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Developmental Context: Evolvement of the EHR Systems in the Russian Federation

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Abstract

Today's milieu of healthcare information systems on the post-USSR territories is a loose alloy of the inherited pre-perestroika structures with the modern healthcare governance initiatives, against the background of the rapidly developing private sector in the medical IT-industry. By providing a general picture of the diverse infrastructure that the new IT-systems of today rely on for better care delivery, we have tried to outline and accentuate the following: a growing degree of awareness of the need to develop this sector, to eliminate the inefficiencies of the triple-channel system of care budgeting, with each of the three elements – the Social Insurance Fund, the Obligatory Insurance Fund, and the Pension Fund of the Russian Federation – often serving literally the same means, and the developmental context for the formation of a nation-wide system of the personal socio-medical records in the Russian Federation.

Keywords:

medical record systems, computerized; academies and institutes; social security; insurance; funds; public health; data collection; registries; Russia; Russian Federation; Moscow; center, academic medical; pensions; retirement benefits; international health problems.

Introduction

In the Russian Federation, electronic medical records as such have been first delved into in the mid-sixties. That is when the first Russian works on information technologies in healthcare were published. The era of the seventies was marked with the first IT-systems applied at medical organizations, followed by the first corporative clinical information systems.

In the late seventies the USSR had its first computerized analytical centers at both national and regional levels. The systems primarily tended to the state's needs in aggregating medical statistical data.

These analytical systems matured through the 80s into the 90s, and at the moment the USSR ceased to exist in 1991, the network, comprised of these centers, was devoid of its vertical administrative support structure. From then on they went through a number of transformations to become the medical information-analytical centers as we know them today.

Today more than 40 constituent territories of the Russian Federation have their own medical information-analytical centers. Other territories of the Russian Federation have their own medical statistics bureaus within their healthcare governance structures. The Russian Academy of Medical Sciences, the top-level executive organ in medicine for the whole Federation, established its own Medical Center for Information and Analysis as a not-for-profit, non-governmental organization in 1997. Its primary function was registration of the data related to the high-cost federal budget care delivery and scientific research in the field of public healthcare (see Figure 1 and 2).

Current context

There evolved, and are functional, ten systems that register personalized information about the population of the Russian Federation (see Figure 1). All ten systems formed in different historical periods, vary greatly as to the motives for their establishment and are supported by different resources.

The State Automated System "Elections" [1] provides for personalized registration of all voters across the territory of the Russian Federation. All the voting-age citizens of the Russian Federation are registered by the computerized Information System which collects the following data: full name, date and place of birth, sex, citizenship, place of residence, and type of the identification document. Every citizen has the right of full access to his or her personal file.

The Visa and Passport Service within the Ministry of Internal Affairs that collect all personal data related to issuing passports and granting Russian citizenship.

The Civil Registry Office registers all the personal data pertinent to institution of marriage.

There are more than 800 clinical information systems across all the medical organizations in Russia today [2]. The non-state structures that form their own databases of socio-medical nature for the purpose of conducting their own business are various insurance companies and retirement funds, medical organizations, medical information-analytical centers, such corporations of the national scale as JSC Russian Railways, and JSC Gazprom, etc.

Seven of them are of the socio-medical character.

Figure 1 – current systems for the personalized registration of data in the Russian Federation

Taking into account their technical, human, and financial resources, three of them are capable of becoming system generators for a common system of the population data registration based on personal health records. All three are also public services – three of the government-established non-budget funds: the Pension Fund of Russia, a block of 91 Funds of the Obligatory Medical Insurance, and the Social Insurance Fund. There are rapidly developing mechanisms of exchanging information between all of them (see Figure 2).

The Social Insurance Fund [3] pays for medical care rendered to the disabled citizens, patient transfer to the organization where they have been referred to receive expensive hi-tech services, long-term care facilities for senior citizens, resort spa-and-rehabilitation packages, medical leaves, pregnancy and maternity leaves until the child reaches the age of 3 years old, and occupational disease and incapacitation compensations. This Fund, with its structure, resources, and mechanisms, has been inherited from the former USSR.

The Fund of Obligatory Medical Insurance [4] is a new formation (founded in 1993). It finances medical care rendered to the citizens of the Russian Federation within the framework of the State social guarantees toward free medical care provision. It has a system of registration of the personified data on services rendered.

The Pension Fund of the Russian Federation [5] collects the data on all the retired and working-age citizens – all employers are obligated to report to the Fund the number of their employees and the amount of their wages. Apart from that, there is a well-established data link for information exchange between the Fund of the Obligatory Medical Insurance and the Pension Fund for the purpose of providing medical care and medications to the retired. The key element of the Pension Fund is its unique system of the social security numbers that it assigns to each citizen of Russia. This number has a counterpart within the structure of the Obligatory Medical Fund and its 90 territorial branches – the unique number of the personal insurance police. As there is no federal-level uniformity amongst the subsystems (every Obligatory Medical Fund of each region has its unique ways of assigning numbers that evolved historically), it is considered highly desirable and productive to merge all the Obligatory Funds around the stem of the Pension Fund with its social security numbers identification system.

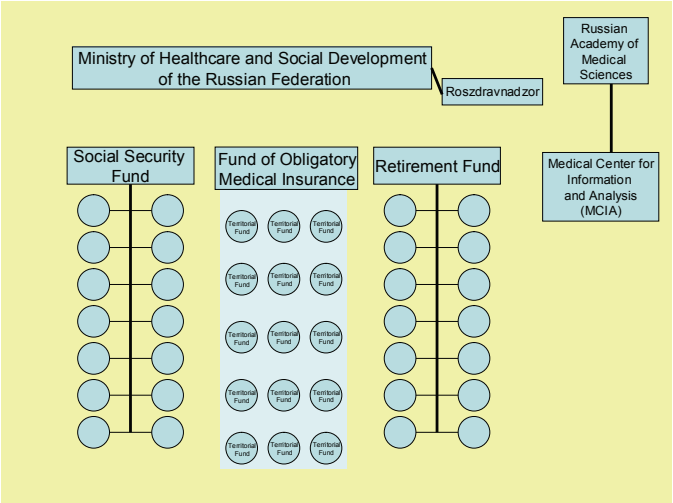

Figure 2 – Three existing systems capable of becoming central in the national health information system

Licensing, supervision, and control functions are carried out by the federal executive organ in the system of healthcare and social guarantees – ROSZDRAVNADZOR [6] as a federal service within the Ministry of Healthcare and Social Development of the Russian Federation.

The national system of the personified socio-medical data registration is in its stage of active development. There is an evident need to define a nation-wide approach, to develop normative rules and creation standards, to actualize the system of aggregating, processing, and maintaining personified data of socio-medical character on the basis of personal socio-medical records.

In order to achieve a high level of interoperability and general performance with a national model, it is necessary to accept and adopt international guidelines, classifications and protocols of exchanging and safeguarding information.

Consolidated efforts of the information and communication technologies of the country should be directed at developing a national system in the nearest future. The "rules of the game" are a pre-requisite for this step – there

should be an architecture design as well as normative rules for establishing a national system of the socio-medical data with the basis on the personal socio-medical records.

A national system for the personified registration of the socio-medical data is developed and structured with the aim of improving social care delivery and making social care more accessible, extending the nations' life-expectancy, and improving its health. In this capacity, the system will become a fundamental element of the national priority project in healthcare.

Rapid evolvement of the global tendencies in public healthcare is inevitable, so is the quantitative aggregation and qualitative advancements in the development of the world-wide clinical databases (applied medicine, etc.). Russian model of the system for the personified socio-medical data registration is technologically the most advanced on the post-USSR territories. For the purpose of registration of the personalized socio-medical data it is necessary for the European, North-American and Russian systems to be maximally synchronized for best results.

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