Innovation in health care system in subjective population assessments: regional aspect

Innovaciones en el sistema de salud en las evaluaciones temáticas de la sociedad: el aspecto regional

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Received: 25/01/2019 • Approved: 02/08/2019 • Published 05/08/2019

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ABSTRACT:
The topicality of study of health care system is explained by the exceptional role of public health in the functioning of modern society. Investments in health contribute to social capital and ensure the growth of national wealth. The purpose of our study is to analyze the characteristics of subjective assessments of innovations in health care by residents of one of the Russian Federation region - the Astrakhan region - based on the results of sociological monitoring conducted from 2010 to 2016 using in-home interview.

Keywords: Health care system, public opinion about health care, Russian health care

1. Introduction
The topicality of health care system study is explained by the exceptional role of public health in the functioning of modern society. For example although the etiology of morbidity lies mainly outside the institution of health, health care makes a “real contribution to the positive changes in morbidity of a population through the implementation of secondary diseases prevention by providing high-quality medical care when they occur and full
examination of health state which can help to detect of early stages of a disease” (Bredikhina, 2010). Health is a physical resource for maintaining social capital and can generate income, which should be taken into account when planning investments (Becker, 1962; Becker, 1993; Coleman, 1988 and Coleman, 1990). It should be stressed that health is a physical resource for social capital maintaining and can generate income, which should be taken into account when planning investments. Thus, investments in health care benefit to social capital formation, provide immediate economic effect and increase national wealth (Shabunova, 2015) and modernization processes (Dulina, Kargapolova and Strizoe, 2017). Health care, i.e. protection of human health, is one of a state functions and one of national security factors (Tragake and Lessof, 2003).

Study of public health seems relevant in terms of a systematic approach, that is, based on the study of the relationship between objective and subjective indicators of public health and other subsystems of society —politics (Foucault, 1998), economy (Bloom, Canning and Graham, 2003; Shabunova, 2015), environmental issues (Chan, 2009), social structure (Mocanu, 2011) and culture (Dulina, Kargapolova and Strizoe, 2017). That gives an opportunity to present health issues in a wider anthropological and social context. According to Foucault (1998), “The first task of medicine is political. The fight against disease must begin as a war against bad government. A person can be completely cured only if he is first released. [...] To be politically effective, medicine should not be only for treatment, and in a finally free society where inequality disappears and consent reigns, a doctor will have only one passing role: give lawmakers and citizens advice to balance body and soul.” (Foucault, 1998, p. 66).

Foucault’s (1998) conclusions about connection of medicine with political sphere of society are confirmed by historical events related to the collapse of the USSR, when change of the political regime led to the collapse of the health care system, the high cost of effective drugs and spread of counterfeit ones, and deterioration of balance and diet, which were the underlying causes of rising mortality in the 1990s in Russia (Tragake and Lessof, 2003). "After the collapse of the USSR, health of the Russian population rapidly deteriorated. Such a sharp health and demographic indicators deterioration, which occurred in the 90s in Russia, is unbelievable for a peaceful time." (Tragake and Lessof, 2003: p. 10).

The mainstreaming of the system approach in health research is also linked to the interdependence and interconnectedness of the globalized world. As M. Chan notes, “the destinies of all nations are more connected than ever. Mistakes made in one part of the world are spreading very quickly throughout the international system ... All this happens at the time when the international community is making the most ambitious efforts to reduce poverty and reduce huge gaps in health outcomes ” (Chan, 2009 ).

Within the framework of the systemic approach, population’s subjective assessments of innovations in health care appear to be an indicator not only of sanitary-hygienic literacy, but also of general culture of a person, which determines the specificity of social interactions and influences stability of a whole social system. Subjective assessments of a health care system are differentiated by positions of individuals and groups in a particular social system. Exploring the regional characteristics of health systems in the totality of their advantages and disadvantages is important, as weak health systems will ”ultimately weaken the strength of all our noble efforts and ambitious goals.” (Chan, 2009). Thus, the purpose of our study was to analyze the characteristics of subjective assessments of innovations in health care by residents of one of the Russian Federation regions - the Astrakhan region.

### 2. Methodology

The research methodology is based on analysis of the results of the Russian Federation’s Federal State Statistical Information Service (Rosstat) that were being published in the collections "Regions of Russia. Socio-economic indicators" in 1990-2017. (Regions of Russia: social-economic indicators, 2017). Besides, some results of a monitoring sociological study, implemented under the guidance of E.V. Kargapolova in the Astrakhan region using the interview method at the place of residence were used. The study was conducted according to the typical methodology of the All-Russian research program “Socio-Cultural
The methodological basis of the research is sociocultural approach, which makes it possible to reveal the ontological unity of society, culture and mankind. The sociocultural approach makes it possible to analyze the society in a complex of factors covering all spheres of life, such as natural, demographic, cultural, educational, socio-economic and socio-political. Among these factors, a significant place is occupied by subjective assessments and objective indicators of health state. At the same time, usage the framework of the sociocultural approach, assumes that the feature determining the integrity, structure and conditions of society functioning is the joint activity of people, and the source of dynamism of society is social interaction leading to joint activity. Dynamically changing interpersonal relationships between specific people can influence the subjective assessment of innovation in the health care system.

The instrumentarium of the typical methodology includes statistical indicators and interview questions on various aspects of a region life, namely: a region as a socio-cultural community; population and settlement; social well-being of a population; cultural potential and cultural capital of a population; labor motivation and economic activity of a population; standard of living and problems of its quality; social stratification and mobility; realities of innovation; law and order; state and municipal administration. (Lapin and Belyaeva, 2010).

In this study we focused on the health care system functioning. For further analysis, we used statistical indicators of a health care system functioning, as well as the results of the Astrakhan region residents' responses to the question about the shortcomings of the regional health care system, the last visited medical institution, the financial costs of visits and the time spent on the road to the medical institution. The survey questions used in our analysis are included in the text below if needed. When answering the question “What exactly is it in the public health care that does not satisfy you?” Respondents were presented with answers cards and interviewers gave instructions to choose no more than three answer options that are most relevant to the respondent. When processing the results, this made it possible to most accurately rank the degree of dissatisfaction with the various aspects of the functioning of the regional health system and improve the reliability of the results and their interpretation. Besides it allowed ensuring the comparability of different monitoring waves, as well as comparability with the data obtained in other regions of the Russian Federation.

The Astrakhan region was chosen for sociological monitoring implementation as the region which is responsible for realization of Russia's geopolitical interests in the Caspian Sea. The Caspian region of Russia is of key importance in the development of Eurasian transit. Since ancient times, the lower reaches of the Volga have been a key link in the northern branch of the Great Silk Road and the geographical center of trade between China, India, Persia and Western Europe. Over time, the Astrakhan region turned into a real trading gate between mysterious China and rich Europe.

After collapse of the Soviet Union and with formation of new states in the Caspian region at the end of 1991, the Astrakhan region again became frontier. Taking into account new geopolitical position of its territory, the priority directions of foreign economic, cultural and other relations development were implemented in Astrakhan, thus international cooperation with countries of the near and far abroad was expanded. That is why the implementation of the three waves of large-scale sociological monitoring was allocated in the Astrakhan region and funded by the Russian Humanitarian Scientific Foundation and the Astrakhan State University of Architecture and Civil Engineering. To ensure the comparability of the gathered results with other regions of Russia, one of the conditions for funding was to conduct research using the typical methodology and the issues of tools modifying were coordinated with project managers at the federal level.

The first stage was conducted in January 2010 (N = 1000), the second - in May-June 2012 (N = 600) and the third - in April-May 2016. The sample was stratified by gender, age, type of settlement and ethnicity Sampling error is 3%. Data processing and analysis was performed using SPSS 17.0. The aim of statistical data analysis was to allocate the dynamics
of the studied indicators. Data analysis included the study of linear distributions, cross tabulations and the use of Fisher’s F-test.

3. Results

According to the results of monitoring in 2010-2016 we observe a statistically significant ($\phi = 5.637; p = 0.001$) decrease of the respondents satisfied with medical care: in 2010 their number was about 15%; in 2016, this category was reduced by half and amounted to only 7.2% (see Table 1).

<table>
<thead>
<tr>
<th>Answers to the question “What exactly is unsatisfactory for you about public medical care?” (in %)*</th>
<th>2010</th>
<th>2012</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long queues, difficult to get an appointment</td>
<td>62.8</td>
<td>65.4</td>
<td>64.6</td>
</tr>
<tr>
<td>Doctors’ suggestions and drug orders don’t help</td>
<td>21.0</td>
<td>23.4</td>
<td>22.4</td>
</tr>
<tr>
<td>Doctors prescribe costly medicines or the ones difficult to obtain</td>
<td>42.5</td>
<td>35.0</td>
<td>32.5</td>
</tr>
<tr>
<td>Doctors usually try not to write out a sick-list</td>
<td>6.4</td>
<td>6.0</td>
<td>9.5</td>
</tr>
<tr>
<td>It is difficult to call in home a doctor</td>
<td>11.1</td>
<td>10.6</td>
<td>12.3</td>
</tr>
<tr>
<td>Long waiting for ambulance</td>
<td>17.9</td>
<td>18.1</td>
<td>27.0</td>
</tr>
<tr>
<td>It is very difficult to get hospitalized</td>
<td>17.4</td>
<td>19.7</td>
<td>13.4</td>
</tr>
<tr>
<td>Impolite, inattentive medical staff’s handling of patients</td>
<td>n/a</td>
<td>n/a</td>
<td>16.9</td>
</tr>
<tr>
<td>Hospitals do not provide wanted free services</td>
<td>n/a</td>
<td>n/a</td>
<td>12.3</td>
</tr>
<tr>
<td>Too limited number of services in polyclinics</td>
<td>n/a</td>
<td>n/a</td>
<td>11.5</td>
</tr>
<tr>
<td>I’m satisfied with medical care</td>
<td>14.9</td>
<td>15.3</td>
<td>7.2</td>
</tr>
</tbody>
</table>

*It was allowed to choose up to 3 answers

The first position in the list of shortcomings of the health system is “difficult to get to the doctor, long queues” option, which, according to the monitoring results, was chosen by more than 60% of respondents in the three years. The gathered results are as mentioned, despite the fact that, according to statistical data, in 2015 the Astrakhan Region occupied the 5th place in the Russian Federation ranking of doctor’s supply. Besides, the capacity of outpatient clinics in 2016 amounted to 27,21 visits per shift which also exceeds the average Russian indicators and the average for the Southern Federal District (26.35 thousand and 24.03, respectively). It also should be noted that decrease in this indicator has been recorded across the region since 2012 (Regions of Russia: social-economic indicators, 2009; Regions of Russia: social-economic indicators, 2017). The monitoring data show that the paradoxical problem was not solved even by such an innovation in the health care system of modern Russia as an electronic medical appointment. It has led to the situation in which it has become even more difficult to visit a specialist during the period of occurrence or exacerbation of the disease (that is, when the need to “get in”).
The second top shortcoming of the health care system is the high cost and difficult availability of medicines. The number of respondents who indicated this deficiency was statistically significant ($\phi = 4.629; p = 0.001$) decreased from the first wave of monitoring to the third. The change was 10%. Third top shortcoming, according to the results of the third monitoring wave is a long waiting time for the ambulance; the number of respondents who chose that option was statistically significant ($\phi = 4.899; p=0.001$) increased from the first wave to the third by 10% (from 17.9% to 27%). In the fourth place there is a shortcoming, which questions high level of professionalism: almost one in five respondent answered that doctors' prescriptions rarely help. In 2016, new answers appeared in the methodology and the option "impolite, inattentive treatment of medical staff with patients" was chosen by almost every six (16.9%) Astrakhan inhabitants.

Almost every fifth respondent in 2012 and every seventh in 2016 noted difficulties in obtaining a place in the hospital. Thus, for 4 years we can allocate a statistically significant ($\phi = 3.456; p = 0.003$) decrease of this problem severity. And according to statistical information, the number of beds in hospitals exceeds the average Russian indicator and the average for the Southern Federal District. Though, it should be noted that from 1990 to 2016 this figure has dropped from 166.7 to 92.3 units per 10 thousand people (Regions of Russia: social-economic indicators, 2009; Regions of Russia: social-economic indicators, 2017).

13.4% of respondents in 2016, chose such options as “It is difficult to call in home a doctor”, 12.3% "Hospitals do not provide wanted free services”, 11.5% of respondents - "too limited number of services in polyclinics ". The number of Astrakhan residents who chose the option “doctors usually try not to write out the sick-list” increased to 9.5%.

From the first to the third wave of monitoring, the number of people receiving medical care in polyclinics at the place of residence has significantly decreased (see Table 2). So, in 2010, 55.1% of Astrakhan residents visited a doctor in local polyclinics, of whom 5.5% paid for their visit. In 2012, 41.9% of Astrakhan residents received medical care in local polyclinic. Thus, compared to 2010 we recorded a statistically significant ($\phi = 3.46, p = 0.003$) decrease of the number of those who sought free of charge medical help at a local polyclinic or first aid office. At the same time the number of paid visitors did not change statistically significantly and amounted to 5% ($\phi = 0.501; p = 0.308$). Thus, from 2010 to 2016, the number of respondents who visited policlinics has statistically significant ($\phi = 6.869, p = 0.001$) decreased by 20.6%, that is, in 1.6 times. This reflects the all-Russian tendency to reduce visits to polyclinics in 2016 (Russians began to visit clinics less frequently, 2016). At the same time, the deal of those who paid for their visits statistically significant ($\phi = 6.008, p = 0.001$) increased to 12.4%, approaching the 15% rapper point after which payment for medical services become normally for the population. Recalling the USSR, where health care was free, introduction of paid medical services is an modern innovation of the Russian state.

It should be noted that over the same period, the proportion of visits to a first-aid post, polyclinic, occupational health clinic increased statistically significant (from 13.7% to 36.7%; $\phi = 12.147, p = 0.001$), to a hospital or specialized medical institution (from 17.9% to 34.8%; $\phi = 8.681, p = 0.001$) and private doctor's office (from 3.6% to 21.9%; $\phi = 13.242, p = 0.001$).

Astrakhan citizens’ answers to the question “Where did you receive medical care last time and did you pay for it?” (% of respondents)

<table>
<thead>
<tr>
<th>Answers</th>
<th>2010</th>
<th>2012</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Paid</td>
<td>Free service</td>
<td>Paid</td>
</tr>
<tr>
<td>In a workplace first-aid post</td>
<td>1,9</td>
<td>11,8</td>
<td>3,1</td>
</tr>
</tbody>
</table>

Table 2
Places of medical care receiving
In a local polyclinic or first aid office | 5,5 | 49,6 | 5,0 | 36,9 | 12,4 | 22,1
---|---|---|---|---|---|---
In a hospital or specialized medical institution | 5,6 | 12,3 | 7,0 | 10,5 | 8,6 | 26,2
In private doctor's office | 3,3 | 0,3 | 5,5 | 6,9 | 12,3 | 9,6
At home | 1,0 | 2,7 | 1,2 | 4,1 | 3,1 | 10,1
Other | 0,2 | 0,1 | 0,2 | 0,1 | 0 | 2,0

On the average, according to the first wave of monitoring in 2010, the Astrakhan citizens reached the nearest doctor / medical assistant in 22 minutes, with the amplitude of time from 6 to 38 minutes; to the nearest hospital – in 33 minutes (the amplitude from 10 to 46 minutes). Analysis of the data presented in Table 3 indicates statistically significant increase of the proportion of those Astrakhan residents who began to spend more time on the road to the nearest doctor, medical assistant, clinic ($\phi = 3.639, p = 0.001$). As for travel time to the nearest hospital, the analysis of the data allows us to allocate statistically significant decrease of this rate. The number of respondents whose travel time to the nearest hospital was about an hour has increased by almost 10% ($\phi = 4.913; p = 0.001$), while the category that spends from one to two hours on this journey has decreased by 8.4% ($\phi = 6.06; p = 0.001$).

<table>
<thead>
<tr>
<th>Answers</th>
<th>Nearest doctor / paramedic or polyclinic?</th>
<th>Nearest hospital?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2016</td>
</tr>
<tr>
<td>Less than half an hour</td>
<td>77,8</td>
<td>70,7</td>
</tr>
<tr>
<td>About an hour</td>
<td>17,9</td>
<td>21,0</td>
</tr>
<tr>
<td>From an hour to 2 hours</td>
<td>0,8</td>
<td>4,0</td>
</tr>
<tr>
<td>More than 2 hours</td>
<td>0,5</td>
<td>0,7</td>
</tr>
<tr>
<td>Difficult to say</td>
<td>2,4</td>
<td>1,7</td>
</tr>
<tr>
<td>Deny answering</td>
<td>0,3</td>
<td>0,2</td>
</tr>
</tbody>
</table>

**In 2010 the question was open ended**

4. Discussion
Thus, according to the results of sociological monitoring, there is a problem of primary medical care accessibility, high cost of medicines and low trust in doctors accompanied by growth of paid services for residents of the Astrakhan region; attendance at polyclinics at
The place of residence had been decreasing as well, at the same time attendance at hospitals, and private doctors’ offices had been increasing. The level of satisfaction with the activities of the regional health care system is extremely low.

The trends noted above can be interpreted in the context of the paternalistic “doctor-patient” model change in the post-industrial countries, when a person is given more freedom in solving medical problems (Social Philosophy of Science, 2016, p. 207; Tishchenko, 2017, p. 32). As Foucault (1998) notes, “the patient is given the opportunity of joining in a reasonable measure — not too much and not too little — to the general form of the scientific protocol” (Foucault, 1998, p. 15). In addition, the role of technology as an intermediary between the doctor and the patient is being transformed. “The doctor (if he is not a psychiatrist) prefers to deal not with the whims and, strange as it sounds, not with the patient’s well-being and not even with his own impressions, but with the objective parameters of the patient’s body... The doctor’s responsibility is [...] to make the right decision about the state of health and methods of treatment of the patient, based on objective, technologically mediated data of experience. Consequently, the more we get technological intermediaries between the doctor and the patient “at the entrance,” the more objectivity and efficiency of the medical practice at the output (Social Science Philosophy ..., 2016, p. 207). This can lead to a paradoxical consequences: a decrease in trust in doctors and spread of self-diagnosis and self-treatment with the help of home measuring devices and information about treatment methods from the Internet (Prociow and Crowe, 2010; Hollis et al., 2015; Zhang, Yu, Yan and Spil, 2015; Birken et al., 2016; Kruk et al., 2016).

Yet the reasons for self-treatment practices spread against the background of paid medical services institutionalization may also be inaccessibility of medical services due to low incomes of citizens. And the low level of institutional trust in the health care system is due to the fact that going to a doctor does not guarantee the provision of high-quality medical services. Medical services in a consumer society become a commodity in a number of other goods, and a patient’s freedom to choose— a choice from the opportunities available on the market (Tishchenko, 2016, p. 32). At the same time, a person himself can easily be transformed into a “human material” — into one of many materials utilized by modern technology, including raw materials for technical production, for example, a substance for the manufacture of pharmacological preparations or a set of organs for subsequent transplantation” (Tyazhelnikov, 2010, p. 252).

An innovative trend in post-industrial countries is also restructuring of health care system based on the priority of primary care over hospital care. At the same time, “the reduction of hospital funds is more successful in countries with a centralized management system for medical institutions, on the contrary, decentralization of management and financing is an obstacle to structural changes” (Duganov, Shabunova and Kalashnikov, 2016: pp. 65–66). The problem of the primary medical care availability in the considered region of the Russian Federation is aggravated by the reduction in the inpatient care sector, which is manifested in statistical indicators such as reduction of beds.

5. Conclusions

Thus, according to the results of sociological monitoring, there is a problem of primary medical care accessibility, high cost of medicines and low trust in doctors accompanied by growth of paid services for residents of the Astrakhan region; attendance at polyclinics at the place of residence had been decreasing as well, at the same time attendance at hospitals, and private doctors’ offices had been increasing. The level of satisfaction with the activities of the regional health care system is extremely low. This indicates serious functional obstacles that stand in the way of innovative changes in Russian health care system. In dynamically developing modern Russian society, the preservation of public health is of great importance. In the framework of the national project “Health”, methods of preventing and early detection of diseases are being improved simultaneously in the Russian Federation and Astrakhan region. Though to improve the efficiency of this process, it is necessary to monitor the assessment of the public health system and take its results into account in modernization process.
Bibliographic references


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