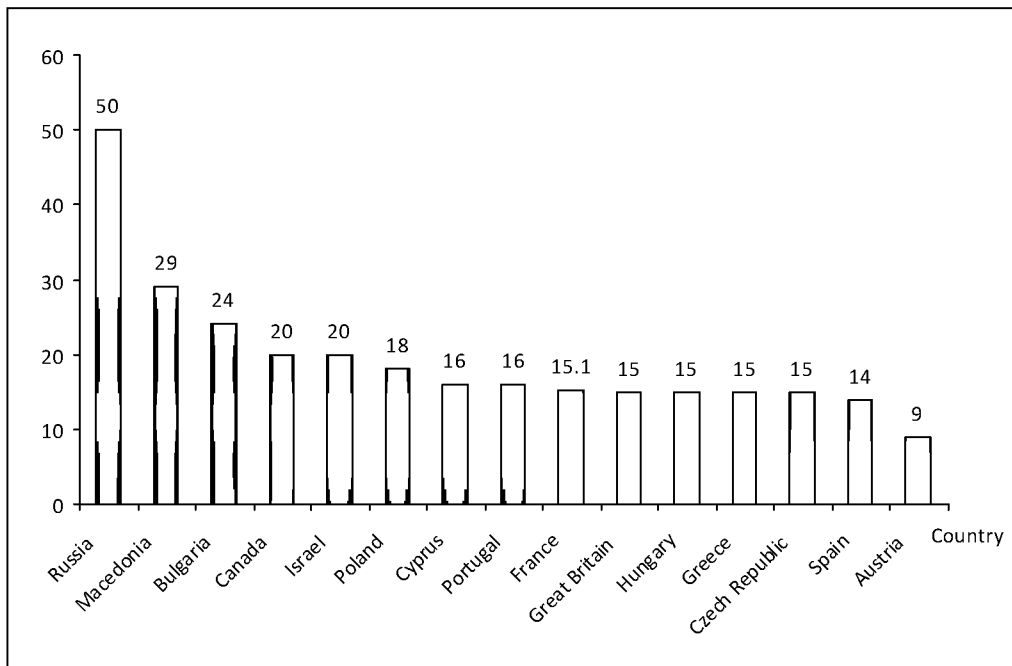
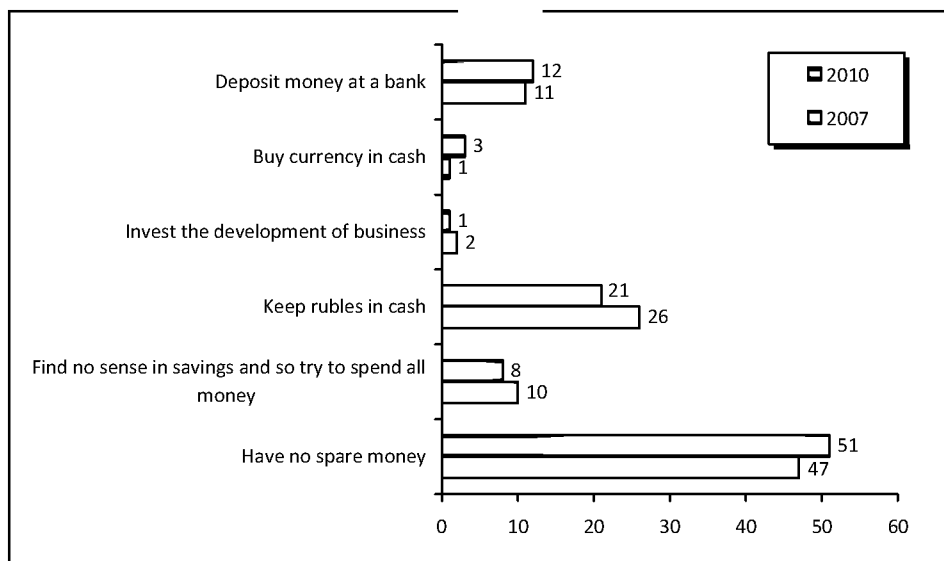


Figure 6. Where do the Russians invest their spare money?



Population incomes are directly related to improving their living conditions, which affect the health. There is a concept of “**affordable housing**” that is defined by the numbers of annual salaries of a typical worker required to buy a typical one-bedroom apartment. Comparing some cities of Russia and other

countries shows that housing prices are higher in Russia than in Western countries, while wage rates are lower (*fig. 8*).

As a result, according to housing supply, Russia ranks 80 among 200 countries; it is inferior to Latin America, Africa and the Middle East.

Figure 7. The results of the survey of Russian citizens on the appropriateness of purchasing drugs in 2011

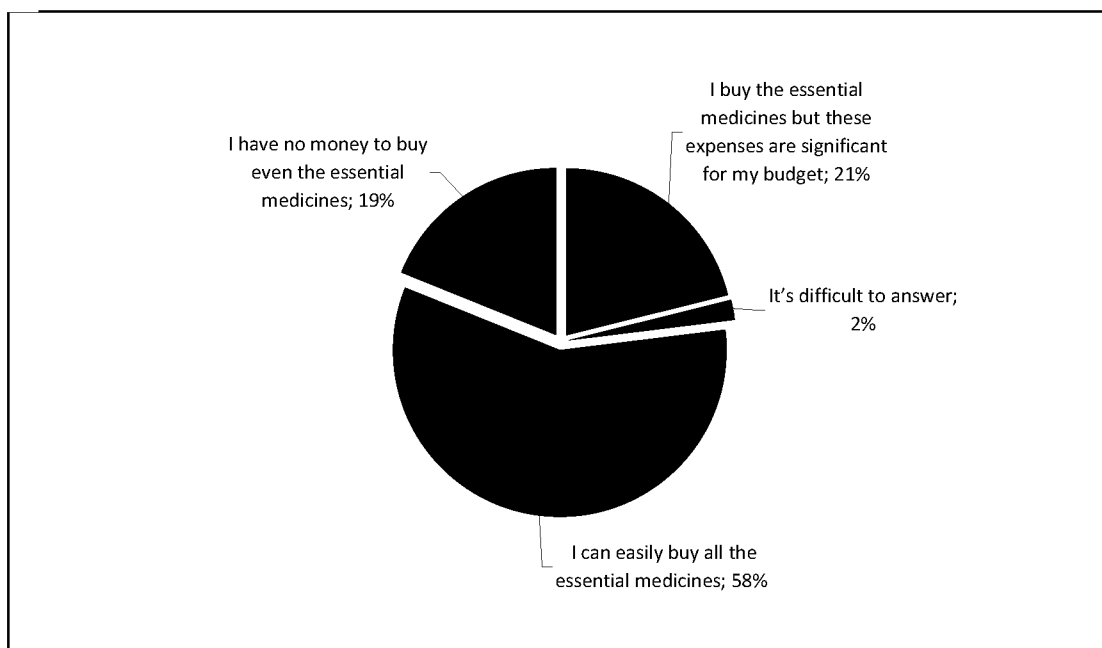
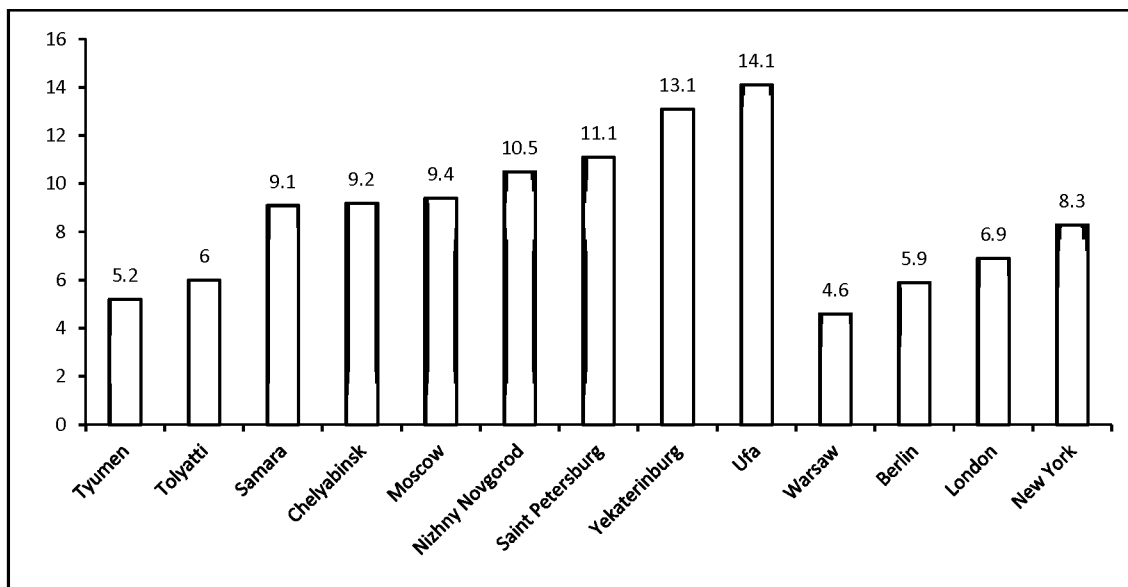


Figure 8. Housing affordability



Source: Data of the Fund "The Institute for Urban Economics".

There are 21 square meters of housing per person on average in our country, while the average supply of housing amounts to 40 – 60 square meters per person in the developed European countries and 70 square meters in the USA. But it's not just the size of living space.

Housing comfort is much more important. According to Academician A.G. Aganbegyan, houses in Western countries are equipped with a refrigerator, gas or electric stove, microwave oven, dishwasher, washing machine, air conditioning, multiprogram television, modern

telephone and Internet, garage for one or two cars. In Russia, a quarter of the housing is not equipped with sewerage and water supply system, and more than half of houses do not have hot water supply.

The rapid deterioration of available housing is a huge problem (*fig. 9*). Complete housing overhaul has not been carried out over the last two decades. As a result, today the amount of dilapidated housing in Russia is more than one billion square meters. At the same time, new housing construction is small and often the quality of these buildings is poor.

The second health factor – medical – is associated with human treatment capabilities. International research company EPSI that regularly measures customer satisfaction with health services in 20 countries puts Russia in the last place with a satisfaction index of 56.9 points out of a possible 100. As it has been already noted, medicine expenses have been increased significantly in our country in the recent years. Unfortunately, these funds are aimed at the development of medicine in large cities, while the developmental level of rural

medicine remains extremely low. This leads to extreme regional differences.

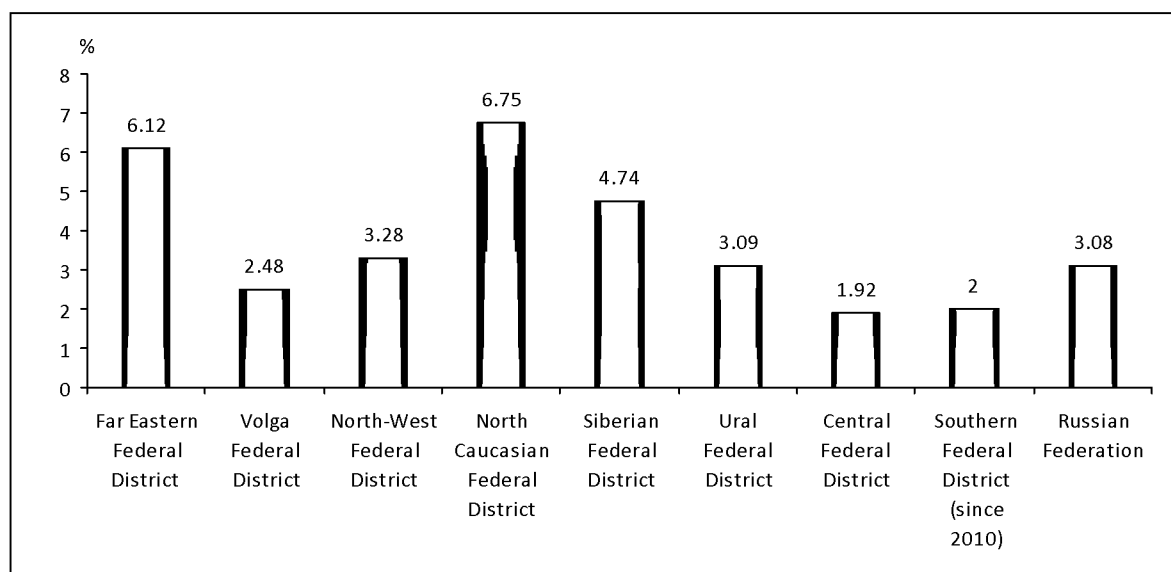
According to the report “Millennium Development Goals”, prepared by a group of UN experts, the world rural maternal and infant mortality rate is 40% higher than the urban one. This indicator is 50% in our country,

The third factor – environmental – is associated with the environmental influence over the people. Environment protection is troubled in our country. According to the Prime Minister’s assessment, about 15% of Russian territory is in critical environmental conditions. There are mainly ecologically poor industries such as metallurgy, oil and gas complex in the Russian economy; and clean industries, for example, electronics, are not developed.

According to the polls, the majority of citizens believe that the environmental situation has deteriorated in their region in the recent years, and they are afraid of ecological disasters.

Firstly, today, as a result of increased pollution, clean rivers remain only in Kamchatka. One third of population lives in the

Figure 9. The share of ramshackle and failing housing stock in the total housing area in 2010, %



Source: Federal State Statistics Service.

regions where there are no efficient waste water treatment facilities, i.e. water is not purified effectively; there are old rusty pipes in most houses; 40% of urban water supply systems are in disrepair. Thus, according to the polls, one third of people drink tap water, they do not filter or boil it, i.e. there is a threat to the health of 30 million people.

Secondly, half of urban people live in the regions where air pollution level is characterized as high and very high. Naturally, they include the major megalopolises of the country. And there has been an increase in air pollution over the last ten years in 16 of 34 cities in Russia. And, of course, increasing urban transport contributes a lot to air pollution. In large cities, the share of motor transport accounts for 90% of emissions. It should be also noted that hundreds of thousands of people in Russia live in the sanitary protection zones of industrial enterprises, i.e. in the territories where air pollution is particularly high, and according to Russian legislation, one cannot live in these zones.

Thirdly, the state of soils in Russia is poor. In the cities they are intensely polluted with cadmium, arsenic, antimony, radioactive substances. But soil contamination with lead caused by carexhaust is the most troublesome one.

Lead has the most negative impact on human health. Women and men reproductive systems are damaged, and there is a decline in children mental development and increase in childhood mental disorders. According to ecologists, lead contamination covers all the territories of Russia. However, effective measures to reduce lead emissions have not been developed yet.

There is the most unfavorable situation with air pollution emission in the Ural and Siberian Federal Districts. The need to decrease dirty discharge is actual in the Central, North-West and Volga Federal Districts (tab. 6).

Finally, the fourth factor affecting health is social, which is determined by human abilities to perceive oneself as a full member of society. At the same time, the social and psychological conditions in the Russian society cannot be considered as satisfactory. Russia is one of the most “disturbing” countries the world, along with Sudan, Iraq and Somalia. Russian people die of stress due to the unstable situation in the country 20 times more often than 30 years ago.

There are such common habits in Russia as smoking and alcohol consumption that lead to the decline in health. Tobacco corporations have found huge market outlets in Russia. The number of smokers is almost 1.5 times more in our country than the world average.

Table 6. The amount emissions of pollutants into the atmospheric air and dirty discharge into surface water sources in the federal districts of Russia

Federal district	Emissions of pollutants into the atmospheric air due to stationary sources (thsd. t)*				Dirty discharge into surface water sources (bln. sq. m)			
	2000	2005	2009	2010	2000	2005	2009	2010
Central	1597	1496	1577	1618	4742	4341	3596	3761
North-West	2335	2254	2176	2389	3579	3192	2830	3088
Southern	772	617	629	648	1752	1409	1409	1446
North-Caucasian	143	185	152	138	637	496	445	390
Volga	2930	3071	2567	2513	3858	3162	2674	2883
Ural	4562	6296	5262	5105	1773	1681	1702	1860
Siberian	5604	5615	5789	5868	2914	2575	2348	2218
Far Eastern	876	890	869	836	1036	871	848	870
RF, on average*	18.8	20.4	19.0	19.1	20291	17727	15854	16516

* In Russia – in mln. t.
Source: Data of Federal State Statistics Service. Available at: <http://www.fedstat.ru/indicatr/data.do>

43.9 million people or about 40% of the adult population smoke in Russia. 7 out of 10 men and 4 out of 10 women aged 19 – 44 smoke in our country (fig. 10).

300 billion rubles of budget money are spent annually to treat the diseases associated with smoking, although tobacco companies' assignments to the budget account for only 88 billion rubles.

According to the study "Smoking beginner", which was published in the Arguments and Facts Newspaper, 100% of homeless teenagers, 31.7% of girls and 24.4% of boys smoke in St. Petersburg.

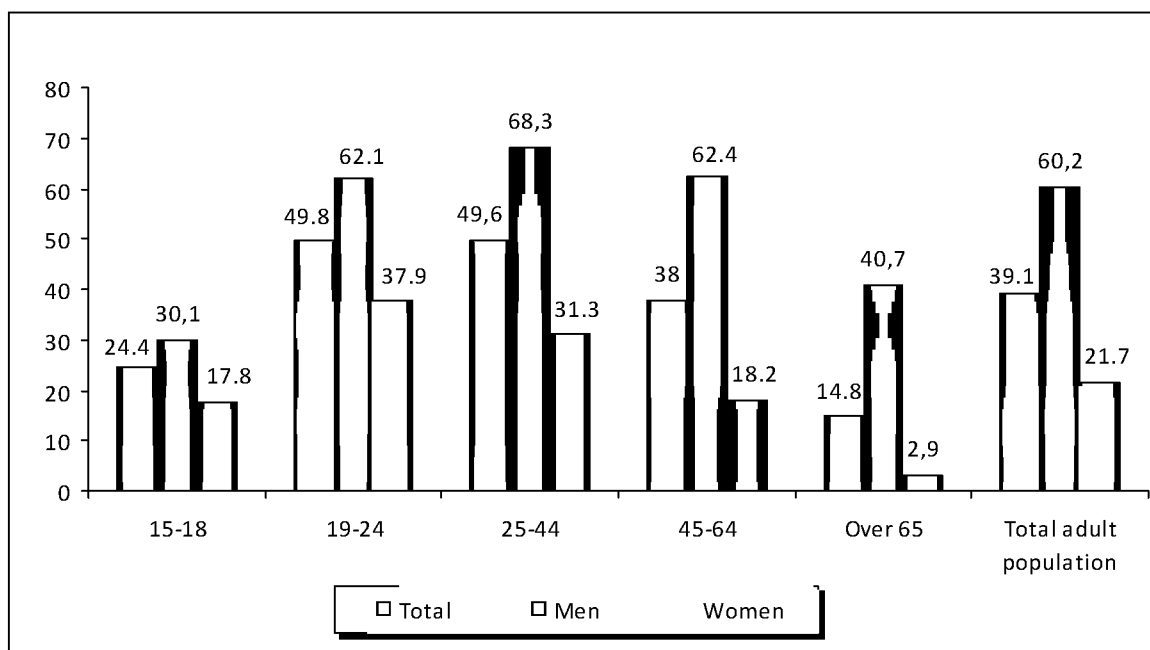
However, the measures that are taken recently give the hope that this situation will be improved. The Ministry of Health has prepared a draft of a new "anti-smoking" law. According to it, for example, smoking will be prohibited in the workplace, the territories of educational, medical, cultural and sporting

institutions, catering organizations, in the areas of public recreation and public transport. Tobacco advertising and tobacco companies' sponsorship of any events and activities will be completely banned.

However, of course, it is necessary to think about ensuring the rights of smokers, for example, through establishing the special places equipped with modern ventilation devices.

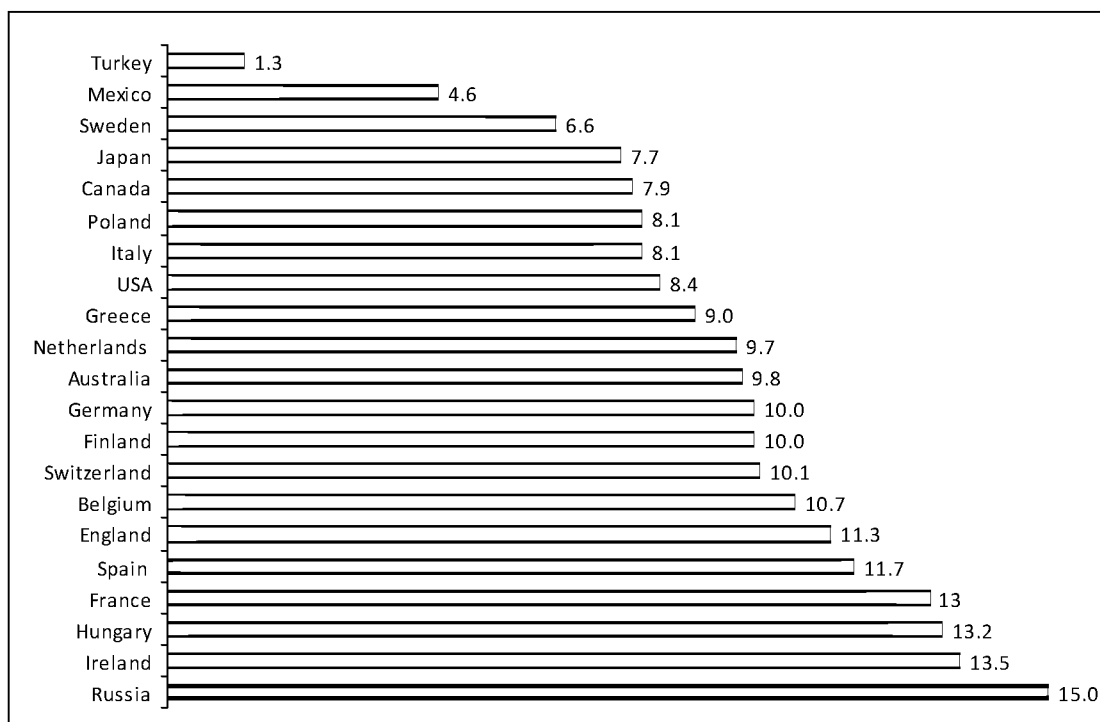
Alcoholism expansion is another trouble; the data of the Ministry of Health and Social Development shows the extent of the problem: alcohol consumption in Russia accounts for 15 liters of pure alcohol per capita annually. However, the World Health Organization considers that the level of alcohol consumption equal to 8 liters is dangerous to the health of the nation. Each additional liter beyond this limit takes away 11 months of men life and 4 months of women life. Russia has gone on before other countries in the world (fig. 11).

Figure 10. Smoking in Russia (the share of smokers, %)



Source: Global survey of adults about tobacco use. Russian Federation, 2009.

Figure 11. Alcohol consumption in the Russian Federation and Western countries



The incidence of such socially dangerous diseases as HIV, tuberculosis and diabetes is revealing. According to the Federal State Statistics Service, there is no any improvement in this indicator, and on the contrary, these morbidity rates are increasing in the whole country. For example, the number of HIV-infected people has increased by 30% since 2005 (*fig. 12*).

This sad result is largely due to negative social phenomena: in Russia such disease as HIV is transmitted mainly through drug addicts' syringes. The problem of drug addiction in Russia acquires the features of a national disaster. According to the Ministry of Health and Social Development, the number of drug addicts increases by 4.5% every year.

Today, unfortunately, Russia lags far behind the developed countries in the economic and social spheres, including the health sector. There are many problems that should be solved as soon as possible.

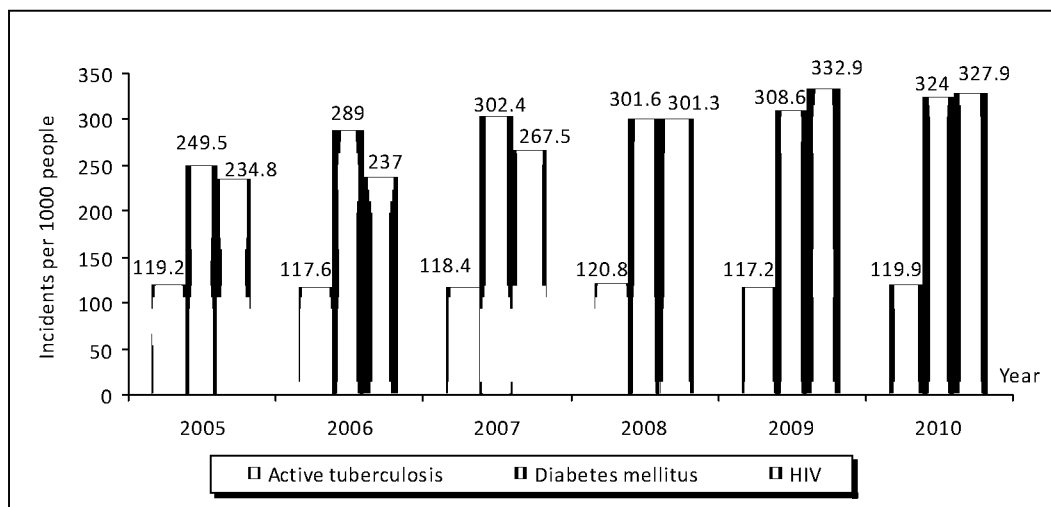
The government understands this and takes some steps to solve them. For example, the Concept of the Demographic Policy in the Russian Federation until 2025, adopted in 2007, is taking on great significance.

It is assumed that it will be possible by 2025:

- providing a gradual increase in the population size (including at the expense of replacement migration) up to 145 million people;
- increase in life expectancy up to 75 years;
- 1.5-fold increase in the total birth rate in comparison with 2006;
- 1.6-fold decrease in mortality rate;
- 2-fold decrease in maternal and child mortality.

Nowadays, there are various alternatives to develop the country. It is necessary to point out a very important thing. Such programmes should include the complex development of all the spheres – economy, social sphere, culture, etc.

Figure 12. The incidence of HIV, diabetes and tuberculosis



Source: Federal State Statistics Service.

Our country must meet public health indicators of countries with the same level of economic development by 2025.

Summing up what has been said above, we would like to suggest the following areas for further work:

1. Strengthening the role of the state in the development of public health:

- adoption of a new legislation;
- implementation of the national project “Health”;
- measures to improve the environmental protection;
- enhancement of measurement capabilities and standardization .

2. Transition to health protection:

- considering the health as an economic resource;
- revival and development of preventive medicine;
- development and implementation of economic incentives to improve health.

3. Changing the attitudes to our own health:

- adherence to a healthy lifestyle;
- selection of a family physician;
- upbringing the children with responsible attitude to the health.

Successful implementation of the proposed measures could significantly improve the quality of life in Russia and make the Russians more happy.

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