

# **Public Spending in Russia for Health Care:**

## **Issues and Options**



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**Europe and Central Asia Region  
Human Development Department  
Russian Federation Country Management Unit  
The World Bank**



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# Introduction

*“The main challenge now is to translate these economic successes into social programs to show that developing the economy improves the lives of every Russian citizen. In recent times we have begun to implement some social programs in the areas of education and health care and I believe that it’s very important to maintain and develop these programs, getting on with the full-scale modernizing of work in health care and education.”*

**Dmitry Medvedev, President of the Russian Federation**  
**Interview with the Financial Times, March 24, 2008**

This report examines three critically important areas to inform discussions on the appropriate level of health care spending in the Russian Federation:

- *The efficiency of spending on health care services.* What is the relationship between inputs and outputs in the Russian Federation? Does the Russian Federation achieve value in health care spending compared to members of the European Union (EU) and/or the G-8 group of countries? What factors can reduce efficiency in the Russian Federation and how can they be minimized?
- *Distributional impacts of spending on health care services.* How are resources distributed across the regions and how are resources allocated by income. What can be done to minimize the disparities across the regions and by income?
- *The key factors that will influence the growth in health care spending over the next 20 years.* How can the Russian Federation sustain economic growth in an environment when the working age population is shrinking and the population over age 65 is increasing?

This analysis draws on routinely collected regional and federal data and as discussed below is limited in scope by the relative absence of routinely or specifically collected data on the outcomes and outputs of the health care systems in Russia.

There are few data showing how spending in health care in the Russian Federation translates into better health outcomes such as improved mortality, improved morbidity, increased economic output and productivity, improvements in the number of life years gained, or more sophisticated composite measures such as Quality Adjusted Life Years (QALYs). There is also limited data on outputs of hospitals and other healthcare providers which allow controlling for case mix, socio-economic status, supply-side variables and quality of care. Therefore, it is difficult to assess the efficiency or distributional impacts of health interventions. While the analysis draws on primary data specifically collected for the study, the absence of detailed output and outcome data, necessarily limits the scope of the study and its findings.

The primary audience for this report consists of policy makers, analysts, managers and service providers in the Russian health sector. A secondary audience is internal, particularly managers and staff of the World Bank who are working in the Russian Federation and other middle-income countries.

# I. The Efficiency of Spending on Health Care Services

When discussing efficiency of health care spending it is useful to briefly visit the definitions of efficiency and effectiveness as these vary.

Macroeconomic efficiency relates to the proportion of resources allocated to health care in aggregate and the benefits achieved (in terms of health outcomes). Countries that spend more on health care with similar outcomes are less efficient. Countries that spend less on health care and have better outcomes are more efficient.

Microeconomic efficiency which refers to the scope of achieving efficiency from existing resources has two different components: technical and allocative efficiency. Technical efficiency (also called productive efficiency) compares the different levels of service produced at a given level of expenditure using a single method to produce a service. For example, it would compare two different ways to perform a CT scan and would measure which approach is least costly assuming they both result in the same health gain. Allocative efficiency relates to different mix of services/activities to achieve greatest impact on health and health outcomes. A third term also commonly used in discussions of efficiency of health care spending is effectiveness. Effectiveness in this context re-

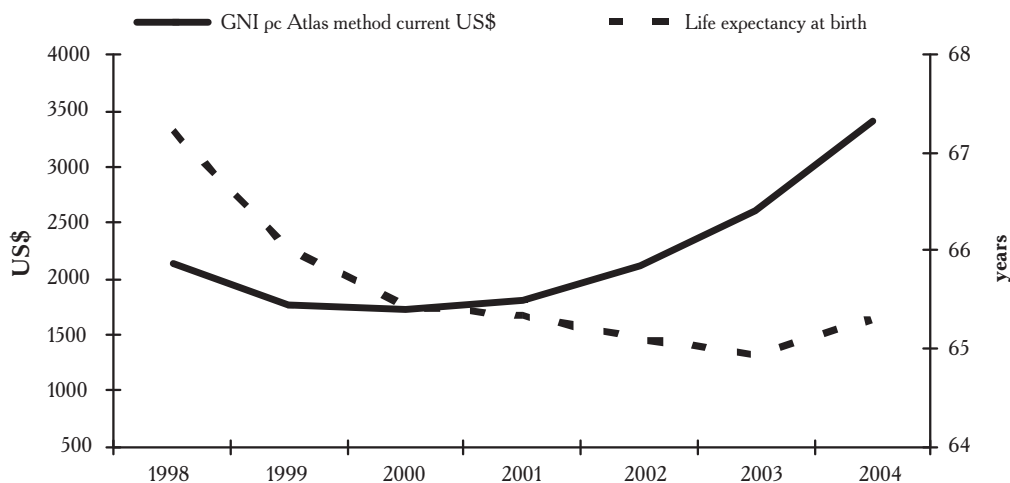
fers to the extent to which the services and interventions provided are in line with the best available evidence.

The analytic challenges are how to measure the cost of health care and how to measure outcomes and outputs. At the simplest level the costs are the expenditures to treat people. As measurement of cost, expenditures and outcomes vary in different countries cross-country comparisons are necessarily difficult. However, with this caveat stated, we draw on published studies to explore macroeconomic efficiency by comparing the level of spending and the health outcomes across Russia and different countries

## 1.1. Poor health outcomes in the Russian Federation

In the Russian Federation today, female life expectancy (72 years) is close to the level of 1955; male life expectancy (59 years) is four years less than what it was in that year, and is now at the same level as in Eritrea and Papua New Guinea. Until 2004, declines in life expectancy in Russia contrasted sharply with strong growth in gross national income (GNI) achieved since 1998 (Figure 1). Even with the positive dynamic exhibited in 2006, average life expectancy in Russia only rebounded

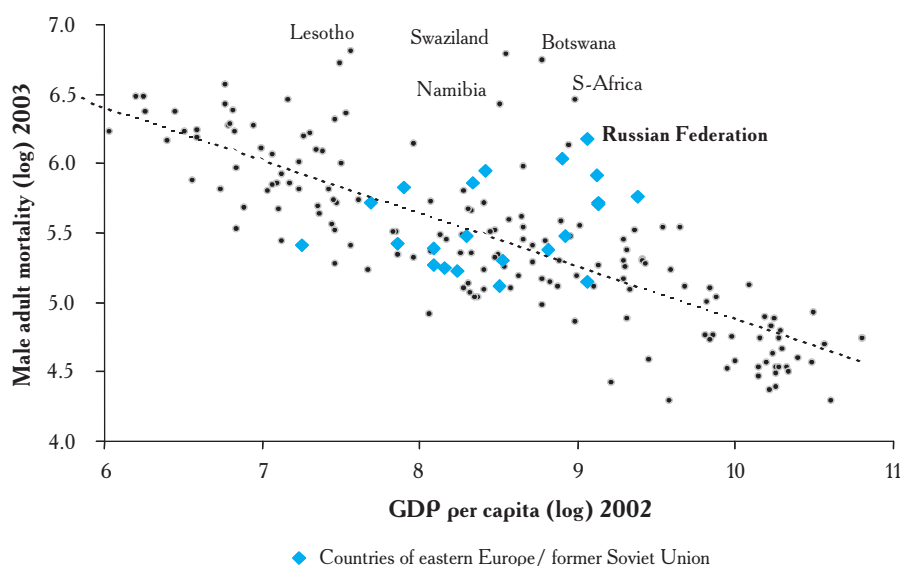
Figure 1: Gross National Income per Capita and Life Expectancy



Source: World Bank World Development Indicators 2005/WHO/EURO HFA Database 2005.



**Figure 2: GDP Per Capita and Male Adult Mortality in Russia and Other Countries**



Source: Prepared by authors on the basis of World Bank and WHO data.

to the low level of 2000 (66 years). This can be compared with a 78 year average in the European Union; a 12 year difference. The gap is even more pronounced in terms of healthy life expectancy (HLE): in Russia, HLE for women is about 10 years less than in France, and 16 years less for men than in the United Kingdom. HLE is a measure of the life expectancy at full health.

As shown in Figure 2, mortality rates for adult males are very high in Russia relative to other countries at similar income and development levels. These outcomes are often worse than that in other Eastern European and Commonwealth of Independent States (CIS) countries and similar to levels observed in several African countries severely affected by the AIDS epidemic.

### 1.2. Main causes of premature death, ill health and disability in the Russian Federation

The main causes of poor health outcomes—premature death, ill health and disability—among adults in the Russian Federation, are: (i) non-communicable diseases (NCDs, e.g., heart attacks, strokes, cancer), and (ii) external causes, predominantly injuries due to traffic accidents.

In 2006, cardiovascular diseases (CVD), cancer, diseases of the digestive system (DDS), diseases of the respiratory system (DRS) and diabetes mellitus (DM)

accounted for 56.9 percent, 13.1 percent, 13.1 percent, 4.1 percent, and 3.8 percent, respectively, of all deaths in the country. Collectively, their overall contribution to total deaths was estimated at 91 percent. While CVD and cancer accounted for 70 percent of all deaths in 2006, infectious and parasitic diseases accounted for only 1.6 percent of all deaths.

External causes of death (EC), including injuries, are the second leading cause of death in Russia after non-communicable diseases—especially in women aged 1–35 years and in men aged 1–45 years. In 2006, 80 percent of all injury deaths occurred in men aged 20–24 years, and 54 percent in women aged 15–19 years. Of all injury-related deaths in 2006, industrial accidents accounted for 17–19 percent, domestic accidents for 46–46 percent, and street accidents for 28–30 percent. Road accidents accounted for up to 60 percent of the total injury-related deaths, and are among the major causes of disability in the working-age population. Some 200,000 persons are injured in road accidents each year in the Russian Federation and 30,000 of these die. The respective figures for children are 22,000 total injured and 1,500 deaths. Road-related injuries are one of the most serious socio-economic and medical problems of Russia today.

Standardized deaths per 100,000 of population for major causes of death in the Russian Federation in 2005 far exceeded the corresponding rates in the EU countries—

the mortality rates from CVD and external causes of death for Russian men are respectively four and seven times higher than those observed in the EU, while these rates for Russian women exceed the rates observed in the EU four times.

At present levels of mortality, less than six out of every ten 15-year-old Russian boys can expect to survive to the age of 60, while almost eight out of every ten Brazilian or Turkish boys and nine out of ten British boys of the same age can expect to live until 60. The survival prospects for Russian girls, while still lower than many other countries of comparable socio-economic development, do look markedly better than for Russian boys.

### 1.3. Life expectancy differences within the Russian Federation

Mortality rates and life expectancy at birth in Russia vary greatly by region, in part because of regional differences in socioeconomic status and health levels. These differences can be observed when analyzing the regional variation in average life expectancy at birth. The total and the gender differences however are very striking. People in a socio-economically better-off region outlive their counterparts in a socio-economically less well off region by almost 20 years. Furthermore the differences in life expectancy between men and women within regions are also large but these differences are less acute across regions. On average, women outlive

### 1.4. The social and economic cost of NCDI in the Russian Federation

As documented in a recent World Bank report<sup>1</sup>, the Russian Federation's unprecedented mortality upsurge in the last two decades, coupled with fertility rates that are well below replacement level, has several important implications beyond the socio-demographic make-up of Russia. These are discussed below.

(i) **Shrinking population:** Since the beginning of the 1990s, the Russian Federation's population has declined by six million to an estimated 143 million. The average annual population growth between 1990 and 2003 was -0.3%, and continued high mortality and declines in fertility are expected to lead to further population decline. It is estimated that the population of the Russian Federation would be 17 million higher than at present if age-specific mortality rates had followed the patterns experienced by the EU-15 countries since the mid-1960s<sup>2</sup>.

(ii) **Fewer workers:** If these trends persist, the size of the Russian labor force will continue to shrink. A healthy population aged 65 to 75 could represent a sizable untapped workforce<sup>3</sup>. However, the high burden of ill health among surviving older Russians may limit what can be achieved.

(iii) **National security risks.** The demographic and health crisis in the Russian Federation present many

**Table 1. Regional Variation in Life Expectancy at Birth in Russia 2000–2006**

	Life Expectancy at Birth								
	2000			2003			2006		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Region with the longest life expectancy	74,0	68,6	79,0	74,8	71,5	77,8	76,0	71,9	79,8
Region with the shortest life expectancy	56,1	50,4	63,0	54,1	47,4	60,2	55,9	52,8	59,8

Source: Rosstat, 2007.

men by eight years within the region with the longest life expectancy and seven years within the region with the shortest life expectancy. The within region difference suggests important variations between socio-economic population groups in addition to the variation across regions (Table 1).

<sup>1</sup> World Bank 2005. Dying Too Young. Addressing Premature Mortality and Ill Health Due to Non-Communicable Diseases in the Russian Federation, Washington, DC.

<sup>2</sup> E.M. Andreev, 2005. "Demographic Consequences of Mortality Reversal in Russia." Paper for the XXV IUSSP International Population Conference, Section 36: "Demographic and Socio-Economic Consequences of Adverse Mortality and Health Trends," Tours, France, July 18, 2005.

<sup>3</sup> P.F. Drucker, 1999. Management Challenges for the 21st Century. Burlington, MA: Butterworth-Heinemann..

challenges to national security<sup>4</sup>. First, the number of men of conscription age will plunge rapidly in the decades ahead. Second, a growing percentage of the military budget must provide for medical, nutritional, and substance abuse programs for soldiers deemed medically unfit. Third, long-term economic growth will depend on large cohorts of healthy and skilled young and middle-aged adults engaged in productive enterprises yet the demands of the armed forces will reduce the available pool. Finally, the Government is concerned that depopulation of some border areas may have potential security implications.

**(iv) *Impact on health care costs and the economy:***

The contribution of NCDI to the burden of illness in the Russian Federation raises two economic questions. First, as many NCDI require expensive and prolonged medical treatment, to what extent is the Russian health system burdened with the cost of treating them?<sup>5</sup> Second, what are the economic consequences of premature mortality, ill health, and disability among Russian working-age adults?

**(v) *High medical treatment costs:***

Estimates of expenditure from two regions in the Russian Federation (Chuvash Republic – an agricultural region – and Kemerovo Oblast – an industrial region) in 2003 were analyzed and the results extrapolated to the national level.<sup>5</sup> The shares attributable to different diseases were applied to the US\$13 billion that is widely accepted as the total level of health care expenditure. This analysis showed that NCDI are the Russian Federation's highest-cost conditions. The four most costly conditions were circulatory system diseases, respiratory diseases, external causes (both intentional and unintentional injuries), and digestive system diseases. These conditions account for more than 50% of the country's total health expenditures.

**(vi) *Adverse economic effects.*** A summary of the main findings presented in the “Dying Too Young” report follows.

<sup>4</sup> J. Twigg, 2004. “National Security Implications of Russia's Health and Demographic Crisis,” PONARS Policy Memo 360: 1–5.

<sup>5</sup> Frid, E. 2005. “Health Care Costs in the Russian Federation.” Background assessment prepared for the World Bank, Moscow, March.

- ***The cost of absenteeism due to ill health.*** A conservative estimate identifies significant costs of absenteeism due to illness: on average, 10 days are lost per employee per year due to illness in the Russian Federation, while in the EU15 countries the average is 7.9 days. Sickness absence incurs the direct cost of sickness benefits paid to absent employees as well as the indirect cost of lost productivity. The overall cost associated with the reported workdays lost to illness in the Russian Federation varies between 0.55% and 1.37% of GDP (depending on whether the monetary value is calculated from the average wage rate, giving the lower value, or GDP per capita, giving the higher value). This is a significant impact, given that it excludes the many other ways that ill health impacts the labor market such as the effects of reduced productivity.

- ***Adverse impact on labor supply.*** Ill health also impacts labor supply because jobholders with chronic non-communicable diseases are more likely than healthy individuals to either retire early or to lose their jobs and draw on state pensions. While a hypothetical Russian male aged 55 with median income and other average characteristics<sup>6</sup> would be expected to retire at age 59, having a chronic illness would lower his expected retirement age by 2 years. Similar results are obtained for females. Chronic illness, therefore, is a significant predictor of premature retirement in the Russian Federation. The effect is greatest among the poor who carry a double burden of ill health: first, they are more likely to suffer from chronic illness, and second, once ill, they suffer worse economic consequences than rich people, perpetuating socioeconomic disadvantage.

- ***Adverse impact on labor productivity.*** Empirical analyses adopting various estimation procedures conclude that in the Russian Federation poor health reduces wages much more than in the Organization for Economic Co-operation and Development (OECD) countries, where poor health tends to affect mainly the number of hours worked. More precisely, from the Russian Longitudinal Monitoring Survey (RLMS) data, people reporting good health earn higher wages than those in poor health,

<sup>6</sup> The other characteristics of this hypothetical individual are that he is married, has one child, has a high school diploma, was born in the Russian Federation, and is living in an urban area.

with a 22% premium for women and 18% for men (when endogeneity of the health proxy is addressed using standard econometric techniques). The National Survey of Household Welfare and Program Participation (NOBUS) data yield similar results: men in good health earn about 30% more and women 18% more compared to those in less than good health. Finally, a panel analysis based on the RLMS 2000–2003 rounds confirms that good health status positively affects the wage rate for males, while it does not substantially affect the number of hours worked per week.

- **Job losses.** Alcohol abuse in the Russian Federation significantly increases the probability of being dismissed from employment.
- **Adverse impact on the family.** The death of a household member affects other household members' welfare and behavior in various ways. RLMS data indicate that alcohol consumption per capita increase by about 10 grams per day as a consequence of the death of an unemployed household member and by about 35 grams if the deceased was employed. The probability of suffering depression increased by 53% when controlling for other relevant factors. Chronic

illness negatively affected household incomes, particularly during 1998–2002, when it is estimated that it contributed to an annual loss of 5.6% of per capita income.

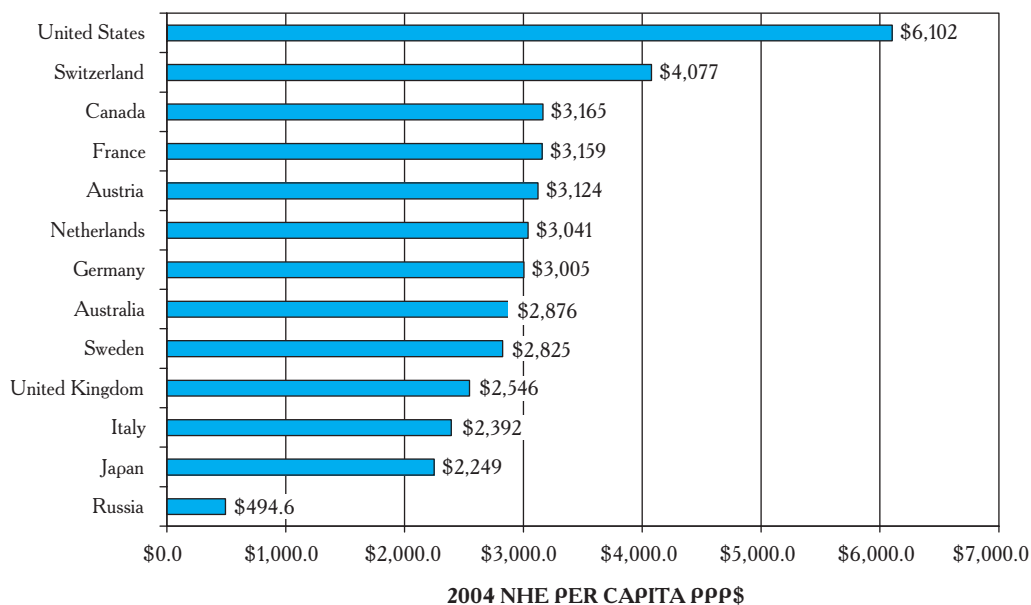
The above analysis demonstrated various channels through which health has impacted economic outcomes in the Russian Federation. In each estimate presented here, the results proved statistically significant, and where effect size could be assessed, it was considerable.

### 1.5. Low Levels of Health Care Expenditure in the Russian Federation

One way to understand the level of health spending in the Russian Federation is to compare this with health spending in other countries. Numerous empirical studies have shown that total health spending generally increases as the GDP increases. Whereas, the low- and middle-income countries (GDP <\$10,000 per person) allocate less than six percent of GDP, high-income countries spend around 7–10 percent of their GDP on health.

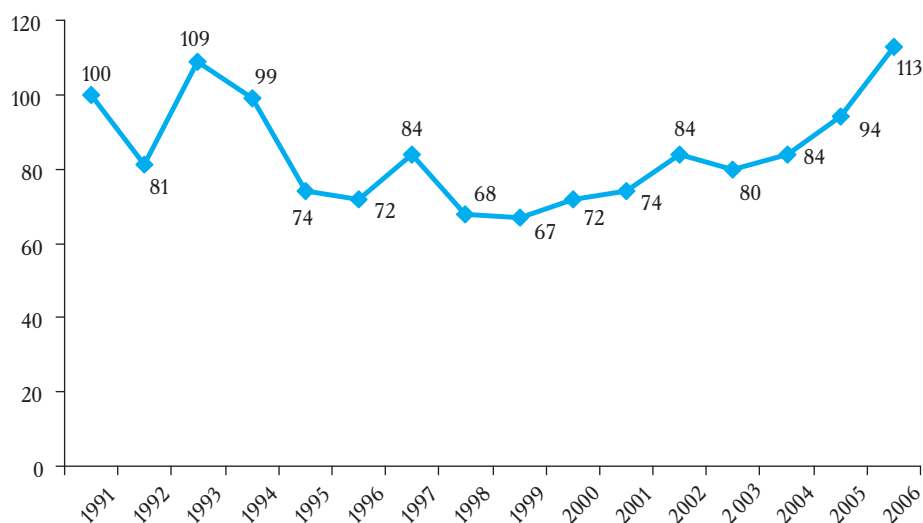
Most comparative studies on health expenditures show that the United States is an outlier amongst high-income

**Figure 3: Health care spending Per Capita US\$ PPP**



Source: OECD data 2006; for Russia, GDF and WBI, Unified Survey.

**Figure 4: Public Expenditures on Health, Russian Federation, in real terms, 1991–2006 (1991 = 100)**



Note: Includes budget and health insurance contributions.

Source: Goskomstat database using index deflators of GDP. – IET, (2007) – Russian Economy in 2006. Moscow: IET, p. 495. [http://www.iet.ru/files/text/trends/2006\\_en/2006\\_en.pdf](http://www.iet.ru/files/text/trends/2006_en/2006_en.pdf)

countries: spending 17 percent of its GDP on health care. In comparison, Russia’s total health expenditure is 5.3 percent of GDP, significantly below the levels observed in countries with similar per capita income.<sup>7</sup>

As shown on Figure 3, Russia also spends less on health in per capita terms than in other countries in the G-8 and EU countries. These findings, coupled with poor health outcomes and rapidly growing GDP suggests a large scope for increasing overall spending for health care in the Russian Federation.

In Russia, since 2001, public sector expenditures on health, measured as a share of GDP, have fluctuated between 2.7 and 3.6 percent (Figure 4). This is significantly less than the expenditures of the G-8 countries and the countries which constitute the EU-15, which typically spend 6–12 percent of their GDP on health care, and with the exception of the United States, over 75 percent from the public sector sources. However, it is important to note that public sector spending for health in Russia as a share of GDP is similar to levels observed in other middle-income countries.

<sup>7</sup> Tompson, W. 2007. “Healthcare Reform in Russia: Problem and Prospects.” OECD Economics Department Working Papers, No. 538, OECD Publishing, doi:10.1787/327014317703.

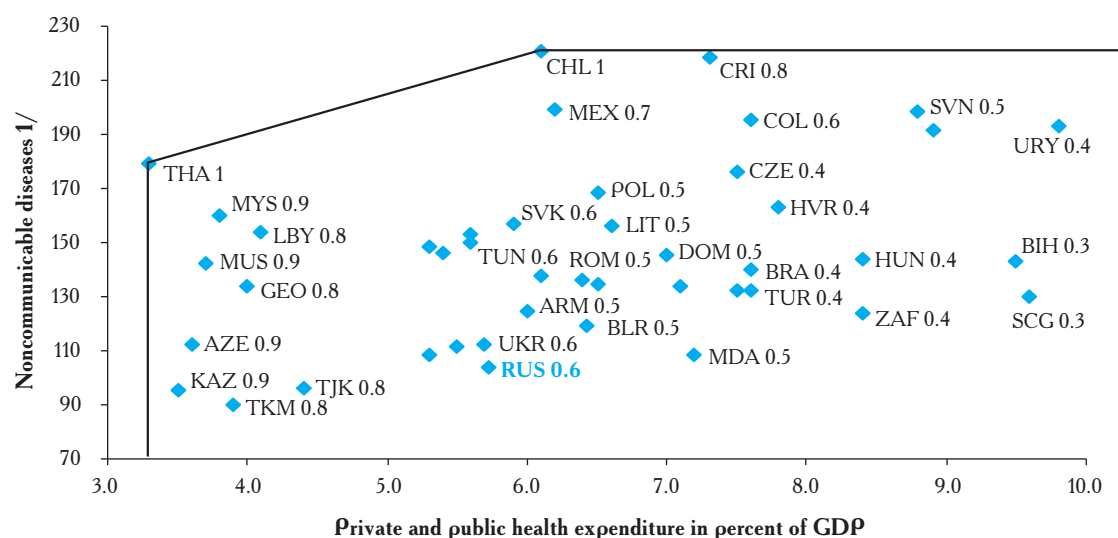
It is also interesting to compare the balance between public and private spending within the Russian Federation. In Russia, spending appears to be equally balanced between public and private spending. In most G-8 and EU countries public sector spending represents 75 percent of total health care spending, although in some of these countries it is as high as 90 percent. The large proportion of private expenditures in Russia reflects out-of-pocket payments for informal charges in health facilities and the purchase of pharmaceuticals. It also suggests a public willingness to spend more on health care services to cover shortcoming in the provision public health services, more importantly lack of outpatient drug benefits under the State Medical Guarantee Program.

### 1.6. Health care expenditures in the Russian Federation: recent trends

While health spending levels grew in most EU and G-8 countries in the 1990’s and 2000’s, spending levels on health care did not increase in the Russian Federation.

The decline in health status in the Russian Federation occurred simultaneously with decreases in public sector health care expenditures and worsening socio-economic status of the population. In the 1990s, Government ex-

**Figure 5. Efficiency of Private and Public Health Spending  
Standardized Mortality Rate Non-communicable Diseases**



Sources: Adapted from Hauner (2007); data from WHO, IMF, WEO database, and IMF staff calculations.  
1/ Inverted (following Afonso, Schuknecht, and Tanzi 2005), because better outcomes have to be reflected in higher values.

penditures for health care declined by one-third, as many secondary and rural facilities were closed and services discontinued. In real terms, health care spending rose above pre-transition levels only in 2006 with injection of resources from the National Priority Health Program of 2006–2007 period.

Rapidly rising incomes with real growth expected to average over five percent in the medium term, aging population, poor health outcomes and demands of the growing middle class will continue to put pressure on demand for health services. As a result, total and public expenditures on health as a percentage of GDP are likely to increase in Russia over the medium to long term even with efficiency gains that will need to be generated within the existing health system.

### 1.7 Health Spending and Outcomes

Combining spending and outcomes to determine the value of spending on health care can be problematic given the lack of good data on spending and outcomes in the Russian Federation. However, in spite of these limitations a recent study<sup>8</sup> assessed the efficiency of social expendi-

<sup>8</sup> Hauner, D. (2007) "Benchmarking the Efficiency of Public Expenditure in the Russian Federation." IMF Working Paper WP/07/246.

tures in the Russian Federation.<sup>9</sup> Although the comparisons of expenditure and mortality are imperfectly adjusted for factors that could affect mortality, the results suggest that health outcomes in Russia are similar to countries which spend 30–40% less on health (Figure 5). This finding suggests considerable inefficiency in the Russian Federation health system. A second implication of the findings of this report is that in order to improve health outcomes, additional resources for health care are needed but these additional resources must be accompanied by reforms to improve efficiency and effectiveness of health care organization and delivery.<sup>10</sup>

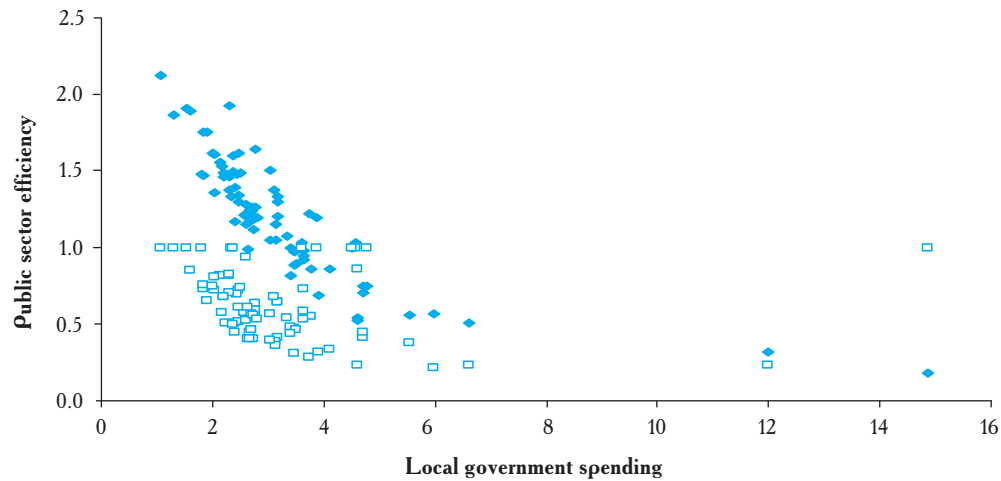
This study also suggests that, at the local government level, comparing spending and outcomes across regions, on average, the current outcomes in health could again be produced with about two-thirds of the present inputs if the less efficient regions would emulate the more efficient ones. Local governments account for about 85 percent

<sup>9</sup> The efficiency of public spending is measured by comparing actual spending with the minimum spending theoretically sufficient to produce the same actual output. Inputs are measured by public spending in specific functional areas, while outputs are represented by indicators of the impact of public spending in these areas. Health outcomes are measured by indicators such as infant mortality, life expectancy. The number of hospital beds, physicians relative to population. For local governments, public sector performance (PSP) and public sector efficiency (PSE) scores are used.

<sup>10</sup>



**Figure 6. Local Governments—  
PSP, PSE, and DEA Scores vs. Spending in Percent of GRP  
PSE (filled markers) and DEA (empty markers)  
Health**



Sources: Adapted from Hauner (2007); Rosstat; and IMF staff calculations.

of health expenditure. Local government expenditure on health varies substantially relative to gross regional product (GRP), mostly between 2 and 4 percent of GRP, but can extend to 15 percent (Figure 6).

Although local government spending as a percentage of GDP varies considerably across regions, this difference in spending does not appear to translate into materially different health outcomes. Indeed, it is important to note that whether it is health, education, or social protection, outcomes are similar, regardless of the associated level

of expenditures. This suggests large differences in efficiency among regions. Statistical measures also underscore the contrast between the small variation in public sector performance (with a coefficient of variation of only 0.10–0.17) and the much larger one in public sector efficiency (coefficient of variation is 0.38–0.42). However, observed minimum and maximum levels of public sector performance in regions reveals a remarkably wide range: 0.60–1.30 in health. In other words, public sector performance for health care is over 100 percent higher in the best region as that in the worst region.

## II. The Distributional Impact of Spending on Health Care Services

This section compares first the public and private sector spending across the regions of the Russian Federation and then the healthcare spending by regional income levels as measured by gross regional product (GRP). Analysis of spending at the regional level is of special importance because the overwhelming majority of the population receives medical care at a regional or municipal level. This is why the efforts aimed at offering high-tech and costly medical services at federal medical centers, though important, are of little consequence for the overall efficiency of public expenditures.

### 2.1. Health Care Spending by Regions of the Russian Federation

Table 2 shows the distribution of health care spending by regions of the Russian Federation. The table shows the actual level of per capita spending, and then the

amounts spent on labor and drugs. The table illustrates the considerable variation in actual per capita spending for health care: including that for healthcare labor-force and drugs.

The findings summarized in table 2 suggest that monthly per capita health expenditures vary almost 12-fold: with the expenditure in the highest spending region amounting to 255.02 RUB while that in the lowest spending region is 20.79 RUB in. Similarly, there is a large variation in actual labor spending: with almost 13-fold difference, with spending in the highest spending region at 152.58 RUB per month as compared with 11.90 RUB in the lowest spending region. The variation in drug spending is seven-fold, ranging from 40.97 RUB in the highest spending region to 5.78 RUB in the lowest spending region. Labor typically represents two thirds of spending and drugs about one fifth of total spending on health.

**Table 2. Monthly actual health expenditures per capita, by Russian Regions, 2006**

	Actual per capita expenditures		Actual labor expenditures			Actual expenditure on drugs		
	Value, USD	Value, RUB	Value, USD	Value, RUB	Percent	Value, USD	Value, RUB	Percent
Belgorod region	3.70	99.64	2.69	72.56	72,8%	0.62	16.73	16,8%
Bryansk region	3.77	101.51	2.69	72.35	71,3%	0.77	20.62	20,3%
Vladimir region	3.72	100.28	2.82	75.87	75,7%	0.65	17.38	17,3%
Voronezh region	3.86	104.00	2.50	67.41	64,8%	0.58	15.73	15,1%
Ivanovo region	3.55	95.76	2.62	70.49	73,6%	0.71	19.13	20,0%
Kaluga region	4.13	111.39	2.93	79.04	71,0%	0.83	22.27	20,0%
Kostroma region	3.61	97.32	2.43	65.59	67,4%	0.68	18.19	18,7%
Kursk region	3.15	84.74	2.12	57.25	67,6%	0.65	17.50	20,7%
Lipetsk region	4.58	123.40	3.19	86.03	69,7%	0.80	21.66	17,6%
Moscow region	4.38	117.95	3.05	82.28	69,8%	0.82	22.02	18,7%
Oryol region	3.88	104.49	2.66	71.65	68,6%	0.82	22.02	21,1%
Ryazan region	3.07	82.63	2.09	56.42	68,3%	0.70	18.77	22,7%
Smolensk region	3.30	88.85	2.39	64.32	72,4%	0.66	17.91	20,2%
Tambov region	3.34	90.03	2.57	69.27	76,9%	0.55	14.79	16,4%
Tver region	3.51	94.67	2.92	78.80	83,2%	0.38	10.37	11,0%
Tula region	3.00	80.70	1.46	39.23	48,6%	1.16	31.14	38,6%

**Table 2. Monthly actual health expenditures per capita, by Russian Regions, 2006 (continued)**

	<i>Actual per capita expenditures</i>		<i>Actual labor expenditures</i>			<i>Actual expenditure on drugs</i>		
	<i>Value, USD</i>	<i>Value, RUB</i>	<i>Value, USD</i>	<i>Value, RUB</i>	<i>Percent</i>	<i>Value, USD</i>	<i>Value, RUB</i>	<i>Percent</i>
Yaroslavl region	4.95	133.47	3.20	86.25	64,6%	0.78	20.99	15,7%
Moscow city	7.09	190.92	5.14	138.52	72,6%	0.77	20.87	10,9%
Republic of Karelia	2.51	67.64	1.53	41.23	61,0%	0.59	15.80	23,4%
Republic of Komi	3.88	104.62	2.75	74.10	70,8%	0.79	21.15	20,2%
Archangelsk region	2.60	70.15	1.93	52.06	74,2%	0.52	14.13	20,1%
Vologda region	4.33	116.69	3.18	85.72	73,5%	0.88	23.67	20,3%
Kaliningrad region	3.49	94.13	2.43	65.46	69,5%	0.76	20.59	21,9%
Leningrad region	4.67	125.74	3.55	95.68	76,1%	0.76	20.37	16,2%
Murmansk region	3.43	92.46	2.89	77.74	84,1%	0.39	10.46	11,3%
Novgorod region	4.03	108.65	2.73	73.53	67,7%	0.56	15.22	14,0%
Pskov region	3.82	102.96	2.35	63.26	61,4%	1.03	27.65	26,9%
St. Petersburg	4.81	129.51	4.14	111.54	86,1%	0.43	11.46	8,8%
Nenets Autonomous Region	3.76	101.41	2.85	76.68	75,6%	0.58	15.63	15,4%
Republic of Adygei	4.17	112.46	3.09	83.22	74,0%	0.81	21.76	19,3%
Republic of Daghestan	3.02	81.50	1.89	50.91	62,5%	0.77	20.78	25,5%
Republic of Ingushetia	1.76	47.34	1.38	37.26	78,7%	0.21	5.78	12,2%
Republic of Kabardino-Balkaria	3.50	94.17	2.41	65.00	69,0%	0.85	22.82	24,2%
Republic of Kalmykia	2.72	73.26	2.09	56.41	77,0%	0.52	13.91	19,0%
Karachai-Circassian Republic	4.26	114.86	2.88	77.53	67,5%	1.07	28.80	25,1%
Republic of Northern Ossetiya-Alaniya	3.01	81.05	1.67	44.94	55,4%	1.06	28.43	35,1%
Chechen Republic	0.77	20.79	0.01	0.15	0,7%	0.53	14.32	68,9%
Krasnodar Territory	3.88	104.65	2.34	63.09	60,3%	1.22	32.95	31,5%
Stavropol Territory	3.35	90.15	2.22	59.91	66,5%	0.92	24.69	27,4%
Astrakhan Territory	2.84	76.44	1.95	52.62	68,8%	0.50	13.44	17,6%
Volgograd Territory	3.43	92.28	2.47	66.68	72,3%	0.60	16.24	17,6%
Rostov region	4.46	120.14	2.51	67.66	56,3%	1.08	29.01	24,1%
Republic of Bashkortostan	4.02	108.43	2.46	66.29	61,1%	0.64	17.12	15,8%
Republic of Mari El	3.47	93.62	1.84	49.56	52,9%	0.82	22.07	23,6%
Republic of Mordovia	3.17	85.53	1.24	33.36	39,0%	1.24	33.47	39,1%
Republic of Tatarstan	4.61	124.16	3.44	92.80	74,7%	0.79	21.41	17,2%
Republic of Udmurtia	2.82	75.96	0.97	26.22	34,5%	1.22	32.91	43,3%
Republic of Chuvashia	2.69	72.53	1.63	43.99	60,7%	0.83	22.29	30,7%
Kirov region	3.42	92.21	2.19	59.03	64,0%	0.92	24.84	26,9%
Nizhny Novgorod region	4.56	122.79	2.82	76.04	61,9%	1.25	33.71	27,5%
Orenburg region	4.47	120.53	2.85	76.91	63,8%	0.70	18.73	15,5%
Penza region	3.24	87.36	2.34	63.12	72,3%	0.68	18.19	20,8%
Perm region	2.94	79.22	2.14	57.57	72,7%	0.57	15.23	19,2%
Samara region	3.23	86.96	2.28	61.33	70,5%	0.64	17.22	19,8%
Saratov region	2.56	69.10	1.45	39.00	56,4%	0.69	18.71	27,1%
Ulyanovsk region	2.71	73.05	0.84	22.72	31,1%	1.48	39.83	54,5%

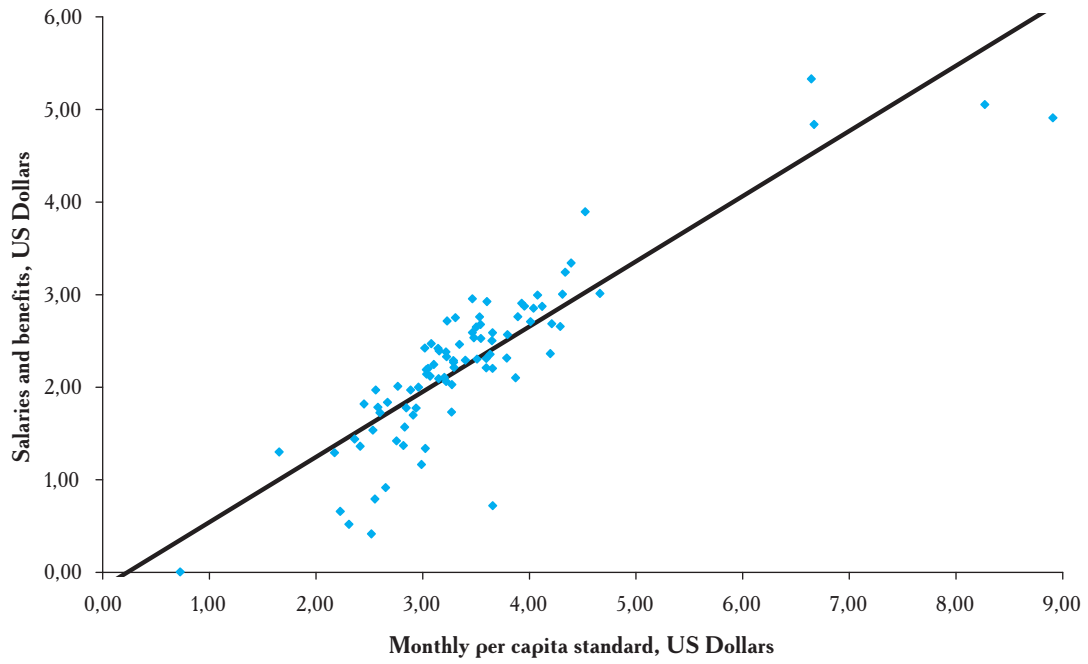
**Table 2. Monthly actual health expenditures per capita, by Russian Regions, 2006 (continued)**

	Actual per capita expenditures		Actual labor expenditures			Actual expenditure on drugs		
	Value, USD	Value, RUB	Value, USD	Value, RUB	Percent	Value, USD	Value, RUB	Percent
Komi-Perm Autonomous Region	3.22	86.83	2.33	62.71	72,2%	0.60	16.08	18,5%
Kurgan region	3.40	91.69	2.24	60.27	65,7%	0.92	24.70	26,9%
Sverdlovsk region	3.48	93.72	2.16	58.07	62,0%	1.03	27.88	29,7%
Tyumen region	9.47	255.02	5.22	140.54	55,1%	1.38	37.25	14,6%
Chelyabinsk region	3.21	86.44	2.57	69.36	80,2%	0.49	13.28	15,4%
Khanty-Mansi Autonomous Region	3.89	104.69	0.77	20.66	19,7%	1.52	40.97	39,1%
Yamalo-Nenets Autonomous Region	4.11	110.82	2.23	60.20	54,3%	0.87	23.56	21,3%
Republic of Altai	3.12	84.10	1.89	50.80	60,4%	0.91	24.44	29,1%
Republic of Buryatia	3.73	100.45	2.45	65.94	65,6%	0.80	21.48	21,4%
Republic of Tyva	2.31	62.22	1.37	37.03	59,5%	0.49	13.33	21,4%
Altai Territory	3.50	94.26	2.35	63.37	67,2%	1.01	27.31	29,0%
Krasnoyarsk Territory	3.35	90.32	2.54	68.53	75,9%	0.62	16.71	18,5%
Irkutsk region	2.76	74.41	1.83	49.40	66,4%	0.52	14.00	18,8%
Kemerovo region	3.76	101.18	2.93	79.03	78,1%	0.61	16.35	16,2%
Novosibirsk region	4.29	115.61	3.03	81.69	70,7%	0.93	25.03	21,7%
Omsk region	3.21	86.57	1.42	38.33	44,3%	1.19	31.97	36,9%
Tomsk region	3.42	92.16	2.53	68.19	74,0%	0.66	17.83	19,3%
Chita region	2.45	66.10	0.55	14.87	22,5%	0.82	22.08	33,4%
Agee-Buryat Autonomous Region	2.93	78.88	1.51	40.70	51,6%	1.24	33.47	42,4%
Taimyr Autonomous Region	7.06	190.19	5.66	152.58	80,2%	0.77	20.76	10,9%
Ust-Orda Buryat Autonomous Region	3.09	83.33	1.81	48.68	58,4%	1.11	29.96	36,0%
Evenko Autonomous Region	2.68	72.12	0.44	11.90	16,5%	1.49	40.25	55,8%
Republic of Sakha (Yakutia)	4.20	113.17	3.06	82.32	72,7%	0.79	21.40	18,9%
Maritime Territory	3.27	88.20	2.63	70.73	80,2%	0.32	8.63	9,8%
Khabarovsk Territory	3.68	99.21	3.14	84.61	85,3%	0.35	9.52	9,6%
Amur region	3.82	102.96	2.46	66.17	64,3%	1.02	27.61	26,8%
Kamchatka region	3.83	103.15	3.11	83.76	81,2%	0.43	11.57	11,2%
Magadan region	3.26	87.89	2.25	60.72	69,1%	0.74	19.97	22,7%
Sakhalin region	2.37	63.77	0.70	18.88	29,6%	1.22	32.97	51,7%
Jewish autonomous region	3.68	99.25	2.75	74.17	74,7%	0.80	21.43	21,6%
Koryak Autonomous Region	2.74	73.86	1.90	51.07	69,1%	0.49	13.13	17,8%
Chukotka Autonomous Region	8.79	236.74	5.37	144.68	61,1%	0.81	21.76	9,2%
<b>Average</b>	<b>3.67</b>	<b>98.93</b>	<b>2.41</b>	<b>65.04</b>	<b>65.2%</b>	<b>0.79</b>	<b>21.36</b>	<b>22.7%</b>
<b>Minimum value</b>	Evenko A.A.			<b>11,90</b>	Rep. Ingushetia		<b>5,78</b>	
<b>Maximum value</b>	Taimyr A.A.			<b>152,58</b>	Khanty-Mansi A.A.		<b>40,97</b>	

Notes: Coefficients of variation are 21,3% for actual labor expenditures and 42,3% for actual drugs expenditures.

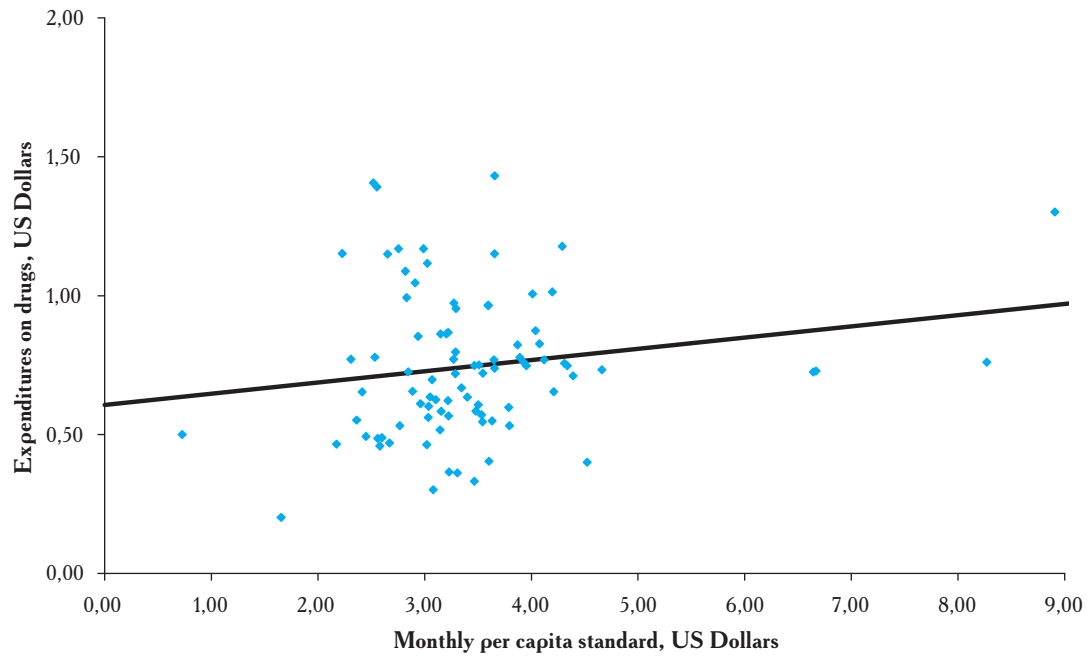
Source: Form 62 on Regions for 2006 (MOHSD Federal Foundation of MHI).

**Figure 7. Labor expenditures in the health sector and monthly per capita expenditure under the mandatory health insurance (MHI) program, 2006**



Source: Authors calculation using data from Form 62 on Regions for 2006 (MOHSD Federal Foundation of MHI).

**Figure 8. Drugs expenditures in the health sector and monthly per capita expenditure under the mandatory health insurance (MHI) program, 2006**



Source: Authors calculation using data from Form 62 on Regions for 2006 (MOHSD Federal Foundation of MHI).

Because approximately two-thirds of spending is for labor, it is important to focus on both increases in and the relative proportion of overall spending on labor. Recently, considerable funds have been allocated for raising the salaries of medical staff in the Russian Federation, particularly under the National Priority Health Project over 2006–2008. Figure 7 shows a strong correlation between overall payroll expenditures and per capita health spending in the region. Regions with higher levels of expenditure have both higher payroll expenditures and a larger share of overall expenditures devoted to payroll.

While there is strong correlation between overall payroll expenditures and per capita health spending in a region, there is not the same correlation between overall drug expenditures and per capita health spending in a region as shown in Figure 8. However, given the underreporting of out-of-pocket drug spending by patients, the data shown in Figure 8 should be viewed with caution.

## 2.2. Distribution of health care spending by income deciles by region

Table 3 shows the relationship between per capita income and health spending by region. The regions are

divided into deciles based on per capita government spending. The results show substantial regional variation in per capita expenditures for health: from a minimum of US\$54.22 (1460.76 RUB) in the Republic of Dagestan to maximum of US\$556.76 (15,000.48 RUB) in the Evenki Autonomous Region (Krasnoyarsk Territory). The largest values are for Northern regions with oil, gas, gold and extractive industries with very small population. The coefficient of variation is equal to 30.3 percent.

Figure 9 shows the distribution of health spending by source of funds, both budget transfers and mandatory health insurance (MHI) contributions. The Gini coefficient for all spending in Figure 9 is 0.234: suggesting an uneven distribution of health spending across the Russian regions. Countries with universal coverage and relatively easy access to health care services have a Gini coefficient in the 0.1 range while middle income countries such as Mexico have Gini coefficients similar to the Russian Federation. The challenge for the Russian Federation is to make access to health care less dependent on the ability to pay for medical care. A Gini coefficient is a measure of statistical dispersion most prominently used as a measure of inequality of wealth distribution. It is defined as a ratio with val-

**Table 3. Per capita public health expenditures and income deciles, by region, 2006**  
(Adjusted by differences in the cost of goods and services and goods in the regions as done by Ministry of Finance)

Region	Public per capita health expenditure		Decile	Region	Public per capita health expenditure		Decile
	RUB	US Dollars			RUB	US Dollars	
Belgorod region	4202,18	155,97	4	Republic of Tartarstan	4463,93	165,68	5
Bryansk region	3413,06	126,68	2	Republic of Udmurtia	4311,90	160,04	4
Vladimir region	2544,55	94,44	1	Republic of Chuvashia	3725,00	138,26	2
Voronezh region	3083,37	114,44	1	Kirov region	3323,37	123,35	2
Ivanovo region	2986,52	110,85	1	Nizhny Novgorod region	3432,81	127,41	3
Kaluga region	3597,53	133,53	3	Orenburg region	4435,30	164,62	5
Kostroma region	3424,34	127,10	1	Penza region	3414,19	126,72	2
Kursk region	2968,46	110,18	1	Perm region	3446,60	127,93	4
Lipetsk region	5857,88	217,42	7	Samara region	3157,87	117,21	4
Moscow region	5559,42	206,35	8	Saratov region	3149,19	116,89	1
Oryol region	3221,71	119,58	1	Ulyanovsk region	3979,77	147,71	4
Ryazan region	3105,06	115,25	1	Komi-Perm Autonomous Region	3395,60	126,03	3
Smolensk region	3111,79	115,50	1	Kurgan region	4300,45	159,62	5

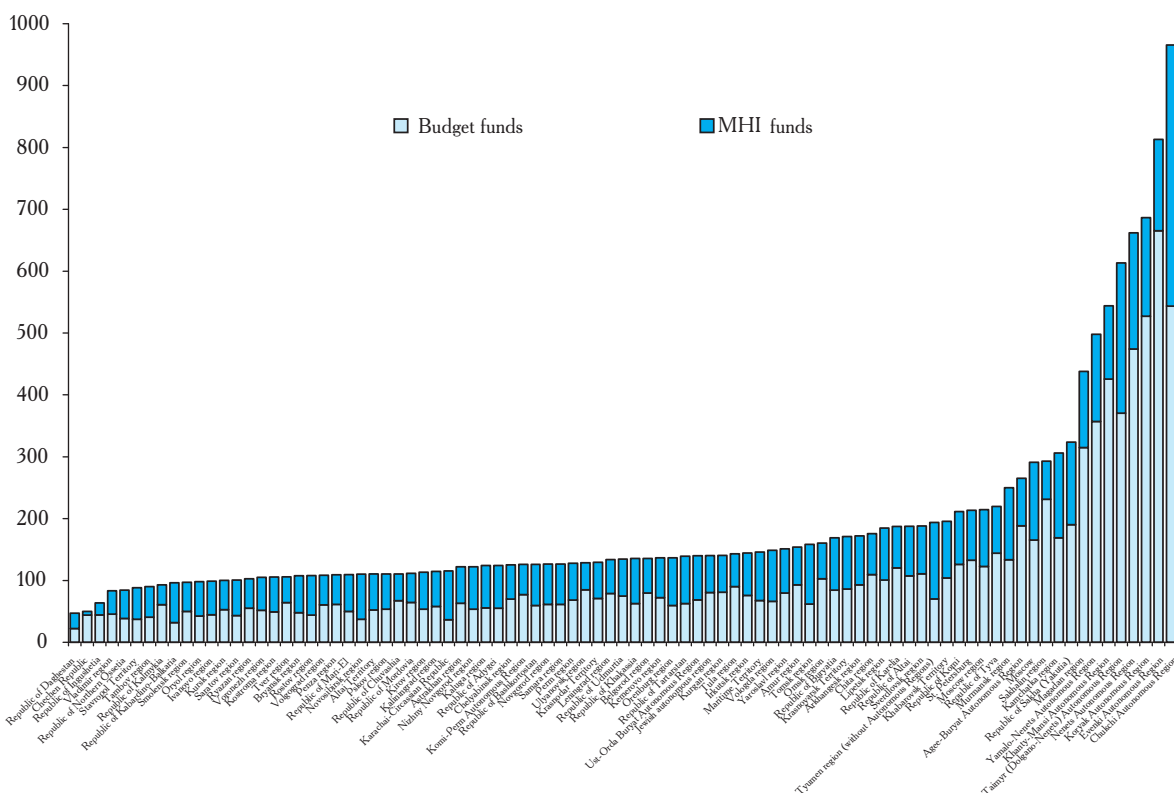


**Table 3. Per capita public health expenditures and income deciles, by region, 2006 (continued)**

Region	Public per capita health expenditure		Decile	Region	Public per capita health expenditure		Decile
	RUB	US Dollars			RUB	US Dollars	
Tambov region	2920,48	108,40	1	Sverdlovsk region	5333,47	197,96	7
Tver region	3039,68	112,82	1	Tyumen region (without Autonomous Regions)	4243,82	157,52	7
Tula region	4432,41	164,52	5	Chelyabinsk region	3791,12	140,71	3
Yaroslavl region	4578,43	169,93	6	Khanty-Mansi Autonomous Region	10695,55	396,98	10
Moscow	5260,87	195,26	9	Yamalo-Nenets Autonomous Region	8769,48	325,49	10
Republic of Karelia	5313,26	197,21	7	Republic of Altai	5210,21	193,38	7
Republic of Komi	4910,26	182,25	7	Republic of Buryatia	4103,51	152,31	6
Arkhangesk region	4415,43	163,88	6	Republic of Tyva	6031,63	223,87	8
Vologda region	4175,73	154,99	6	Republic of Khakassia	3846,84	142,78	4
Kaliningrad region	2884,95	107,08	3	Altai Territory	3268,13	121,30	2
Leningrad region	3607,60	133,90	4	Krasnoyarsk Territory	4387,24	162,84	6
Murmansk region	5062,11	187,89	8	Irkutsk region	4015,26	149,03	5
Novgorod region	3782,78	140,40	3	Kemerovo region	4135,28	153,49	5
Pskov region	3458,95	128,38	2	Novosibirsk region	3089,38	114,67	2
St. Petersburg	5424,81	201,35	8	Omsk region	5144,52	190,95	6
Nenets Autonomous Region	10808,00	401,15	10	Tomsk region	3873,73	143,78	6
Republic of Adygei	3561,81	132,20	3	Chita region	4979,47	184,82	6
Republic of Daghestan	1510,36	56,06	1	Agee-Buryat Autonomous Region	7294,59	270,75	8
Republic of Ingushetia	1863,80	69,18	1	Taimyr (Dolgano-Nenets) Autonomous Region	10329,31	383,39	10
Republic of Kabardino-Balkaria	3088,21	114,62	1	Ust-Orda Buryat Autonomous Region	4141,98	153,74	5
Republic of Kalmykia	2874,37	106,69	1	Evenki Autonomous Region	15000,48	556,76	10
Karachai-Circassian Republic	3611,86	134,06	3	Republic of Sakha (Yakutia)	6139,93	227,89	10
Republic of Northern Ossetia	2801,60	103,99	1	Maritime Territory	3049,22	113,18	5
Chechen Republic	1460,76	54,22	1	Khabarovsk Territory	3933,28	145,99	7
Krasnodar Territory	3587,94	133,17	4	Amur region	3547,78	131,68	6
Stavropol Territory	2426,84	90,08	1	Kamchatka region	4737,07	175,82	10
Astrakhan region	3782,18	140,38	3	Magadan region	8616,93	319,83	10
Volgograd region	3285,51	121,95	2	Sakhalin region	4992,66	185,31	10
Rostov region	3126,88	116,06	2	Jewish autonomous region	3286,78	121,99	5
Republic of Bashkortostan	4044,88	150,13	3	Koryak Autonomous Region	9683,09	359,40	10
Republic of Mari-El	3733,16	138,56	2	Chukchi Autonomous Region	12099,49	449,09	10
Republic of Mordovia	3535,76	131,23	2	<b>Weighted mean</b>	<b>4074,88</b>	<b>151,24</b>	
				<b>Minimum value</b>	<b>1460,76</b>	<b>54,22</b>	
				<b>Maximum value</b>	<b>15000,48</b>	<b>556,76</b>	

Source: <http://www.socpol.ru/baza/baza/pokazately.shtml>.

**Figure 9: Distribution of Health Spending by Regions and Source of Funds, 2006 (US\$)**



Source: Site of Independent Institute of Social Policy:  
<http://www.socpol.ru/baza/baza/pokazately.shtml>

ues between 0 and 1: A low Gini coefficient indicates more equal income or wealth distribution, while a high Gini coefficient indicates more unequal distribution. 0 corresponds to perfect equality (everyone having exactly the same and 1 corresponds to perfect inequality (where one person has all the income while everyone else has zero income).

Table 4 shows that the main reason for the large variation in per capita spending on health is the large variation of per capita income among the regions. That is, regions with higher per capita incomes have higher levels of health care spending.

**Table 4. Per capita funding of regional medical guarantee program, 2006**

Deciles	Size of the population	Average per capita funding of the regional medical guarantee program, US Dollars
1	24 042	91
2	19 676	112
3	17 852	123
4	16 494	133
5	15 477	142
6	13 719	160
7	11 586	190
8	10 328	213
9	8 576	256
10	5 809	378

Source: Site of Independent Institute of Social Policy  
<http://www.socpol.ru/baza/baza/pokazately.shtml>

### 2.3. Outcomes by Region

Russian adults living in the most affluent regions are expected to live on average 20 years longer than those in the poorest region. The NOBUS survey of 2003 also found that individuals in the poorest quintiles in Russia were more likely to self-report bad or very bad health status than those in richer quintiles (Table 5).

**Table 5. Self Reported Health Status, by Consumption Quintile, 2003**

Consumption quintile	Percentage of survey respondents reporting health status as		
	Good or very good	Satisfactory	Bad or very bad
1 Poorest	38	16	47
2	39	20	41
3	39	20	41
4	43	21	35
5 Richest	52	20	28

Source: NOBUS 2003.

Utilization of health care resources is positively correlated with income. Table 6 shows that there is a two to one difference in the proportion of respondents who used medical care in the last three months between those in the highest and lowest income deciles. This suggests differential levels of access to medical care by income.

**Table 6. Percent of respondents who used medical care in the preceding three months**

Mean	34.4
Income Deciles	
Lowest 10%	23.5
Highest 10%	35.9
Not Poor	35.6
Poor	22.8

Source: Rosstat, 2007.

### 2.4. Distribution of Spending By Type of Health Service

It is generally agreed that inpatient care consumes too large a proportion of health spending and outpatient care too low a proportion in the Russian Federation. In most European Union and G-8 countries the percentage is between 30 and 40 percent. Table 7 shows that in Russia, inpatient care consumes between 59 and 64 percent of public health spending. However, the percentage has been declining and this suggests a transition towards more appropriate spending distributions.

**Table 7. Public expenditures on health care (percentage)**

	2001	2002	2003	2004	2005	2006	2007
Ambulance	5.5	6.7	6.0	6.3	6.6	6.9	7.2
Outpatient	29.0	30.6	31.3	30.6	29.8	29.9	31.4
Inpatient	64.0	60.0	60.3	60.5	60.7	60.4	58.7
Day care	1.5	2.7	2.4	2.6	2.9	2.8	2.7
<b>Total:</b>	100	100	100	100	100	100	100

Note: These data are from Form 62 (MOHSD, FF MHII). Form 62 is the only reporting document of hospitals and polyclinics which contains expenditures. These forms are aggregated for the Russian Federation as a whole. These figures are average figures.

Source: Starodubov V.I., Flek V.O. "Financing of Result-Oriented Health Care for the Russian Federation Population" / V.I. Starodubov (ed.). Moscow, MTsFER, 2007, 400 pp., Form 62 on regions for 2006 and 2006 (MOHSD, Federal Foundation of MHI)

A number of explanations have been proposed to why inpatient spending is so large a proportion of total spending and why it has been declining. The explanations include:

- A high number of hospital beds per citizen. The network of medical institutions is reforming very slowly, inpatient clinics even those in surplus are often not closed down, and the administration tries to make use of all the beds. Such means include: hospitalization of patients who could do without, extra long hospital stays, and hospitalization of patients whose medical conditions could be treated on an ambulatory basis.
- A higher perceived skill level of specialists at inpatient facilities as compared to outpatient ones. Patients try to get to a hospital just because the doctors are perceived to be better there.

- Low income population groups prefer hospitals because drugs are provided free of charge for inpatient care albeit not everywhere.

These problems are well known to health care managers and policy makers and they have initiated reforms aimed at changing health care structures and process, as well incentives, at the regional health systems. For example, outpatient clinics have been equipped with state-of-the-art equipment funded by the government and the salaries of the primary care staff have increased considerably. In response to these and other initiatives the percentage of spending devoted to inpatient care fell from 64% in 2000 to 58.7 percent in 2007.

### 2.5. Household Payments for Medical Drugs

Recent survey data from 2006 in the Russian Federation indicate that about 95 percent of the respondents who purchased medical drugs in the last three months paid out of pocket for their purchase. The percentage of those who paid out of pocket ranges from a low of 82.5 percent for the elderly over 65 years old to a high of 99.5 percent for employed people. The elderly, the less educated and those not in the labor force tend to receive free drugs or are entitled to a drug benefit (*igoti*). Overall, out of pocket expenditure for pharmaceuticals is very high in Russia. It is also inequitable as differences between the lowest and the highest income groups, the poor and the non-poor, urban and rural, household size and age groups are minimal.

The percent of respondents who used medical care is slightly less than the percent that used pharmaceuticals (34.4% versus 37.1%). About three percent use pharmaceuticals without seeking medical care from a health services provider. Two patterns emerge from the analysis of the survey data comparing use of medical care and use of pharmaceuticals. First, some population groups use pharmaceuticals much more often than they use medical care. This is the case for the highest income decile, the non-poor, the elderly, people living alone, and professionals. However this may result from a difference in the interpretation of the term “use” i.e. a drug may be used every day but a medical visit occurs less frequently. Second, some population groups use medical care more often than they use pharmaceuticals. This is especially true for the poor, the rural population, the younger age groups (0–15 and 15–24), the less

educated, the large households and the unemployed, that reflect financial barriers for the purchase of pharmaceuticals.

In light of the high out of pocket payments for drugs illustrated in the previous paragraph, this may indicate a financial barrier to purchasing pharmaceuticals for these population groups. As discussed elsewhere<sup>11</sup>, a key challenge facing the Russian health system is the relative lack of public sector funding at its disposal to cover the cost of services that are already promised by the Government under the Program of State Guarantees of free medical services to the whole population. There is a gap between health care commitments and funding in Russia when it comes to financing pharmaceuticals provision. Drugs are in theory provided to hospital patients free of charge, but outpatients must pay for them even though outpatient drugs should be covered for the special group of beneficiaries (16.9 million people) under the Federal “Program of Supplementary Drug Provision”. Beneficiaries have to pay for what they are supposed to receive free. Informal cost-sharing is pervasive in the hospital sector. It is assumed therefore that a substantial proportion of the demand for pharmaceuticals in Russia simply goes unmet.<sup>12</sup>

All the above implies that the medical benefits package under the Mandatory Health Insurance System in the Russian Federation needs to be revised to avoid unsustainable commitments and to ensure that it does not create incentives to choose more expensive health care services.<sup>13</sup> This is the current situation with the absence of coverage for outpatient drugs as patients in need of medicines to control their alignments at an early stage (e.g., hypertensives who have to take medications on a daily basis) might simply be deterred from accessing them and may end up requiring more expensive medical care later on (e.g., unnecessary hospital admissions and treatment due to strokes).

<sup>11</sup> World Bank. 2008. “Better Outcomes through Health Reforms in the Russian Federation: The Challenge in 2008 and Beyond.” Washington, D.C.: The World Bank.

<sup>12</sup> Tragakes, E. and S. Lessof. 2003. Health Care Systems in Transition: Russian Federation. Copenhagen: European Observatory on Health Systems and Policies.

<sup>13</sup> Tompson, W. 2007. Healthcare Reform in Russia : Problems and Prospects, OECD Economic Department Working Papers, NO.538, OECD Publishing. Doi:10.1787/327014317703.

## *2.6. Uses of Medical Services by Income Group*

Analysis of data from different surveys show that higher income groups use health services more often than the poor. Regression analysis of RLMS 2004 data, level of income is the next factor in importance in determining use of health services after the health status.

With income growth, the probability of using medical services increases: the rich (the fifth quintile) would use medical services 37 percent more frequently than the poor (the first quintile).<sup>14</sup>

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<sup>14</sup> See [http://www.socpol.ru/eng/research\\_projects/pdf/proj25\\_report\\_eng.pdf](http://www.socpol.ru/eng/research_projects/pdf/proj25_report_eng.pdf).

### III. Factors that will influence the growth in health spending over the next 20 years and considerations for guiding the allocation of additional resources

Before analyzing the projections of health spending, it is important to examine recent trends in health spending as the past is a good predictor of future health spending. Table 8 shows the trends in health care spending and other data for the period from 2002

to 2005. It shows a declining population, increasing budgetary spending in current and constant rubles, increasing MHI spending in current and constant rubles, and increasing out-of-pocket spending in current and constant rubles.

**Table 8. Estimation of health care funding trends, different sources and years**

	2002	2003	2004	2005	Trend	R <sup>2</sup>
Size of the population (M)	145.3	144.6	143.8	143.1		
Consumer price deflators	1.158	1.137	1.109	1.127		
Budget expenditures per capita in current prices, RUB	1120	1245	1508	1763		
Budget expenditures per capita in current prices, US Dollars	35.56	40.98	51.92	61.58		
Budget expenditures per capita in 2005 prices, RUB	1592	1556	1699	1763	66	0.79
Budget expenditures per capita in 2005 prices, US Dollars	50.54	51.22	58.49	61.58		
MHI expenditures per capita in current prices, RUB	860	1042	1293	1513		
MHI expenditures per capita in current prices, US Dollars	27.30	34.30	44.51	52.85		
MHI expenditures per capita in 2005 prices, RUB	996	1185	1434	1705	238	0.99
MHI expenditures per capita in 2005 prices, US Dollars	31.62	39.00	49.37	59.56		
Other public expenditures per capita in current prices, RUB	172.00	250.50	340.20	672.40		
Other public expenditures per capita in current prices, US Dollars	5.46	7.95	10.80	21.35		
Other public expenditures per capita in 2005 prices, RUB	244.49	313.07	383.29	672.40		
Other public expenditures per capita in 2005 prices, US Dollars	7.76	9.94	12.17	21.35		
Actual expenses from personal funds (RUB, mn)	199991.8	243218.0	293595.7	352763.6		
Actual expenses from personal funds (US Dollars, M)	6348.9	8005.6	10107.6	12322.2		
Actual per capita expenses from personal funds in 2005 prices, RUB	1956	2102	2301	2465	173	1.00
Actual per capita expenses from personal funds in 2005 prices, USD	62.09	69.19	79.22	86.10		

Source: Starodubov V.I., Flek V.O. "Financing of Result-Oriented Health Care for the Russian Federation Population" / V.I. Starodubov (ed.). Moscow, MTsFER, 2007, 400 pp.



### 3.1. What are the main drivers of health and long-term care expenditures globally?

Public spending on health and long-term care is a major source of fiscal pressure globally. A recent OECD assessment of its member countries identified the following main forces driving health and long-term spending<sup>15</sup>:

- *Health care, demographic factors: a rising share of older age groups in the population will put upward pressure on costs because health costs rise with age. However, the average cost per individual in older age groups should fall over time for two reasons: (i) longevity gains are assumed to translate into additional years of good health (“healthy aging”); and (ii) major health costs come at the end of life.*
- *Health care, non-demographic factors: health care costs have typically grown faster than income (even as incomes have increased). This is generally held to be due to the effect of technology and relative-price movements in the supply of health services. Besides “cost pressures” there is “cost containment” policy action to curb “extra” expenditures growth.*
- *Long-term care, demographic factors: dependency on long-term will tend to rise as the share of old people in the population increase. This effect is mitigated somewhat by the likelihood that the share of dependents per older age group will fall as longevity increases due to “healthy aging.”*
- *Long-term care, non-demographic factors: expenditures likely to be pushed up by a possible effect of increases in the relative price of long-term care in line with average productivity growth in the economy.*

### 3.2. Increasing Level of Funding for Health in the Russian Federation: Key Challenges

A key challenge facing the Russian health system is the relative lack of public sector funding at its disposal to cover the cost of services that are already promised by the Government under the Program of State Guarantees of free, medical services to the whole population.

<sup>15</sup> OECD. 2006. Projecting OECD Health and Long-Term Care Expenditures: What are the Main Drivers? Economics Department Working Papers No. 477. Paris: OECD.

The content of the package is quite extensive for a country that spends a relatively low share of GDP on health care. Access to health care has been compromised consistently over the last 15 years as available resources have been insufficient to cover the guaranteed package (only in 2006 health care funding exceeded the formally calculated cost of this program). Indeed, Russia probably needs to spend more on health care than it currently does, and the major long-term drivers of health care spending — rising incomes,<sup>16</sup> technological change and demographic change — all point to a significant, long-term rise in health care expenditure. It is reasonable to assume that part of this increase could and should be met by public provision of health service that is likely to remain an important pillar of the system, despite the expected growth of private provision and finance.

The impact of demography will be particularly important. As noted above, the Russian population is aging fast: the proportion of the population above the age of 60 is projected to rise from 17 percent in 2005 to 31 percent by 2050. Since health care spending per capita on pensioners (women over 55 and men over 60) is typically estimated to be roughly triple the level for working-age adults and double the level for children, the system will come under enormous pressure with aging unless the healthy life expectancy of Russians increases. Russian women, in particular, tend to suffer much worse health than either Russian men or western women, and the gap increases with age. This is one reason why the success of reform of the health care system will depend on broader initiatives aimed at improving Russians’ health conditions. Unless healthy life expectancy (HLE) increases, the system risks becoming overburdened by a rapidly aging, increasingly ill population.

Given the above considerations, then the question that needs to be answered is *how much should Russia spend on health, given its current epidemiological profile relative to its desired level of health status, considering the effectiveness of health inputs that would be purchased at existing prices, and taking into account the relative value and cost of other demands on social resources?*<sup>17</sup> Two approaches could be used to address

<sup>16</sup> In both OECD and emerging market economies, health care expenditure exhibits a tendency to rise faster than real GDP.

<sup>17</sup> A good discussion on this topic is presented in: Savedoff, W.D. “What Should a Country Spend on Health Care?”, Health Affairs 26, no.4(2007):962–969.

this question: (i) *a peer approach*, focusing on whether a country is spending more or less than countries with similar characteristics, such as income levels, cultures, or epidemiological profiles, accepting that the relationship between health spending and health outcomes is difficult to specify and aiming instead to learn from comparable experiences; and (ii) *a budget approach*, that aims to identify the desired health status changes and determine what needs to be purchased with an given level of financial resources by directly focusing on the issues of current and desired health status, prices, effectiveness, and trade-offs.

Following the “peer approach”, probably the Russian Government would need to gradually increase aggregate public funding on health above the current 3–5 percent of GDP level in 2006 to a 4.5–6.0 percent of GDP level as in other middle-income countries within the next five to twelve years (Table 9). This, if achieved, is a reasonable rate of increase. Too rapid an increase will result in inflation and an inability of the health care system to absorb the resources efficiently. As noted earlier, the level of spending in the Russian Federation is below the international average for a country with this level of income and also the public sector component of spending is below the international norms. Spending more on health care in Russia is justified in large measure by the massive past under-spending that needs to catch up and generate outcome improvements while structural reform and behavioral change and efficiency gains take time to materialize.

Private spending is also expected to increase from the current 1.8 percent of GDP to 2.5–3 percent of GDP in the long term. Russia’s health care system in the long term should rely on both strong public sector core and rising a private sector provision and finance pillar.

**Table 9: Russia: Projected Public Expenditures on Health, 2008–2020 (average annual percentage of GDP)**

2006–2007	2008–2010	2011–2015	2016–2020
3.5	4.5	5.5	6

Source: Authors estimations.

The increase in public expenditures would help to address some long-standing problems: (i) raise the base

salaries of physicians and nurses, (ii) introduce incentives for improving performance by differentiating remuneration depending on the volume and quality of health services; (iii) ensure free drug provision for hospital care and fund targeted outpatient drug programs for children and the elderly, and (iv) rehabilitate health facilities, replace outdated equipment and train personnel.<sup>18</sup>

### 3.3. Where should additional public resources come from?

The short answer to this question is from improved composition of public expenditures toward long-term needs of social sectors such as health, education and pensions and away from less productive categories of public expenditures (e.g., untargeted subsidies and transfers, general administration expenditures and unproductive public investments). As the Russian health care financing system is based mostly on general budget revenue rather than on earmarked payroll taxes, mechanisms should also be explored to raise additional funding from regional budgets – as contributions to mandatory health insurance (MHI) of the non-working population. Another area that merits further analysis is the channeling of additional private expenditures for health through the development of voluntary health insurance (VHI) to complement MHI.

### 3.4. How to allocate additional financial resources for health care?

It should be clear that any discussion on future spending on health in the Russian Federation has to depart from an understanding of the moral values or distributive ethic guiding the health system. That is, unless the ethical goals of the system are articulated in terms of whether health care is a pure social good to be available to all on equal terms, a pure social good for all but a small moneyed elite, or a private consumption good like food or housing, the minimum expenditure of real resources needed to achieve those goals cannot be defined.<sup>19</sup>

<sup>18</sup> For a detailed discussion see Vishnevskiy, A.G., Y.I. Kuzminov, V.I. Shevskiy, I.M. Sheiman, S.V. Shishkin, L.I. Yakobson, E.G. Yasin. 2007. “Russian Healthcare: Way Out of Crisis.” [Авторы: Вишневецкий А.Г., Кузьминов Я.И., Шевский В.И., Шейман И.М., Шишкин С.В., Якобсон Л.И., Ясин Е.Г. Российское здравоохранение: как выйти из кризиса Доклад Государственного университета – Высшая школа экономики]. Moscow: Report of State University – High School of Economics. Mimeo.

<sup>19</sup> Presentation by Prof. Uwe Reinhart at the Opening Session of the European Health Ministers Meeting in Tallinn, Estonia, that was organized by WHO-EURO on June 24–27, 2008.

Following the second approach to address the question “*what should Russia spend on health care*”, one could conclude that the short and medium term challenge is to allocate additional funding for health effectively and efficiently in order to operationalize the universal coverage mandate of the Russian Constitution. As noted earlier, there is considerable regional variation in spending and efficiency. One possibility is to define a minimum set of services and then allocate resources to insure that all regions have the necessary resources to provide a guaranteed minimum level of services following evidence-based clinical standards. As shown by the experience under the

UK’s National Health Service, and in middle-income countries such as Brazil and Chile, there are a number of complementary ways to achieve this objective.

The starting point could be the development of standards targeting high priority disease areas in terms of high burden of disease and capacity to benefit; high unwarranted variation across socioeconomic groups and regions; and high spending clinical areas. The World Bank report “Dying Too Young” provides arguments to concentrate on tackling NCD, particularly cardiovascular diseases, cancer, cancer, diseases of the digestive

### Box 1: Priority Setting and Health Spending in the UK in the 2000s

The NHS Plan, published in 2000, followed by the Wanless Reports (2002; 2004), signaled the largest ever increase in public investment in the NHS, aimed at bringing the UK’s share of GDP dedicated to health-care to the EU average. Between 2002 and 2008 net public expenditure more than doubled from £44 to £91 billion. A large proportion of the increased spending was absorbed by pay rises for NHS professionals (50% in 2005/06 and 40% in 2006/07).

**Selection of high priority areas for increased investment:** A significant proportion of the remaining funds, after meeting other cost pressures, went into, mostly centrally-set high priority areas, which can be grouped into three broad and somewhat overlapping categories: (a) *high priority disease areas*, based on factors such as disease burden data, international benchmarking of performance indicators (e.g. mortality), unwarranted variation in practice and degree of diffusion of and access to new technologies; (b) *service delivery and organization areas*, mainly focused on improving timely access to services through reducing waiting times for elective surgery or emergency admissions; and (c) *patient experience*, centered around increasing patient choice, providing more information and making the health system more “user-friendly”.

Clinical standards, through National Institute for Health and Clinical Excellence (NICE) guidance and the National Service Frameworks (NSFs), drove investment mainly in high priority disease areas and, to a lesser degree, in service delivery, whereas spending in improving patient experience was mostly based on user satisfaction surveys and focus groups.

**Allocating the additional funding based on clinical standards:** Mental health, cancer and cardiovascular disease were identified as key priorities and national plans of action (NSFs) were developed, setting out reforms in clinical care and service configuration to improve outcomes. Within these broader priorities, NICE developed guidance on optimal use of medical technologies, best clinical practice and disease prevention programs based on evidence of clinical effectiveness and also value-for-money for the NHS. For example, in 2006/7, NICE recommendations for the uptake of new treatments accounted for approximately 13% of the additional investment in healthcare.

**Impact assessment:** Even though it is hard to prove a causal link between increased investment driven by clinical indicators and outcome (or process) measures, there is some evidence of impact. For example, in the UK, in the case of cancer, access to treatment and mortality rates from common cancers have both improved over recent years. Based on a national progress report, NICE guidance on the use of new cost-effective technologies has resulted in an increase in uptake by almost 50% between 2003 and 2005 and a reduction in geographical variation in use from 3–8 fold to 2–3 fold over the same period. In a different priority area, cardiovascular disease, recent NICE recommendations for increased use of statins at high risk populations is estimated to cost an additional £35 million and prevent approximately £15,000 myocardial infarctions. In light of the current reduction in the growth rates of investment in health in the UK, the government is now placing increasing importance on clinical standards to drive efficient investment through the use of financial incentives and normative pricing for technologies and services provided in the NHS.

*Source:* Authors elaboration using different sources.

system, diseases of the respiratory system and diabetes, along with HIV/TB, as the initial priority set of diseases given their relative high contribution to the burden of disease in Russia.

The UK's National Institute for Health and Clinical Excellence (NICE) has established guidelines for the management of most clinical diseases and these have been used by many countries to determine how to allocate resources. The challenge is to adapt the NICE guidelines to the situation and medical practice in the country. In order to improve the likelihood of implementation at the local level, the adaptation process should be led by clinicians and the academic institutions operating in the Russian Federation. Such guidelines could then be used to determine high priority services and how resources should be allocated to fund those. The funds need to be allocated in a way that assures that the services will be available when they are needed, which, in turn, requires that clinicians should work together with health economists to decide the cost-effectiveness and affordability of the needed services.

Using international guidelines adapted to the Russian environment would be one way to develop and update standards for treatment in high priority diseases. Any new funding should support the development and implementation of standards in these areas both through the uptake of effective and cost effective medical technologies and public health interventions and through improving process of care delivery (e.g. reducing waiting times and ensuring access to a basic package of services for all citizens). A continuous process of monitoring and prioritization of clinical and public health areas will also mean that as more resources become available and/or priorities change, additional disease areas will be identified and added in the high priority list. The application of this approach in the UK since the early 2000s is discussed in Box 1 above.

### 3.5. The process for developing standards

The following considerations could be taken into account when developing standards:

- (i) *Develop priority setting and resource allocation mechanisms in an incremental and inclusive fashion.* Rationing lists are methodologically and ethically challenging and have significant computational and informational requirements. By targeting instead additional funding to high priority areas both the processes and methods of allocation decisions can be tested and improved. Current fees and prices used and international benchmarking based on countries of GDP/health outcomes similar to the Russian setting could be used as a starting point to be optimized instead of attempting to build new universal price lists.
- (ii) *Institutional reform to improve governance arrangements for resource allocation in the health system.* Russia is missing the appropriate structures/institutions with legitimacy to make healthcare resource allocation decisions. Such a programmatic reform requires delegation of responsibility from federal government to an arm's length transparent and inclusive multi-disciplinary body that would enjoy explicit political support when making difficult allocation decisions. A departure from top-down decision-making would improve the likelihood of evidence-based policies being implemented and reduce perceived influence on decisions by vested interests.
- (iii) *Be flexible and adaptable to regional needs and budgets:* this would be methodologically challenging and carries significant informational requirements but is necessary to ensure these standards are meaningful and implementable at the local level.
- (iv) *Introduce gradually an affordable and equitable basic package of publicly funded services* protecting the general population from high out-of-pocket payments and ensuring access to necessary treatments.

## IV. The imperative of policy, structural and institutional reforms to achieve better health outcomes

It has been argued in this report that spending more money, while necessary, will not be sufficient to improve Russia's health outcomes on a sustainable basis. It is critical therefore that increased health investments and expenditures in the Russian health system be also accompanied by multi-sectoral *policies and programs* coupled with *structural and institutional reforms* to improve the efficiency and effectiveness of health care organization, financing and service delivery.

### 4.1. Key Areas for Action

Specifically, as discussed in detail in the 2008 World Bank report "*Better Outcomes through Health Reforms in the Russian Federation: The Challenge in 2008 and Beyond*"<sup>20</sup> and in the recent World Bank's *Russia Economic Report #16*,<sup>21</sup> the following broad lines of action should be considered and implemented:

- (a) *Tackling the broad social determinants of the health crisis in Russia.* Reducing the high-mortality rates, ill health and disability among Russian working-age adults due to non-communicable diseases (NCDs) such as cardiovascular diseases, cancer, and diabetes, as well as injuries due to traffic accidents and other external events is likely to have a major positive impact on economic and social welfare of the country. These efforts should be seen as key investments to help improve general welfare and secure sustainable economic growth in the country. Support should be provided to participating eligible regions to implement nationally defined multi-sectoral programs targeting the entire population to deal with NCDs and injuries, but allowing for regional differences and selection of region-specific interventions according to their needs and priorities. Under these programs, legal and fiscal measures and interventions would be developed for: (i) controlling excessive alcohol consumption targeting supply (e.g., regulation of production, distribution, prices, access, and advertising) and demand (e.g., information, education and communication campaigns); (ii) controlling tobacco consumption (e.g., development of policies for smoke-free worksites and public places, taxation, legislation for banning tobacco advertising and promotion, as well as sale to minors); (iii) promoting changes in diet and physical activity (e.g., public health policies promoting dietary guidelines for healthier eating, school programs on the importance of healthy nutrition and physical activity); and (iv) improving road safety (e.g., promotion of use of seat belts and helmets, action by the policy to prevent drunk driving, better road signaling and maintenance ).
- (b) *Establishing a single source of funding for public health services.* The health financing system in Russia is very fragmented and much more decentralized than in most middle- or high-income countries. It is also inefficient as it unnecessarily duplicates administrative efforts and increases transaction costs. Funding comes from federal, regional, and municipality budgets, in addition to the MHI established in 1993. In Russia, budget funding accounts for around 60 percent of total public spend for health and MHI funding accounts for the rest. Most public sector funds, over 85 percent, are raised and allocated at the regional level through general revenues and the 3.1% rate of payroll tax. The equalization of budget transfers from the Federal level, however, have never been earmarked for health, and regions have mostly been unwilling to either contribute for nonworking groups or to pool necessary funds under the regional health insurance funds, as called for in the legislation. The gradual integration of financial resources from federal and regional government transfers and the MHI would enable the establishment of a single-payer funding for public health services. This would enable development of more meaningful strategic plans for the regional health systems as a whole, encourage integration and coordination, reduce barriers to intra-sectoral activities, and provide greater flexibility with transfer of funds between services.

<sup>20</sup> World Bank. 2008. "Better Outcomes through Health Reforms in the Russian Federation: The Challenge in 2008 and Beyond." Policy Note. Washington, D.C.

<sup>21</sup> Marquez, P. 2008. "Tackling Health Reform," in *Russia Economic Report No.16*. Moscow: The World Bank.



- (c) *Revising the state guaranteed medical benefits package.* While health care spending is expected to go on rising, both in absolute terms and relative to GDP, the balance between commitments and resources cannot be restored merely by increasing the latter. The guaranteed package of medical benefits will have to be re-examined. This will involve more than an assessment of what the Russian state can actually afford, although resource constraints will clearly be a critical factor. If the state guarantee is to be meaningful, the package must be transparent to both providers and patients by specifying the types, volumes, procedures and conditions of health care provision. A set of services and drugs should be established for priority diseases to be provided free based on the government guarantees. It must also provide mechanisms for citizens to assert their rights if the commitments in the package are not met.
- (d) *Addressing the Structural Imbalances in the Organization of Health Care Services.* Russian regions need significant capital investment to re-structure, renew and appropriately equip its health infrastructure. Although there are special issues of geographic dispersion and severe climatic conditions, making some additional health infrastructure necessary, this does not necessarily mean building new facilities, but rather *modernizing the existing network*. Judicious investment in hospital, intermediate care centers, primary care facilities, emergency medical services, upgrading competences of human resources, and strengthening management systems, including the widespread introduction of electronic medical records, the number of admissions and the length of stay in Russian hospitals can be substantially reduced while expanding the coverage of ambulatory services.
- (e) *Developing new payment mechanisms for health services.* Per capita payments should be combined with performance related pay linked to achieving quality standards or providing new services. For example, additional (bonus) target payments could be provided for reaching certain quality and efficiency targets (such as expanded coverage for immunization, cervical screening, annual health promotion advice, smoking cessation, alcohol reduction). Hospitals in Russia are paid mostly per treated case but some items of expenditure (mostly fixed) are not included in MHI tariffs and covered directly from budgets controlled by governments of various levels. This combination is inefficient as line item budgeting

pays for inputs providing little incentive for providers to improve efficiency. Funds provided through line item budgeting should be incorporated into tariffs that incorporate quality and efficiency standards (for example tariffs that stipulate average length of stay in line cost-effective medical interventions).

- (f) *Expanding the role for private businesses.* Involvement of the private sector is also of particular importance. Since private firms bear much of the costs from the poor health of employees, they also have a direct incentive to invest in their health. Private and public/private initiatives can reduce the cost and increase the effectiveness of programs aimed at protecting the health of the population. Companies can also have a strong influence on the behavior of their staff and can make them aware of the health risks in ways not open to the government. Tax benefits could be used to encourage private businesses involvement as it is done in several G-8 countries.

#### 4.2. Is health system reform possible in the Russian Federation?

Contrary to this perceived wisdom, the achievements in Chuvash Republic and Voronezh Oblast demonstrate that it is possible to effectively restructure regional health systems to address emerging public health challenges faced by the Russian Federation. The experiences of these two pilot regions supported under the Ministry of Health and Social Development (MOHSD)-led and World Bank-funded Health Reform Implementation Project (HRIP) provide much needed evidence of success and rich local experience to inform regional health system strengthening efforts in other regions of the vast Russian Federation.

As shown in a forthcoming World Bank study *“Is Health Care Reform Possible in the Russian Federation? Emerging Evidence from the Chuvash Republic and the Voronezh Oblast”*<sup>22</sup> the initial results of these regional reforms are very promising with substantial improvements in many of the efficiency indicators. For example, in both regions, outpatient facility capacity has grown, and while the number of general practices has grown significantly the number of hospitals and hospital inpatient beds has declined substantially. Financing arrangements have evolved such that financing for health care from the federal, regional and local governments has nearly doubled. Perhaps more important, spending on primary health care, as opposed to specialty care, has significantly increased.

<sup>22</sup> To be published in August/September 2008.

## V. The way forward

The new administration of the Russian Federation has made a commitment to increasing public spending in healthcare. In order for the additional funding to help deliver better outcomes it is crucial that current and extra investment (a) targets high priority disease areas (b) is driven by evidence of comparative clinical and cost effectiveness of alternative clinical and public health interventions and (c) the appropriate institutions and structures are put in place to develop and help implement such evidence based investment decisions by regional and federal governments.

It should be clear, however, that most health challenges in the Russian Federation need to be addressed through broad policy and institutional reforms at the federal, re-

gional, and municipal levels covering many sectors and not only the health system. Improving health outcomes by implementing the proposed reforms in *tandem* to ensure overall coherence of effort is a very complex, medium- to long-term undertaking that should begin to be addressed forcefully today.

To conclude it is worth reiterating the importance of investing on health in a society by quoting Herophilus, Physician to Alexander the Great, who in the year 325 B.C. advised that “*when health is absent, wisdom cannot reveal itself, art cannot become manifest, strength cannot fight, wealth becomes useless, and intelligence cannot be applied.*”