

Healthcare Services in Russia: Problems of Transition to New Terms of Funding

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Abstract

Healthcare systems are currently being reformed in many countries, Russia included. The main task is to ensure availability and quality of medical services while optimizing healthcare spending. In Russia, since 2015 healthcare are to be funded at the expense of Compulsory medical insurance fund, which entails a considerably higher load on regional budgets. The analysis of statistical data has allowed studying the dynamics of funding shortage for territorial programs of state guarantees of free medical aid to citizens in the RF subjects and the implementation efficiency level of these programs. As a result of this, it has been found out if the problem of growing TPSG funding shortage is determined by the provision of healthcare organizations in a certain region with material, technical and staff resources as well as by the level of diseases incidence among population. The study has shown that a number of Russian regions are in a critical situation and they can hardly increase availability and quality of medical services essentially without finding additional funding sources, healthcare institutions restructuring and upgrade. To a large extent, the problems are conditioned by the low quality of management of resources available and poor organizational support of the efficient development, which requires essential adjustment of organizational and managerial approaches to the development of RF healthcare sphere.

Keywords: *healthcare, medical services, healthcare funding.*

1. Introduction

The XX century sees the formation of nation-wide healthcare systems in the world. Alongside with that, comparison of Organization for economic cooperation and development member countries shows that the efficiency of healthcare systems work varies in the countries, with reserves for expenses saving due to increase of efficiency existing in every certain case (OECD, 2010). With regard to this, it has been proved that in healthcare the influence of the market on parametric characteristics of services differs from most other spheres of activity to a considerable extent (Hsiao, 1995). As of today, we can state that no state has created such a healthcare system as to entirely satisfy the society so far, and healthcare reforms are currently up all over the world.

A substantial comparative analysis of healthcare reforms in the foreign countries is presented in the monograph of scientists of M.V. Lomonosov Moscow State University (Sadovnichiy, 2012). The authors emphasize that the three most important constituents characterized by some experts as the "iron triangle of healthcare" – expenses, availability, quality – exist in all reform projects in various combinations, despite the differences in healthcare organization and financing models (Kissick, 1994). In other words, the main problem solved by the developed countries is to ensure for the majority of population an access to quality medical services with simultaneous expenses growth restraint. It is the solution to this problem that Russia has to find, too.

Let us pay attention to the fact that the condition of Russian healthcare system is currently characterized as highly problem-plagued. According to the quantity of employees, the healthcare sphere ranks only 6th in the economy, and as for the volume of state expenses on healthcare (3,6% of GDP), Russia is here close to the parameters of developing

countries which are characterized by the average income level of the population.

Meanwhile, higher competition of medical organizations aggravates the problem of absence of scientifically grounded approaches to healthcare development management which are critical in these conditions; it is essential to preserve the social constituent of healthcare and to ensure economic efficiency of medical organizations activity, with changed funding conditions borne in mind.

At the end of the 1990-s, Russia introduced the Program of state guarantees of providing the RF citizens with free medical assistance (PSG). Over 85% of funds allocated by the state on healthcare systems are annually used for ensuring the PSG. Alongside with the basic program (the compulsory minimum of medical aid), territorial programs are provided for under which the citizens can receive medical assistance on top of the basic program (the territorial programs are adopted by the RF subjects independently). In order to determine the scope of medical aid per one citizen within the territorial state guarantees programs, the average standards of medical aid provision scope are used. The standards are adjusted depending on the particularities of the RF subjects: age composition of the population, diseases incidence rate, climatic and geographical features of the region, transport accessibility of medical organizations, transport routes development, population density and other factors. The standards are based on report data of previous years as well as on special research findings.

According to the current law, since January 1, 2015, the Russian medicine has to adopt single-source funding, and all needs of the branch will have been provided at the expense of the Federal compulsory medical insurance fund. However, the transition is rather troubled at present, because in the recent years far not all regions have succeeded in ensuring a debt-neutral funding of territorial state guarantees programs for provision of free medical assistance to citizens in the RF subjects (TSGP) while also keeping and enhancing the quality and availability of medical services. Moreover, as the load on budgets increased (especially in 2013, when the list of medical aid kinds covered by CMI was expanded), the above problems were aggravated in a number of the RF regions. Alongside with that, it appears important to find out what determines the impaired condition of regions – it could be lack of financing or inefficient management of available resources.

The goal of the research is to find out whether the problem of growing deficit in TSGP funding is due to provision of a certain region's healthcare organizations with material, technical and staff resources as well as to the population diseases incidence rate based on comparing the dynamics of territorial state guarantees programs funding shortage and these programs implementation efficiency level against indices characterizing the specific condition of a certain region's healthcare system (these are population diseases incidence rate, staff, material and technical potential of the healthcare sphere, the level of medical staff motivation, the scale of investment into development of healthcare).

2. Literature Review

The current problems of healthcare system in Russia, lessons drawn from reforming and challenges for the branch for the nearest decades are described in the work of G.E. Ulumbekova (Ulumbekova, 2010). Comparative studies of healthcare reforms in countries featuring various models of healthcare funding and organization are presented in the monograph by V.A. Sadovnichiy, N.S. Grigorieva, and T.V. Chubarova (Sadovnichiy, 2012). The works of I.M. Sheiman (Sheiman, 2008) and S.V. Shishkin (Shishkin, 2002) study the conditions of implementing the market mechanisms in the sphere of the Russian healthcare, including the problems range of ensuring the available free medical assistance and expanding the consumer choice at the medical services market.

3. Research Methods

The research was conducted by analyzing the following:

- the dynamics of funding deficit in the RF subjects for the territorial state guarantees programs for provision of free medical assistance to the RF citizens;
- the specific condition of healthcare system of a certain region (population diseases incidence rate, staff, material and technical potential of the healthcare sphere, the level of medical staff motivation, the scale of investment into development of healthcare).

For this purpose, based on the reports of the RF Ministry of healthcare about implementation of state guarantees programs, the regions were ranked according to the value of TSGP funding shortage increment (Official website of the RF Ministry of healthcare, 2015). Moreover, the official statistic data of the RF Federal State Statistics Service were used for calculating the indices characterizing the specific condition of healthcare system in the RF regions.

Then, the regions were grouped according to the population diseases incidence rate and the level of provision with resources:

- ones having an above the RF average population diseases incidence rate and an above the RF average provision with resources;
- ones having a below the RF average population diseases incidence rate and an above the RF average provision with resources;
- ones having an above the RF average population diseases incidence rate and a below the RF average provision with resources;
- ones having a below the RF average population diseases incidence rate and a below the RF average provision with resources.

For each group, the quantity data on the number of regions demonstrating identical healthcare system condition indices were submitted.

Finally, conclusions were made and possible directions of solving the funding deficit problems for the regional healthcare systems were outlined.

4. Results and Discussion

According to the data of the conducted analysis, in six regions, the transition to a new healthcare funding mechanism did not entail a deficit of funds (Moscow, Saint-Petersburg; Khanty-Mansiysk, Chukotka, Yamalo-Nenets autonomous regions, Sakhalin region). In six other RF subjects, funding shortage was registered in the first year of transition to the new funding conditions only (Kamchatka territory, Magadan, Moscow, Sverdlovsk, Tyumen regions, and Nenets autonomous region).

By 2012, the funding deficit had been remedied in four regions (the Republic of Sakha (Yakutia), Yaroslavl and Kaluga regions, Krasnodar territory), so had nine more regions by 2013 (Astrakhan, Leningrad, Pskov, Tver, Tula, Omsk regions, Khabarovsk territory, and the Republic of Komi). It should be pointed out that almost all subjects having the TSGP funding deficit were reducing it during the first three years (2010 – 2012).

However, the situation changed due to higher load on the regional budget which occurred in 2013. It is only in the eleven regions that the trend of TSPG funding shortage decreasing continues (the Republic of Adygea, Bashkortostan, Mordovia, North Ossetia – Alaniya; Belgorod, Voronezh, Novgorod, Ryazan', Samara, Tomsk regions, Krasnodar territory). In most subjects of the Russian Federation (47 regions), the transition to new healthcare financing conditions was not only accompanied by an annual deficit but also resulted in its increase in 2013 as compared to 2012. Moreover, among the RF subjects listed, twenty regions had a higher TSGP funding shortage in 2013 than similar indices of both 2012 and 2010. Thus, we can speak about a number of the RF subjects being unable to ensure TSGP financing at the required level and this problem tending to be aggravated.

Alongside with that, it is the qualitative aspect of TSGP implementation that is of interest and not only the quantitative one. The RF Ministry of healthcare holds an annual assessment of the implementation and efficiency of territorial state guarantees programs, taking into account the criteria of availability, quality of medical aid, dynamics of the population health parameters and satisfaction with medical aid. Within this assessment, the regions are distributed into four groups: regions having a high (optimal) level of TSGP implementation (they are awarded score 1); ones having an above average level of TSGP implementation (score 2 is awarded); ones having a below average level of TSGP implementation (score 3 is awarded); and the regions having a low TSGP implementation level (they get score 4). The analysis of the data shows that it is only 20 RF regions that ensured a high (above average) level of TSGP fulfillment efficiency on average over four years. Moreover, it cannot but be pointed out that higher financial load on regional budgets occurring in 2013 resulted in a sharp increase of the quantity of regions having poor TSGP fulfillment efficiency (there were 15 regions in 2010, 14 – in 2011, 10 – in 2012, and 18 regions in 2013).

When comparing the data on TSGP funding deficit increment and on the average TSGP efficiency rating, it is notable that only 9 RF subjects coped with the 2013 increase of financial load on regional budget while also ensuring rather high figures of TSGP implementation efficiency (they are Voronezh, Leningrad, Moscow, Novgorod, Tomsk, Tyumen and Yaroslavl region). Seven regions more succeeded in ensuring rather high level of medical services availability and quality against shortage increment of less than 20% (the Republics of Buryatia and Tyva, Bryansk, Ivanovo, Kemerovo, Lipetsk regions, Primorsky territory). In four regions with a rather high TSGP implementation efficiency level, the increment of regional budgets deficit exceeded 20% per year (Penza and Novosibirsk regions, the Republics of Kalmykia and Mari El).

Among regions with a rather low (less than 2) average TSGP implementation efficiency rating, twenty seven subjects had a deficit-free budget in the part of TSGP funding in 2013, and twenty five subjects were characterized by under 20% deficit increment per year.

However, the most difficult situation came about in eleven RF regions where the budget deficit increment amounted to over 20% in 2013, with the "below average" level of TSGP implementation efficiency (Tambov, Vladimir, Vologda, Volgograd regions, Altai and Trans-Baikal territory, the Republics of Karelia, Khakassia, Tatarstan, Altai, Chechen Republic).

Given the growth of the financial load on budgets in the following years, these regions are in a critical situation and hardly able to considerably improve the availability and quality of medical services without finding additional funding sources, restructuring and upgrade of healthcare institutions, while also ensuring the reduction of budget gap.

Moreover, within the research, it seemed expedient to analyze a number of indices characterizing the specific nature of healthcare sphere condition in the RF regions in order to find out possible causes of low TSGP implementation efficiency and growing shortage of funding of these programs by budgetary means of the RF subjects. As aggravation of the situation was noted in 2013, it made sense to analyze the parameters of 2012: whether the regions had like problems entailing the decrease of healthcare institutions performances.

As the regions differ in the population size significantly, the indices were calculated with population size borne in mind. The official statistical data (Healthcare in Russia, 2013) were used as the basis of the research. Similarly to the approach of the RF Ministry of healthcare to ranking the regions according to TSGP fulfillment efficiency, all regions were divided into 4 groups (the lower the score is, the higher the rating is):

- regions having a high rating in a certain index were awarded score 1;
- regions having an above the RF average value in a certain index were awarded score 2;
- regions having a below the RF average value in a certain index were awarded score 3;
- regions having a low rating of the RF value in a certain index scored 4 points.
- The following characteristics were selected as ones taken into account by ratings:
 - Rop – rating according to the capacity of outpatient and polyclinic organizations per 10 thousand people of the region population (the quantity of visits per shift);
 - Rhb – rating according to the quantity of hospital beds per 10 thousand people of the region population (without daytime hospital beds);
 - Rd – rating according to the quantity of doctors per 10 thousand people of the region population;
 - Rns – rating according to the nursing staff size per 10 thousand people of the region population.

We believe the indices are capable of showing the extent of provision of the regional healthcare systems with staff and material and technical resources. They certainly do not reflect the efficiency of using the relevant potential yet they can highlight the extent of medical services availability (first of all, the territorial one, and especially in the case of high diseases incidence among the region population) in some ways. In connection to this, the regions were also ranked according to the "health level" criterion (this is the opposite index to the population diseases incidence rate):

- Rhe – rating according to the population health level (per 1000 people of the region population).

On top of that, within estimating the healthcare workers' motivation for quality work and estimating the availability of free medical aid for the population (price affordability of the medical services), the regions were ranked by the following criteria:

- Raw – rating according to the ratio of the RF subject healthcare workers' wage and the average wage in the region;
- Rms – rating according to availability of medical services (it was calculated based on ranking the share of paid medical services in the average region population's wage: the higher the share is, the lower the rating is).

Another index within our analysis was investment into the basic capital targeted at the development of healthcare, calculated as per 1 thousand people of the region population, - Ri. It reflects the region activity in relation to mitigating the medical service availability problems in the prospect.

The final data of ranking are given in Table 1. For convenient comparison, the table also contains the data on the average TSGP fulfillment efficiency rating (Rae) and the TSGP funding deficit increment in % (D). It is according to these values that the regions were sorted.

Table 1. Ranking of regions according to individual indices of healthcare sphere condition in 2012

No.	RF subject	Rhe	D	Rae	Rop	Rhb	Rd	Rns	Raw	Rms	Ri
	Leningrad region	1	-	1,25	3	4	4	4	2	1	4
	Krasnoyarsk territory	3	-	1,5	1	2	2	2	4	1	2
	Moscow region	2	-	1,5	4	4	4	1	1	1	4
	Yamalo-Nenets autonomous region	4	-	1,5	4	2	3	1	2	1	1
	Yaroslavl region	3	-	1,5	2	1	1	3	3	2	3
	Republic of Buryatia	1	2,2	1,75	3	2	3	2	2	1	2
	Republic of Tyva	1	3,3	1,75	1	1	3	1	3	1	2
	Ivanovo region	4	10,4	1,75	4	2	2	2	2	2	3
	Kemerovo region	3	14,7	1,75	2	2	3	2	3	2	3
	Novosibirsk region	2	23,1	1,75	3	2	2	3	1	4	2
	Republic of Mari El	3	25,5	1,75	1	2	4	2	4	2	4
	Republic of Kalmykia	2	29,2	1,75	2	3	2	2	1	1	4
	Voronezh region	1	-	2,0	3	2	2	2	4	2	3
	Novgorod region	3	-	2,0	1	2	3	2	2	4	2
	Tomsk region	2	-	2,0	2	1	1	3	3	3	3
	Tyumen region	3	-	2,0	3	4	2	1	3	1	1
	Lipetsk region	2	3,8	2,0	1	3	3	2	3	3	3
	Primorsky territory	2	4,8	2,0	3	1	2	4	2	3	3
	Bryansk region	3	14,8	2,0	3	2	4	2	3	2	3
	Penza region	2	23,3	2,0	4	2	4	2	3	2	3
	Kaluga region	2	-	2,25	3	2	4	3	1	3	3
	Pskov region	1	-	2,25	3	2	4	2	1	2	2
	Republic of Sakha (Yakutia)	4	-	2,25	2	1	2	1	4	1	1
	Ryazan region	2	-	2,25	3	2	2	2	2	3	3
	Orel region	4	4,6	2,25	3	2	3	4	3	2	2
	Kabardino-Balkar Republic	1	9,5	2,25	4	2	3	2	4	1	4
	Irkutsk region	3	13,9	2,25	2	1	2	2	2	2	2
	Saratov region	2	14,2	2,25	2	2	2	2	3	2	4
	Tambov region	1	21,4	2,25	3	3	4	2	3	2	2
	Republic of Karelia	4	22,6	2,25	2	1	2	1	2	3	4
	Astrakhan region	2	-	2,5	2	2	1	2	3	2	3
	Saint-Petersburg	3	-	2,5	1	3	1	3	1	4	4
	Kamchatka territory	3	-	2,5	2	1	2	1	1	1	1
	Magadan region	2	-	2,5	1	1	2	1	4	1	1
	Khabarovsk territory	2	-	2,5	2	2	1	2	2	3	1
	Khanty-Mansiysk autonomous region - Yugra	3	-	2,5	3	4	2	1	3	1	1
	Nizhny Novgorod region	3	4,3	2,5	2	2	3	2	3	3	3
	Kaliningrad region	3	4,5	2,5	3	3	3	4	1	3	2
	Chelyabinsk region	3	5,3	2,5	2	2	3	2	3	2	4
	Kursk region	1	11,0	2,5	3	3	1	1	4	1	3
	Vladimir region	4	22,8	2,5	1	3	4	3	1	2	3
	Altai territory	4	31,2	2,5	2	2	3	2	1	2	2
	Republic of Adygea	2	-	2,75	3	3	4	3	3	1	4
	Republic of Bashkortostan	3	-	2,75	3	3	3	2	2	4	4
	Republic of Mordovia	2	-	2,75	4	2	2	2	2	1	2
	Samara region	4	-	2,75	3	3	3	4	3	3	4
	Sakhalin region	3	-	2,75	3	1	2	1	3	4	1
	Tula region	2	-	2,75	3	3	4	3	2	3	3
	Kirov region	2	3,9	2,75	2	1	3	1	1	3	4
	Murmansk region	3	6,5	2,75	2	1	2	1	2	2	3
	Ulyanovsk region	4	14,1	2,75	3	3	4	1	2	2	1
	Republic of Ingushetia	3	14,5	2,75	4	4	4	4	3	1	3
	Karachai-Cherkess Republic	1	16,0	2,75	4	4	4	2	4	3	2

No.	RF subject	Rhe	D	Rae	Rop	Rhb	Rd	Rns	Raw	Rms	Ri
	Arkhangelsk region	4	18,2	2,75	1	1	2	1	3	3	3
	Trans-Baikal territory	2	22,5	2,75	3	1	1	1	3	2	2
	Republic of Khakassia	3	23,6	2,75	1	3	4	2	3	1	3
	Republic of Tatarstan	3	23,8	2,75	3	4	3	2	3	4	2
	Vologda region	3	26,3	2,75	2	3	4	2	4	4	3
	Belgorod region	2	-	3,0	3	4	3	2	3	2	3
	Moscow	2	-	3,0	1	3	1	3	1	3	4
	Nenets autonomous region	4	-	3,0	2	1	2	2	1	1	1
	Omsk region	4	-	3,0	3	2	2	1	4	3	4
	Perm territory	3	-	3,0	4	3	2	2	2	3	3
	Republic of Komi	4	-	3,0	1	1	3	1	4	2	2
	Sverdlovsk region	2	-	3,0	2	2	3	2	1	4	4
	Chukotka autonomous region	4	-	3,0	1	1	1	1	4	1	1
	Jewish autonomous region	1	0,2	3,0	3	1	4	1	3	1	2
	Chuvash Republic	4	2,9	3,0	1	3	3	2	2	4	4
	Rostov region	3	9,0	3,0	3	3	4	4	3	2	3
	Stavropol territory	1	14,0	3,0	4	4	3	3	1	3	2
	Republic of Dagestan	3	16,4	3,0	4	4	4	4	2	4	4
	Tver region	3	-	3,25	4	2	2	3	2	2	4
	Smolensk region	2	2,7	3,25	2	1	2	2	3	2	1
	Kurgan region	3	4,2	3,25	3	2	4	1	2	2	2
	Udmurt Republic	3	12,6	3,25	2	2	2	2	2	3	4
	Amur region	3	15,0	3,25	1	1	1	1	4	1	2
	Republic of Altai	3	29,5	3,25	2	3	3	1	1	1	4
	Volgograd region	2	36,1	3,25	3	2	3	3	2	4	2
	Krasnodar territory	1	-	3,5	4	4	3	4	2	2	1
	Kostroma region	2	6,3	3,5	3	2	4	3	2	2	3
	Orenburg region	3	7,7	3,75	2	2	2	1	4	3	4
	Chechen Republic	1	28,3	3,75	4	4	4	4	4	1	1
	Republic of North Ossetia (Alania)	1	-	4,0	3	1	1	2	4	2	4

Source: compiled by the author based on the data of Healthcare in Russia, 2013, the official website of the RF Ministry of healthcare, 2015

For clarity, let us group the regions according to the level of population diseases incidence and to the level of provision with resources. In each group, quantitative data for the relevant regions are given as for the indices studied. The findings of the analysis conducted are presented in Table 2.

As follows from the table, in each regions group, there are several – one to three – subjects ensuring a high level of TSGP implementation without the funding deficit increment. As for the certain healthcare condition indices for the groups of regions, they show that among regions the resources provision of which is below the average RF values, high levels of TSGP implementation quality, medical workers' wage, availability of medical services is characteristic for a larger quantity of subjects.

Table 2. Distribution of regions according to the healthcare sphere condition indices in 2012

Source: compiled by the author based on the data of Healthcare in Russia, 2013, the official website of the RF Ministry of healthcare, 2015

Thus, the data of Table 2 allow concluding that the problems of funding shortage and the territorial stage guarantees programs fulfillment efficiency are far not always associated with staff, material and technical provision of the healthcare sphere in the regions, as well as with medical staff motivation, investment scale, and the population diseases incidence rate.

5. Conclusion

In our opinion, the results of the research conducted allow concluding that the problems of the Russian healthcare are in much caused by the low quality of management of the resources available and poor organizational support of efficient development. The available potential of the Russian Federation healthcare sphere is not balanced enough, so in some regions the resources provision has to be improved while in others it has to be optimized and used to the best advantage.

Activity has to be increased in analyzing and borrowing the experience of regions leading in efficient TSGP fulfillment, in particular, finding the innovation mechanisms of healthcare organizations management, engaging additional sources for medical services funding, development of advanced medical technologies, and the most efficient fulfillment of staff, material, technical, and innovation potential of healthcare organizations. It is expedient to enhance work on finding out, accumulating and propagating the best practices, including the advanced experience of efficient resources use, organizational and technical support of medical institutions within change management. In connection to this, it makes sense to use the experience of creating special organizations – competencies centers – which ensure the active communication of subjects creating the new knowledge and those who need getting the knowledge.

Alongside with that, we deem it essential to:

- ensure the opportunity of mobility of medical staff in those regions and institutions which have a shortage of medical staff (on a contractual basis, within temporary engaging the additional staff);
- reorganize a number of medical organizations for optimizing the size of administration and managerial staff and structural units.

In its turn, this means that the complete transition to insurance funding principles for medical activity is currently unable to ensure higher quality and availability of medical aid without eliminating the causes of existing problems and forming the new approaches to healthcare organizations management in many regions of the RF. In other words, a simultaneous transition of all RF regions to insurance healthcare funding principles makes no sense without previously upgrading the Russian healthcare system.

References

- Healthcare systems: efficiency and policy setting. (2010). OECD.
- Hsiao, W. (1995). Abnormal Economics in the Health Sector. *Health Policy*. 1995, № 32.
- Kissick, W.L. (1994). *Medicine's Dilemmas: Infinite Needs versus Finite Resources*. New Haven. CT: Yale University Press.
- Official website of the RF healthcare ministry. (2015). Retrived from: <http://www.rosminzdrav.ru>
- Sadovnichiy, V.A., Grigorieva, N.S., Chubarova, T.V. (2012). *Ot traditsiy k innovatsiyam: reformy zdavookhraneniya v sovremennom mire* [From traditions to innovations: healthcare reforms in today's world]. M.: Ekonomika.
- Sheiman, I.M. (2008). *Teoriya i praktika rynochnykh otnosheniy v zdavookhraneni* [Theory and practice of market relations in healthcare]. 2nd ed. M.: GU-VShE publishing house.
- Shishkin, S.V. (2002). *Besplatnoe zdavookhranenie: sostoyanie i problemy* [Free healthcare: condition and problems]. *Jurnal issledovaniy sotsialnoi politiki*. Volume 1.
- Ulumbekova, G.E. (2010). *Zdavookhranenie Rossii. Chto nado delat'*. Nauchnoe obosnovanie "Strategii razvitiya zdavookhraneniya RF do 2020 goda" [Healthcare of Russia. What has to be done. Scientific justification of the "RF healthcare development strategy up to 2020"] A brief version. M.: GEOTAR-Media.
- Zdavookhranenie v Rossii* [Healthcare in Russia]. (2013). 2013: statistics digest. M.: Rosstat.