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**THE EFFECTIVENESS OF FEEDBACK MECHANISMS  
FORMATION BETWEEN HEALTH AUTHORITIES AND THE  
POPULATION**

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**Abstract:**

*The health system has been working for a long time in the market conditions, and still not everywhere the administration is interested in the informatization of their work. This would not only increase the availability and quality of medical services, reduce the time of stay of the patient in clinics, but would also reduce the budget money to cover health- and social security related issues. One cannot disagree that the level of information transparency in health care of the Republic of Tatarstan is growing every day, however, the evaluation of the effectiveness of feedback mechanisms between the health authorities and the population is still not provided up to this day.*

**Key words:** *social performance, virtual health care, feedback mechanisms, health authorities and the population.*

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## INTRODUCTION:

The future of the welfare of any country always depends on the ability of the government to ensure development and functioning of the public health system. Reasonable priorities setting should serve as the basis for defining relevant strategic and current trends in this development, especially when allocated resources are limited, needs to be activity on the. Setting priorities in health care is the task for health workers, economists, politicians and representatives of the media. So, for example, analyzing a picture of morbidity and mortality, doctors contribute to the decision-making process through the identification of diseases which prevalence and consequences are leading society to major economic and social losses. The task of economists and health authorities is in comparing the effectiveness of different solutions to develop the industry from the point of view of the required inputs and outputs. Current and long-term priorities are influenced by a number of factors, including budgetary constraints, demand for services and political pressure. The media clarifies the main elements of national and regional policies to the population and ensures public control over the development of the industry.

Modernization and technical progress of the medical institutions carries insufficient analytical utility of citizens for affordable and quality health care.

## MATERIALS AND METHODS:

The "Electronic appointment to a doctor" service has been used throughout the country since December 2012. According to Ministry of health in 2011-2012 the budgets of all levels spent 28 billion rubles to introduce the electronic appointment service [1]. The electronic appointment service was designed to reduce endless queues to scarce specialists, but in real life it became almost absolutely impossible to get appointed to such a doctor. Calling the ambulance in many cases has become the only opportunity to receive at least some medical care. Why can't we first learn from foreign best practices how to apply effective feedback mechanisms between the health authorities and the population and then apply the knowledge to structure the information for a specific user? Electronic health care system contains information about activities of hospitals, clinics, doctors in private practices, pharmacies. The system stores electronically not only the medical history of every patient, but also their medical prescriptions, which, in its turn, get immediately transferred to pharmacies. And all these options are accessible for doctors and pharmacists and the patient.

The Republic of Tatarstan pays great attention to adoption and development of information technology, which also includes the healthcare sphere. The

regulation of the Cabinet of Ministers of the Republic of Tatarstan as of 16.09.2011 No. 771 approved the long-term target program "Development and use of information and communication technologies in the Republic of Tatarstan "Electronic Tatarstan", within which there is a section "the Development of ICT in health care". The formation of feedback mechanisms between the health authorities and the population is carried out according to the Law of the Republic of Tatarstan as of 11.04.2014 №25-LRT "On amendments to the law of the Republic of Tatarstan "On information systems and Informatization of the Republic of Tatarstan" and the law of the Republic of Tatarstan as of 16.01.2015 No. 3-LRT "On providing access to information on activities of state bodies of the Republic of Tatarstan and bodies of local self-government of the Republic of Tatarstan".

According to the order of the Cabinet of Ministers of the Republic of Tatarstan as of 23.05.2011 the Ministry of Informatization and communications of the Republic of Tatarstan was conferred functions of the state customer of services in organization and realization of information and analytical projects in the health care sector. Two data centers have been established in the Republic: one under the Cabinet of Ministers of the Republic of Tatarstan and the other one on the premises of Techno park in the sphere of innovative technologies "it-Park". The State integrated system of telecommunications of the Republic of Tatarstan has also been created. Today, however, it is necessary for the authority to conduct the performance audit. This would allow evaluating not only the efficiency of use of public resources in virtual health care, but it would also assess the implementation of the tasks set before the industry based on the developed criteria and indicators.

Health care institutions of the Republic operate within the same regional inter-agency electronic document management system "Electronic government" [1]. The system provides opportunity to implement non-medical paperwork in electronic form, which also includes the use of electronic digital signature. GAU "Dispatch center of the Ministry of health of the Republic of Tatarstan" coordinates the work of the health care institutions of the Republic of Tatarstan in a single information space by ensuring electronic routing of patients, compiling records for the patients to receive high-tech medical care and also by providing distance consultations, etc. There is a Central archive of medical images, designed for long-term storage, transfer and use of electronic images of medical examinations within the region: those are images and videos of ultrasound examinations, x-ray, magnetic resonance, computed tomography, etc. Subsystem serves as the technological basis for conducting remote medical

consultations. Currently 85 medical units in 12 facilities are connected to the subsystem, which, unfortunately, does not cover the full market of medical services [2].

**Table 1: Availability (activity) of vehicles in the "GLONASS + 112" system [3]**

Year	Name	All vehicles, $pc_s$	Equipped, $pc_s$	Connected to a single state information system "GLONASS +112"		Active in the unified state information system "GLONASS+112"	
				$pc_s$	%	$pc_s$	%
4th quarter 2014	Ministry of health (03)	406	406	100	406	100	259
4th quarter 2013	Ministry of health (03)	400	400	100	400	100	324
4th quarter 2012	Ministry of health	508	508	10	-	0	5
							0

However, when it comes to improvement of the geolocation service, then we see no evidence of progress regarding this issue for many years. The geolocation feature should definitely be adopted as it is an integral part of 112. Some communications service providers are already willing to introduce this feature and some regions already have this option available, but in other regions and other operators don't have this technical capability. In most cases this would require serious upgrading of the operator's equipment. There are also problems in availability of normative documents, methodical recommendations on the system operation was developed and posted on the website of the Ministry of communications recently — June 19, 2015.

The system of "Healthcare Web-Monitoring" has been created. This is a portal, used by the Ministry of health of the Republic of Tatarstan and its subordinate agencies. The portal is designed for reception and delivery of statistical reports.

Health care institutions Tatarstan, with the total staff number of more than 80 thousand people (including 11 669 of doctors and 35 170 nurses) experience a lack of modern computer technologies necessary for its medical personnel (only 15% of the staff is well equipped) and thus medical staff experience difficulties working with this kind of technology [2]. times in 2014 through the Portal of public and municipal services of the Republic of Tatarstan, the terminals of Electronic queue, interactive kiosks, mobile apps, AWS of physician residents of the

By the end of 2011, all stations and emergency medical services of the Republic of Tatarstan were connected to the system GLONASS+112.

Republic of Tatarstan. However, the problem of making an appointment at the right time with the right specialist still remains. In order to solve the issue, it would be advisable for the health authorities of the Republic of Tatarstan to assess the efficiency of formation of mechanisms for public feedback. For this purpose, annually and quarterly, one must calculate the social efficiency ratio, which expresses the degree of satisfaction of consumer demand for the services of an appointment to the doctor electronically through a single system and it is calculated by the formula 1: the total number of residents

*the coefficient of social efficiency =*

$$\frac{\text{the number of patients subscribed electronically for the appointment through a single system}}{\text{the total number of residents}}$$

(1)

In 2014 a Mobile diagnostic complex "Affordable medicine" (MDK "Affordable medical care") for remote monitoring of health status was introduced into commercial operation. The important feature of the complex is that it can be used by medical and nursing staff, which significantly reduces the load on doctors and specialized doctors, because the mobile medical equipment for diagnostics is available. At the beginning MDK "Affordable health care" has a modular structure, it includes certified devices such as pulse oximeter, glucometer, realization, 12 channel ECG and tonometer. Thus, patients can get their service

without waiting and without having to travel to the district center, without obtaining the diagnosis of diseases of the cardiovascular, endocrine and urogenital systems, measuring heart rate, blood pressure, pulse, blood sugar level, the level of oxygen saturation of blood, composition of urine. These medical examinations are transmitted to electronic patient record in EGIS "E-health care RT".

However, according to? The report of the Minister of health of the Republic of Tatarstan from 10.07.2015 G., diseases of the cardiovascular system retain its leadership among all causes mortality (52.2 per cent). Therefore, the efficiency health care institutions and the health care sector in regard reducing deaths from diseases of the cardiovascular system should be assessed by means of modern high-tech methods of diagnosis and treatment, the use of which is aimed at preserving the life of patients.

Also nowadays, the provision of the organizational-methodological support of business processes in health care (patient routing, electronic queues operating, etc.) are the main objectives required for efficient work of EGIS "E-health care RT". The new modules EGIS "E-health RT" – "vaccinal prevention" and "prophylactic medical Examination" are yet to be introduced into commercial operation. The EGIS "E-health care RT" and Program complex for automation of activity of medical institution (Medical information system) in SAHI "Republican clinical

Oncology dispensary of MOH of Republic of Tatarstan" should be provided with Insurance number of the personal account of the citizen in the mandatory pension insurance system databases for further interaction with the information systems of Tatarstan.

### RESULT AND DISCUSSION:

After analyzing the ratings, created by AIA News on the work of regional bodies of health administration online, we can claim the existence of problems of formation of system management of virtual healthcare. The websites of the regional health care authorities play mainly, only two roles: advocacy and feedback system. It is impossible to disagree that the level of information transparency in health care of the Republic of Tatarstan has increased compared to 2011. Thus, in the beginning of 2015, despite the fact that the rating of the Republic of Tatarstan remains in 12th place, some positive dynamics in active development of this type of resource is the regional health authority is observed, but health management system, allowing the patient to carry out self-diagnosis and monitoring of his condition still does not exist. Such system, which allows the patient to choose the right (relevant) specialized doctor, would save time on useless visits to the most valuable specialists of the XXI century, i.e. the General practitioners.

**Table 2: Attendance statistics of the Ministry of health website of the Republic of Tatarstan for the period 2014 – 2015[3]**

During the visit, months	The number of visits for 2014, pers.	The number of visits for 2015, pers.
January	162049	195886
February	186773	205446
March	204694	175928
April	201579	211044
May	158337	179375
June	226591	276661
July	169411	165126
August	176577	156852
September	187097	153738
October	191584	179506

Table 2 demonstrates that since the beginning of 2015 there is a slight increase in website traffic of the Ministry of health of the Republic, but since July to this day, in comparison to the 2014 year, the number of visits decreases. (3) The following information at the website is still the least accessible for the population: information about drug coverage for citizens, a mandatory minimum of medicines, as the procedure for granting of privileged medicines, the procedure of attachment of citizens to health care facilities, as well as the provision of medical assistance to foreign nationals. The population doesn't have the list of population groups and disease categories which belong to the category of exemptions; the list of medical organizations where you can buy discounted medicines, as well as the main working element of the feedback –forum, is lacking.

### **CONCLUSION:**

The health system has been in the market for a long time and still not everywhere the administration is interested in the Informatization of their work, which will not only improve the quality of care, reduce the time of stay of the patient in hospitals, but will also reduce the load of the budget for health and social security purposes. The current situation of information resource deficit requires urgent measures aimed at the restructuring of these mechanisms and optimizing use of limited financial resources for their operation. There is a great need to automate processes and information sharing, providing access to data by creating electronic medical records, development of information-analytical system, as well as the development of standards that addresses the economic barriers of interaction between the health system and population.

The indicator of evaluation of economic effectiveness modernization of virtual health care is the ratio of incurred costs and obtained results. The economic data will further improve the monitoring of implementation of measures aimed at the restructuring of these mechanisms and will result in a new quality of medical services, especially in resource-limited settings. Implementation of these measures will be followed by economic results, such as a reduction in the average number of staff required to register the treatment process, there will be an increase in the average number of medical services

per unit of time, the losses is a recurrent disease will be reduced, the costs for printing of medical information leaflets will be decreased as well.

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