Public Disclosure Authorized

Integrated Health Care: International Experience and Its Relevance for the Russian Health System

Author: Igor Sheiman

June 2019

Contents

Executive summary

This policy note has the objective to highlight the international integration tools to strengthen teamwork, coordination and continuity of health care and develop recommendations on their use in Russia. The major criteria for the choice was their relevance for the Russian health system. The list of instruments includes:

1) strengthening the role and coordinating function of primary care physicians;
2) development of the forms of vertical and horizontal interaction between health providers;
3) development of integrated models for managing patients with chronic and multiple diseases;
4) intensification of information exchange between providers;
5) development of integrated pathways for service delivery;
6) development of economic incentives though new provider payment methods.

Strengthening the role and coordinating function of primary health care (PHC) physician is one of the most important pre-condition for integration. In Russia, coordinating and gatekeeping function of PHC doctors has weakened recently as the result of a substantial shortage of district physicians. The current attempts of the Government to cope with their shortage under the National Health Priority Project should be complemented with a set of integrative activities, including:

- Re-vitalization of referrals to specialists.
- PHC physicians' training on their role as coordinator.
- Inclusion the function of coordinator in PHC physicians' job description.
- Development of regulation ensuring that district physician not only refers patients to specialists but also recommends the most appropriate providers, overviews the results of a specialist visit and explains the following steps of a patient, plans curative activities together with specialists.

Development of the vertical and horizontal integration between health care providers. In Russia, concentration of health care providers is not always accompanied with actual integrative activities. To strengthen the impact of provider concentration on vertical and horizontal integration, it is recommended to enhance the level of medical and economic justification for making decisions on the unification of health providers with a focus on ensuring actual integrative activities. Specific forms of integration with a focus on the interaction between polyclinics and hospitals should be developed, including:

- provision of information to polyclinics on all hospitalizations in the catchment area to ensure subsequent after-discharge treatment;
- joint development of a hospital discharge planning procedure, provision of the necessary information to polyclinics for timely follow up and management of patients after discharge from the hospital;
- arrangements for regular consultations to be provided to polyclinic physicians by hospital doctors, training sessions;
- improving communication regarding the justification of referrals to hospitalization and pre-admission diagnostic procedures;
- improving communication between polyclinic and hospital doctors regarding complicated cases;
- involvement of polyclinics in planning of inpatient care.

Development of integrated models for managing patients with chronic and multiple diseases. The international chronic disease management programs are explored and compared with similar arrangements in Russia with the conclusion that the Russian programs are limited in

scope and lack some activities. Given their limitations, the following activities are recommended:

- Setting-up chronic patients' registration system with risk stratification.
- Organization of multidisciplinary teams for patient management.
- Appointment of disease management program coordinator. The best option is a general practitioner or district physician (pediatrician).
- Conclusion of agreements between chronic patients and providers.
- Promotion of proactive prevention and managing of chronic conditions.
- Establishment of algorithms for PHC doctors' actions immediately after the hospitalization of complicated patients, assignment of doctors responsible for their follow up.
- Establishment of contacts between PHC doctors and hospital doctors.
- Improving communication with the relatives of acute patients.
- Monitoring process and outcomes of activities.

Intensification of information exchange between healthcare providers. Health care data integration is considered a cornerstone of every systematic attempt to achieve integrated patient care. Data integration has the potential to provide multiple stakeholders with critical, timely, and detailed information for short- and long-term decision-making, documentation, and it supports attempts to achieve structural and functional health care coordination and integration. The international experience of organizing information exchange is presented and compared with Russian practices with the following recommendations:

- The model of health care organization should be first specified with the following development of IT system to serve it – not on the contrary, which is the case in Russia.
- The detailed planning and ongoing assessment of health care data integration is needed to ensure accurate and effective coordination of information.
- The integration of information requires common rules for its use: clearly specified actions of doctors in regard to patients, especially those with particularly high risks.
- Arrange additional forms of information exchange, including feedback of specialists after consultation, provision of information on admissions and ambulance calls to district physicians, on-line consultations, control of recommendations implementation after hospital discharge by polyclinics physicians.

Development of integrated pathways for service delivery. In Russia, the pathways exist but they mainly aim at determining the requirements for health care resources. Given the international experience, it is important to consolidate the integration component of pathways with a focus on ensuring comprehensiveness and continuity of care. It is recommended:

- Include in the pathways the algorithms of interaction between individual providers to ensure continuity of care at various stages of service delivery.
- Include process and outcome indicators.
- Ensure compliance with algorithms and indicators in the quality control activities.
- Expand the scope of quality reviews conducted by health insurance organizations. The review should focus on quality of post-hospital care and continuity of treatment at different healthcare delivery stages.

Development of economic incentives to ensure closer interaction between health providers. Capitation model complemented by pay for performance payments, episode-based bundled payment and global budget are highlighted as the options for Russian health care system based on the international evidence. The following models are recommended for Russia:

- Introduce pay-for-performance for polyclinics to complement the current capitation payment method to promote: a) development of chronic disease management activities,

b) more intensive information exchange between physicians, c) coordination function of primary care providers, d) effective after-discharge clinical activities.

- Develop bundled payment rate for inpatient care and medical rehabilitation for the specified period of time after hospital admission.
- Establish a managerial control of services under global budget, including the enrolment of patients, a sound referral system, a careful specification of the services under global budget, measuring the input of each provider.

1. Introduction

Over the past two decades, there has been a notable growth of interest in integrated healthcare delivery globally. Concrete integration programs have been developed and are underway in the U.S.A. and most European countries. The results of their implementation are being extensively discussed in literature on health economics and management. The World Health Organization presented the Global Strategy of People-Centered and Integrated Health Services. The International Foundation of Integrated Care was established to focus on the matters related to the integration of efforts of various healthcare providers.

The increasing attention to the issue is due to numerous traits of healthcare fragmentation. The key fragmentation traits include inadequate coordination of the activities of individual providers, low level of teamwork, lack of focus on ensuring continuity in medical treatment at various stages of the medical and technological cycle. According to the results of a population survey in 11 European countries, over 10% of patients report that they have been faced with the problem of contradictory recommendations from different doctors. 40% of hospitalized patients stress lack of treatment continuity after hospital discharge (i.e. inpatient and outpatient doctors do not properly coordinate their work), 20% of patients state that their permanently doctors are not aware of their hospitalizations (Nolte, 2017).

Fragmentation of the activities of healthcare providers has turned into a serious challenge for the healthcare governance system in developed countries. *Copying with fragmentation and shaping an integrated healthcare system has become an independent area of government policy.*

The Russian health system also features processes related to the fragmentation of healthcare. There is empirical evidence of the lack of coordination between the activities of individual providers and medical workers. The health system loses significant funds at the "interface" between such providers due to their lack of focus on teamwork and overall performance (Shevsky et al., 2013). In recent years, certain positive processes have emerged, which consolidate the interaction between healthcare providers. The most important of them are the establishment of a unified information system, development of a multi-tier healthcare system, and the formation of united medical systems. All of them are worthy of further

development but the variety of integration activities is still rather limited, and some of the organizational and economic integration mechanisms already proven abroad are still unknown in Russia.

The purpose of this paper is to present the most interesting integration tools used in developed countries and discuss the opportunities for their use in the Russian practices. The first section provides the definition of integration, identifies its key characteristics and tools. The second section presents the tools with recommendations for their practical use in the Russian health system. The third section outlines the role of governance and regulation in this area.

2. Definitions, characteristics and tools related to integration

The concept of integrated care in its most general form is defined as "a coherent set of methods and models on the funding, administrative, organizational, service delivery designed to create connectivity, alignment and collaboration within and between the cure and care sectors." (Kodner and Spreeuwenberg, 2002)[1].

The WHO European Bureau refined this definition by referring to the need to "combine the services relating to diagnostics, treatment, care, rehabilitation, and promotion of a healthy way of life" (WHO, 1996). This definition focuses on the medical and administrative aspect of the activities – collaboration and cooperation of healthcare providers and various medical professions targeting the achievement of a higher ultimate result in the treatment and prevention of diseases. But in addition to the above aspect, the notion of integration includes financial and managerial mechanisms intended to strengthen the interaction between separate healthcare providers.

The notion of integrated care has not yet asserted itself in the Russian literature on healthcare while it is totally missing in statutory regulations. That is largely due to the prevailing idea that the problem is not very relevant for Russia since integrated care is already a part of the existing health model. And there are certain reasons for such a mindset. The traditional Semashko model (that is how the Soviet public health system is referred to in the western literature) distinguishes the following vital elements of integrated healthcare (Semashko, 1947):

- care delivery based on health districts, district doctor's responsibility for the health condition of the continuously observed population;
- joint work of different medical professions in the framework of a multi-profile polyclinic;

[1] Translated from Russian

- multi-tier care delivery, with each tier corresponding to a certain level of disease severity;
- government administration of the system making it possible to establish forms of interaction between separate healthcare providers.

The key integrator in the theoretical model by Semashko is the local district doctor who does not only treat patients him/herself but also organizes and coordinates healthcare at other stages of its delivery. He/she continuously follows up the district population, and ensures the continuity of treatment at various stages. A multi-tier healthcare structure and coordinating function of the district doctor – these central ideas of Semashko's model are being widely analyzed and promoted today in western literature as important elements of the integrated system even though Russia's precedence in these integration elements has already been to a great extent lost, as will be shown in continuation.

Modern Western literature picks out similar and additional characteristics of integrated care. For the particularly fragmented U.S. health system, well-known American economist A. Enthoven distinguishes the following features of integrated systems: a) teamwork aimed at connections with other healthcare delivery elements and attainment of the ultimate result of patient management; b) coordination and information exchange between different medical professions; c) measuring the activities of selected healthcare providers, and performance accountability; d) keeping track of patient's movement between healthcare providers, as well as of the patient's condition and volume of services received. There is a special emphasis on the *principle of shared responsibility for the entire medical and technological cycle of patients' management.* In the fragmented model, the primary care physician usually "loses" his/her patient after referral to a specialist. In the integrated system, the physician coordinates the patient's movement to specialists with subsequent feedback. Such model enhances the ultimate treatment results as the patient is under control of one doctor or healthcare coordinator at all the stages (Enthoven, 2016).

Integrated systems feature a change in the proportion between inpatient and outpatient care. *Hospitals are increasingly regarded as cost centers rather revenue centers.* An increase in the number of hospital admissions in the emerging integrated systems is a sign of poorly developed outpatient care so best efforts are being made to strengthen it. In equal measure, there is a focus on increasing treatment continuity in various parts of the system – it helps to reduce the costs relating to their estrangement and ensure a higher ultimate treatment performance.

D. Berwick et al. (2009) distinguishes the following integration characteristics:

a) responsibility of a group of healthcare providers for particular population (i.e. repeating Semashko's central message);

b) work based on a fixed budget allocated for continuously observed population, which creates strong incentives for the search of intra-system sources of savings;

c) introduction into the system of an «integrator" – a healthcare provider undertaking the responsibility for delivering healthcare to a particular group of population;

d) education of chronic patients, continuous communication with them;

e) a shift from individual medical practices to collective forms of primary care delivery, with the involvement of specialist doctors and close cooperation with hospital departments.

D. Cortese and R. Smoldt (2007) supplement it with closer ties between the outpatient doctor and hospital, and integrated methods of healthcare financing based on payments for bundles of interrelated services rather than for isolated services. A paper by A. Somanathan (2018) distinguishes six key tools: reorganization of care providers to implement the principles of patient-oriented healthcare; shaping of an information infrastructure for data exchange; monitoring healthcare providers and feedback tools; involvement of patients in healthcare delivery, financial incentives for joint work; training of medical workers capable of working in interdisciplinary teams.

Based on the above mentioned papers, we distinguish three summarized *integration characteristics*: 1) joint efforts of various medical services, 2) coordination of their actions, 3) continuity in healthcare delivery. These characteristics most fully describe the process of integration: the setting-up of interdisciplinary teams of healthcare providers operating on the basis of shared clinical recommendations; they interact with each other to achieve a higher clinical result; each phase of patient's management is linked to the previous and next phase. To attain the above characteristics the following most important *integration tools* are used:

1. strengthening of the role and coordinating function of the primary care doctor;
2. development of the forms of vertical and horizontal interaction between healthcare providers;
3. development of integrated models for managing patients with chronic and multiple diseases;
4. intensification of information exchange between healthcare providers;
5. development of integrated pathways for healthcare delivery and efficient referral system;
6. development of integrated payment rates for a package of interrelated types of healthcare.

The list of such tools can be supplemented but we have singled out those which are most essential for the practice of the current health system in Russia.

3. Integration tools

3.1 Strengthening of the role and coordinating function of the primary care doctor

Many international researchers emphasize the special role of the general practitioner as the system's gatekeeper referring patients to specialist physicians and for hospitalization (as opposed to the model of direct contact with specialists). Such doctor acts as patient's agent setting up medical and technological links in the multi-tier health system. Empirical proof has been accumulated, which shows that in countries where general practitioners perform gatekeeper functions in health system, more attention is attached to joint work and continuity of care (Calnan et al., 2006). Moreover, a certain pattern has been identified: in the OECD countries where general practitioners refer patients to specialists and perform the coordinating function, the volumes of inpatient care and total healthcare costs are lower thus ensuring cost savings (Sheyman, Shishkin, 2012).

An attitude is growing up that the goals of enhanced integration can only be achieved if there is a permanent "list of patients" (Kringos et al., 2015), or using the terminology adopted in Russia – through the use of the district-based primary care delivery. Only this kind of arrangement can ensure the *responsibility of district physician for the health condition of continuously observed population.*

It is noteworthy that the highest attention to the role of coordinating function of primary care is currently reported in the U.S.A. where traditionally the population has not been attached to a particular general practitioner, and there is a shortage of such doctors up to date. Emerging integrated systems impose increasing requirements for coordinated healthcare delivery, providing for more intense interaction between individual providers and reduction in the time it takes to find an appropriate provider. Table 1 gives an example showing the differences between coordinated and non-coordinated healthcare in the real practice of the U.S. health system.

Table 1. Comparison of coordinated and non-coordinated care models in case of suspected breast cancer in the U.S.A.

Patient management phases	Coordinated healthcare	Non-coordinated healthcare
Referral for mammography	GP issues a referral. His/her office workers prepare a timetable and find an appropriate care provider.	GP issues a referral. The patient herself searches for a care provider.
Subsequent visit to the general practitioner	GP receives mammogram results and makes another appointment. The patient is provided with information about her condition, if needed biopsy is recommended. Information is provided about the available surgeons as	Next appointment is not made. In the best case, a general practice worker informs the patient over phone of the need for biopsy after receiving mammogram results.

	well GP's role as the patient's medical advocate.	
Referral for biopsy	The general practice worker helps the patient to select a surgeon, and books an appointment.	The patient looks for a surgeon herself and books an appointment.
Information exchange between the general practitioner and the surgeon	The results of diagnostic tests and necessary information regarding the patient's health condition are sent by the general practice worker to the surgeon before the patient's visit. The biopsy results are sent to GP.	The test results and information about the patient are sent to the surgeon upon his request. The biopsy results are not sent to GP.
Informing the patient of the likely treatment options	Upon receiving the results from the surgeon, an extra GP appointment is made to provide the patient with information about all the possible treatment options.	The patient herself selects the treatment using surgeon's recommendations.
Treatment planning	Treatment planning is done by GP/coordinator jointly with the patient.	Treatment planning is done by the patient herself after visiting various specialist doctors and taking into account their recommendations (which do not necessarily match).

Source: Stille et al., 2005 (adapted)

In the above example, coordinated healthcare focuses more on patient's needs, and reduces the waiting time before the start of cancer treatment. Thereupon, the likelihood of positive treatment outcome increases.

Also interesting are the tools increasing the role of primary care physicians (Rice, 2011; Keshvani, Walsh, 2013; Essential hospital institute, 2013):

- *involvement of these doctors in the medical direction of hospital systems*. They are given the leading role in the organization of closer interaction between doctors from outpatient clinics, hospitals, and rehabilitation centers providing for appointments with discharged patients, follow-up treatment in the outpatient setting, with an overall responsibility for the outcome;
- *establishment of a healthcare quality management system shared by medical practices and hospitals*, including: a) adaptation of the existing clinical recommendation and standards to the particular care provider environment; b) creation of a common reporting system based on "composite" clinical activity indices (rather than separately for hospitals and medical practices; c) creation of individual doctor records to detail the volume and structure of their clinical activity, degree of complexity, and clinical outcomes; d) regular discussions of the clinical practice involving doctors from related medical services;
- participation of major general medical practices in planning of inpatient care volumes.

In the Russian context, the activities aimed at increasing the district doctors' coordinating function are vital. It is only possible based on the consolidation of the above mentioned "gatekeeper" principle, which is eroding in recent years. According to the surveys of district doctors conducted by the National Research University Higher School of Economics at the end of 2016, 83% respondents believe that the patients from their districts apply directly to obstetrician/gynecologist, 75% - to urologist, 70% – to ophthalmologist, 69% - to ENT specialist and dermatovenerologist, 35% - to neurologist, 22% - to cardiologist (Sheiman et al., 2019). Without *restoring the patients' referral system*, it is difficult to ensure the coordinating function of the district doctor.

It is important to note that limited coordination functions of district physicians is the result of the acute shortage which amounts to around 30 % pf district therapists (adult care) and 10% of district child care doctors (Sheiman et al, 2019). Currently, there are activities to cope with this shortage under the National project "Health care". They should be complemented with the activities to strengthen the coordination role of primary care providers.

Training of general practitioners should focus not only on their mastering some of the functions of specialists but also on the implementation of coordinating work as well. Such doctors should become the key integrators of healthcare accumulating all the information about the services provided to "their" patients, and acting as their representatives for healthcare delivery at other stages. They should turn into a kind of patients' "pilots" in a shoreless sea of medical technologies and services.

It is worth mentioning that the typical job descriptions and other statutory regulations on the activity of primary healthcare doctors in Russia do not mention the district doctor' coordinating function at all. The district doctor has been long regarded as a specialist in a limited number of trivial diseases. His/her clinical functionalities should be broadened (as recognized today), however, there has been no talk of such doctor's central role in healthcare organization – in the way it was originally stipulated in Semashko's model but then practically disappeared under the influence of excessive specialization of primary healthcare.

3.2. Development of the forms of vertical and horizontal interaction between healthcare providers

Horizontal interaction is carried out between healthcare providers of the same level i.e. between district doctors and outpatient specialists, between physicians from curative and diagnostics divisions of polyclinics. Vertical interaction is based on strengthening the relations between healthcare providers of different care delivery levels, e.g. between polyclinics and hospitals, rehabilitation centers etc. The development of such interaction can be achieved through concentration of healthcare providers – their mergers, and formation of hospital

complexes and outpatient-inpatient systems. However, it is also possible to consolidate networking interaction based on contracts or informal agreements.

Recent years have seen a growth in *concentration processes among healthcare providers* in Western countries. In 2000-2010, there were 640 hospital mergers in the United States (Schmitt, 2017). The share of medical practices owned by hospitals grew from 30% of the total number of practices in 2004 to 55% in 2009 (Stacey, 2012). Similar processes are underway in the UK and France (Gaynor et al., 2012; Nolte, 2014). Integration processes have intensified within major healthcare centers. Healthcare quality management systems shared by medical practices and hospitals are being set up. Procedures are being established to regulate the actions of doctors of different levels, including compulsory information exchange between them. Interdisciplinary teams made up of physicians and nurses are being formed with the participation of hospital doctors to manage patients with chronic and multiple diseases. To encourage integration, bundled payment rates are increasingly used, which are calculated per person choosing the integrated system.

Increased interest has been reported in large-size forms of primary healthcare. The process develops along two vectors. The first vector consists in the *unification of individual medical practices and formation of polyclinic-type entities.* General medical practices include social workers, psychologists, 2-3 categories of specialist doctors, and several categories of nursing staff (Kringos et al., 2015). But the level of unification is incomparable with the model of the Russian urban multi-profile polyclinic with 17 to 20 specialists gradually replacing district doctors. The trend towards bundling of primary healthcare providers in Western countries does not yet imply borrowing the Russian polyclinic model. Such polyclinics are operating in a limited number of countries but with a few exceptions (e.g. in Finland) they are not the key form of primary care organization.

The second vector is the establishment of medical practice networks operating based on formal and informal arrangements, e.g. in England (Iacobucci, 2019). Interest towards them is growing in many Western countries. However, the principle of independent individual and group practice is not questioned. Their ultimate responsibility for the health of the catchment area population is still outweighing the opportunities offered by teamwork in the framework of large organizational structures. The former already exists, while the latter requires special integration activities to be carried out.

The empirical assessments of the efficacy of the formation of large integration systems are rather contradictory. Shortell and Schmittdie (2004) demonstrated closer links between outpatient practices and hospitals, and a wider spreading of chronic disease management programs in major integrated systems in the U.S.A. A systematic review of research on the U.S.A. conducted by Hwang, et al. (2013) showed that 19 out of 21 articles on concentration

efficacy revealed a higher healthcare quality and lower unit cost of hospital stays (per patient) in integrated systems compared to independent healthcare providers with fee-for-service payment. However, these results are opposed by other surveys. Dranove and Lindrooth (2003) showed that large associations of local hospitals in the U.S.A. achieved short-term reductions in the administrative cost but it had no effect on the general costs and medical care quality compared to independent hospitals. Kaul et al. (2016) did not discover any relationship between the size of integrated systems (with 520 associations reviewed) and the unit cost under the Medicare and Medicaid programs in the U.S.A. Similar conclusions were drawn in the studies on the UK (Fulop, 2002; Posnett, 1999).

The authors explain the absence of relationship by the fact that many associations are of a formal nature. Branch providers are frequently guided by their own rules, and are not an organic part of integrated systems. *To strengthen interaction between service providers, it is necessary to implement actual integration activities rather than formal mergers.* In the absence of such activities, other factors get the upper hand such as the complexity of managing large complexes, reduced level of competition, slackened economic incentives for certain divisions of the formally integrated system.

The concentration process of healthcare providers in Russia has also intensified over the past decade. Polyclinics have been merging with hospitals. At present the share of independent polyclinics accounts for mere 36% of their total number (49% in 2000), the others operate as part of combined hospitals. In 2000-2014, the number of independent healthcare providers went down by 60%. The number of hospitals decreased by more than a half, and the number of outpatient polyclinics – by 35% (Sheyman, Shevsky, 2019). In a number of regions, e.g. in the Moscow Oblast, large healthcare complexes are being formed to include practically all territorial healthcare providers. In fact, they use the same pattern as hospital systems and inpatient-outpatient associations in western countries. In 2012, all Moscow polyclinics were united into large outpatient centers – 5 to 7 polyclinics in each center.

The main positive result of concentration is the increased opportunity to handle the resources. The centralized level is used to tackle issues related to restructuring providers network – to close small and inefficient institutions, centralize scarce resources, regroup certain medical services to ensure more effective use of resources. It is logical to suppose that the concentration is to result in boosting teamwork, coordination and continuity of healthcare delivery since the administrative unity environment allows developing a closer interaction of individual providers. But our estimates do not confirm the hypothesis. A survey of the leaders of 4 polyclinics and 5 hospitals in Moscow based on a common questionnaire showed that when preparing a patient for hospitalization polyclinic doctors rarely align their actions with those of hospital doctors; hospital doctors in their turn extremely seldom advise polyclinic physicians

regarding patients' management tactics after hospital treatment. All of the surveyed chief medical officers from hospitals unanimously assessed as unsatisfactory the general level of interaction between the staff of hospitals and polyclinics. A comparative analysis of the level of integration in the environment of independent polyclinics and combined hospitals based on the survey of 1,500 from 13 Russian regions showed that combined hospitals had no advantages in terms of teamwork, coordination and continuity of care. Neither do such advantages exist for large territorial healthcare complexes (Sheyman, Shevsky, 2019).

International and domestic experience shows that it is essential to "fill" provider concentration with actual activities towards the integration of individual providers performance. *Functional integration, i.e. the consolidation of interaction between healthcare providers, should be given a higher priority compared to organizational integration.* The following specific recommendations relating to the management of concentration processes can be suggested:

1. Enhance the level of clinical and economic rationale for making decisions on the unification of healthcare providers with a focus on ensuring a true integration of the operation of its separate elements. It is necessary to identify the existing fragmentation areas in the work of: a) separate polyclinic divisions, b) polyclinics and hospitals, c) polyclinics and first aid stations/emergency wards, d) hospitals and after-treatment/rehabilitation services, e) treatment departments and diagnostics departments. Collect and analyze information on the extent of continuous observation of patients as well as the appropriateness of the existing care pathways of patients between individual providers. It is important to determine whether it is possible to overcome fragmentation using the efforts of management bodies without formal unification.

2. When deciding on the appropriateness of unification of healthcare providers it is necessary to take into account their location. *Such unification is justified if low capacity healthcare providers are located relatively close to each other.* In such a case, it will be easier to build rational clinical pathways of patients. If the unification exceeds an optimal size, or the branch offices are located far away from each other, then the anticipated consolidation of interaction between the polyclinic and hospital can be counter-balanced due to the complexity of managing such a complex. Adverse implications are also possible for the accessibility of medical care: the distance to be covered to receive a particular service may prove unacceptable for the population.

3. Develop specific forms of interaction in the framework of the healthcare complexes and individual divisions. Particular importance is attached to the following interaction types:

<u>Between polyclinics and hospitals,</u> including specific activities:

- provision of information to polyclinics on all hospitalizations in the catchment area to ensure subsequent after-discharge treatment (and at the polyclinic level – to district physicians);

- joint development of a hospital discharge planning procedure, provision of the necessary information to polyclinic district physicians and specialists for timely after-treatment and management of patients at outpatient centers;
- arrangements for regular consultancies to be provided to polyclinic physicians by hospital doctors, training sessions;
- provisions for communication regarding the justification of referrals for hospitalization and a set of necessary tests;
- provisions for feedback between polyclinic and hospital doctors regarding complicated cases.

It is particularly important to ensure the *involvement of large polyclinics in planning inpatient care volume and control of its delivery*. In our opinion, the planning algorithm for inpatient care volume planning should include the stage of the assessment by polyclinics of the need for inpatient care of the continuously observed population, as well as their choice of hospitals with steadily higher performance. It requires a large volume of information that should be intimated to the polyclinics by health system governance bodies and territorial compulsory health insurance funds. At the same time, it is appropriate to grant the right to polyclinics to monitor the progress of hospital treatment, without interfering in the therapeutic component but supervising the treatment process administration, e.g. the timeliness and justification of extra diagnostic tests, LOS, completeness of hospital discharge summary with a breakdown of after-treatment care, etc. Random reviews to be conducted by polyclinics can become more useful than reviews conducted by health insurance organizations, because polyclinics are keen on receiving a well cured patient rather than on "punishing" hospitals with financial penalties. As demonstrated by international and domestic experience (Samara's experience in the 1990s), it is impossible to implement this mechanism using exclusively administrative measures. It requires a strong economic motivation of polyclinics (see Para. 2.5).

<u>Between polyclinics and ambulance care/emergency wards:</u>

- provision of information to the polyclinic about all the ambulance calls by the polyclinic's catchment area population, communication of this information to each district doctor;
- provision of information to the polyclinic about the results of diagnostic tests, preliminary diagnoses, and medical interventions.

<u>Between polyclinic departments:</u>

- provisions for joint management of patients by district physicians and specialists;
- on-going monitoring of continuity performance during patients' management;
- improvement of feedback between specialists and district doctors based on the results of consultations.

3.3. Development of integrated models for managing patients with chronic and multiple diseases

A special role in the concept of integrated healthcare is played by chronic disease management programs widely spread in many countries in response to a growth in the prevalence of chronic and multiple diseases. An increasing number of people survive to the age when such diseases develop. New medical technologies emerge that make it possible to improve the results of their treatment.

Chronic disease management programs (CDMPs) comprise integrated activities aimed at comprehensive treatment over a long period of time: formation of interdisciplinary teams of medical workers, provisions for the alignment of their actions, preparation of individual plans of patients' management and continuous monitoring of their progress, use of integrated procedures for healthcare delivery, involvement of patients in the treatment process, use of economic incentives for joint work and attainment of ultimate results. Strictly speaking, these programs are a comprehensive integration tool, which includes all of the above listed approaches.

An example of comprehensive actions in patient management is provided by stroke care programs in the Netherlands (Vat et al., 2016). These programs aim at improving the quality of life for patients who had stroke and reducing the likelihood of disease recurrence. The small country is implementing 75 such programs. Each program enrolls general medical practices, hospitals, rehabilitation centers, nursing care centers, independent visiting nurse groups. An average interdisciplinary group includes seven doctors of different specializations. Each group manages 495 stroke patients.

The program is coordinated by a general practitioner (sometimes another specialist). The coordinator is responsible for establishing interaction with patients, and for the treatment process. It is important that doctors participating in the groups are not relieved from their routine treatment work. It is estimated that they spend an average of nine hours per week on the work in the program. Almost all the groups operate based on contracts. If a hospital doctor is hired, a contract is signed with the hospital concerned.

All of the program participants have to comply not only with general clinical recommendations but also with the recommendations developed specifically for CDMPs and accepted by all the participants. It means that a certain variation of clinical recommendations is possible provided they are approved and subsequently complied with.

One of CDMP versions is multiple disease management programs. 101 such programs were underway in Western Europe in 2015 (Rijken et al., 2016). They also provide for the

formation of multi-profile groups and interdisciplinary cooperation. The keystone of their implementation is *ongoing rather than sporadic follow-up of patients with a special role played by healthcare coordinators*. This function is most often performed by general practitioners. The use of advanced nurses as coordinators has been increasing. To follow up patients with particularly complex multiple problems case managers are appointed, and the need for them is growing. Case managers are involved in 40% of European programs. All the programs include individual patient management plans and their training. Interdisciplinary cooperation is ensured based on shared electronic health records and periodical meetings of program participants.

A special emphasis is laid on the *dynamic nature of actions in patient management groups.* Physicians and nurses do not wait for the patient to come to see them but are themselves looking for a contact with the patient using electronic tools and remote patient monitoring tools.

Multiple disease management groups are usually set up on the functional basis *without formally uniting the participants.* Only in 19% of studied programs several organizations were merged (Rijken et al, 2016).

Some programs make an emphasis on patients involvement in disease management. The major instrument is a formal agreement with a patient, which sets the requirements for patients to comply with an individual plan of treatment and physicians' prescriptions, see them within a stated interval, follow the established pathway of patients movement in a multi-level delivery system. Sometimes economic incentives are used. In France, patients with serious chronic diseases are exempt from copayment, provided they follow a clinical protocol developed by a treating physician (Ettelt, 2009).

The performance of CDMPs and multiple disease management programs has been in the focus of a large number of studies. A literature overview on the subject conducted by E. Nolte (2017) showed that 65% of the researches revealed a positive input of the programs in the achievement of higher clinical performance, 67% provided for increased patients' satisfaction with the state of healthcare, but only 17% reported cost savings. A significant positive result has been reported in connection with the measures aimed at establishing interdisciplinary groups, clinical activity coordination, more frequent contacts between specialists as well as the implementation of shared information systems to ensure the coordination. In other words, *the programs concerned have a strong effect on the clinical performance but their contribution in achieving system-based savings has not yet been proved.*

The latter aspect can be explained by the fact that the programs provide for an increase in the volume of clinical activities aimed at patient management as well as patient care activities. They require additional investment, which will only pay back with a delay in time. The first stage of such programs is mainly of extensive nature. A more significant economic

effect can be expected in some future. It also important to note that the cost-effectiveness calculation methodology is still far from being perfect.

To what extent are CDMPs relevant for the Russian health system? What are the new things they offer? A typical feature of the Russian health system is the availability of a system of "dynamic case follow-up", which contains many elements of western CDMPs. The system was established back in Soviet times as part of Semashko's model. In this country, priority was given to active work with chronic patients earlier than in the West. However, improving this work is an urgent task for the Russian health system. It above all applies to the *scale of work with patients, and the content of medical and organizational activities.*

The key regulation on this issue is Administrative Order of the RF Ministry of Health "On the organization of dynamic case follow-up" No.1344n dated 21.12.2012, which sets out a patient management procedure. But not all treatment activities contained therein are being implemented in real life. A study conducted by "Rosgosstrakh-Meditsina" health insurance company based on the results of discipline-related reviews obtained the data on the content of case follow-ups before and after acute coronary syndrome (ACS) and acute cerebrovascular accident (ACVA) (Round Table Panel, 2018).

Insurance representatives of the company surveyed 7,043 patients with ACS and ACVA, and the results revealed the following assessments of case follow-ups by the patients themselves:

• 45% of patients had been undergoing case follow-up for a cardiovascular disease (CVD) *before* developing ACS and ACVA;

• 36% of them were not included in the notified case-list after ACS and ACVA;

• 19% were not referred by their prescribing physician for the checkup recommended by hospital doctors;

• 48% were not referred for consultations to cardiac surgeons, neurosurgeons, endovascular diagnostics and treatment doctors even though it had been indicated and stated in the hospital discharge record;

• 53% were not referred for medical rehabilitation by their prescribing physician;

• 41% would like to be referred for rehabilitation but did not get a referral.

The above data show that: a) nearly half patients with a high risk of complications (primarily, those with arterial hypertension) had not been followed up by doctors before the onset of a "disastrous" condition; b) over one third of patients after hospitalization for ACS and ACVA were not included in the notified case-list, to say nothing of providing supportive therapy; c) half the patients did not receive the required specialists' consultations and rehabilitation treatment i.e. the continuity of treatment was disrupted after hospitalization; d)

some of the district doctors do not know anything at all about such cases in their district. It is quite evident that such level of case follow-up cannot be considered sufficient.

A comparison between international CDMPs and the activities set out in Administrative Order No.1344n allows singling out the following differences:

- CDMPs make a point of continuous follow-up, and the Administrative Order focuses on sporadic follow-ups.
- A different level of responsibility. Additional consultations and procedures are provided for but after conducting them a specialist can forget about the patient. E.g. in case of ischemic heart disease two cardiologist's consultations per year are prescribed. Once such consultations are conducted, cardiologist's management of the patient is over. He/she is not responsible for what happens next. However, under CDMPs specialist doctors are included in the corresponding groups where they work and are responsible for the results along with other doctors.
- The Administrative Order does not contain any treatment performance criteria. All the treatment efficacy criteria described there are process criteria rather than outcome criteria. They are articulated in terms of clinical actions by physicians, which is clearly not enough for assessing their work with the group of patients.
- The Administrative Order does not describe the organizational models of chronic patient management: how exactly to organize this process, which doctor performs the coordinating functions, what is the composition of interdisciplinary groups, what functions can be delegated to the nursing staff etc.
- There are no commitments from the patient to comply with the doctor's prescriptions to say nothing of incentives and possible penalties (there are no agreements with patients).
- There is no mention of telephone and electronic interaction, and remote monitoring.
- Interaction with a hospital is reduced to a recommendation: if a district doctor or a specialist from the polyclinic cannot help the patient, the latter should be hospitalized.

Given the limitations of the Russian follow-up system, the following elements from the international CDMPs can be recommended:

1) Setting-up chronic patients' registration system subdividing the patients by complexity degree with a view to establishing management of patients requiring different volumes of clinical and organizational activities.
2) Formation of interdisciplinary patient management groups. They should have a permanent composition and assume general responsibility for the treatment of a certain group of patients. The specialists included in the groups should not simply provide advice to the patients but also take part in joint activities of systemic nature,

train and advise their colleagues, assess the program performance, modify the clinical recommendations etc.

3) Appointment of program coordinator. The best option is a general practitioner or district physician (pediatrician).
4) Conclusion of an agreement between chronic patients and healthcare providers.
5) Promotion of the role of proactive measures: encouraging the patients to visit doctors, follow-up control of compliance with the prescriptions, patient's condition monitoring, doctor's home visits etc.
6) Establishment of a *step-by-step algorithm of polyclinic doctors' actions immediately after the hospitalization of complicated patients, assignment of doctors responsible for their after-treatment.*
7) Establishment of contacts with hospitals' doctors.
8) Establishment of communication with the relatives of acute patients.
9) Organization of information-based interaction with patients, including the establishment of continuous mobile communication, dialogue via emails, remote monitoring of health condition, active measures by doctors based on monitoring results, specially fitted polyclinic rooms for remote monitoring, assistance in receiving advice and sophisticated diagnostic tests (including provisions for transporting groups of patients).
10) Provisions for the monitoring of the treatment process and results:

- establishment of target indicators not only for the process but also for the results;
- monthly evaluation of individual plan progress;
- periodical evaluation of process and results indicators for the totality of patients.

For each one of the above elements it is appropriate to study in more detail the experience related to the implementation of CDMPs. It will allow combining the domestic achievements with the mechanisms that have proved to be effective abroad.

3.4 Intensification of information exchange between healthcare providers

The impact of information technologies on healthcare integration in the United States and other western countries can be traced down along three lines. Firstly, they significantly contribute to an increase in the level of coordination between separate healthcare providers. Particularly important are electronic medical records (EMRs), which ensure exchange of information about the services and patient's condition. EMRs which are common for certain health system departments provide a kind of "girdle" for consolidating their interaction and combining the efforts aimed at achieving the ultimate result. It becomes possible to establish

more active contacts between doctors of different specializations to combine separate elements of treatment. The most important forms of such contacts are common patient management plans; doctors' prescriptions not only for hospitalization but also for subsequent management of the patient; monitoring all stages of healthcare delivery to the patient concerned; planning patient discharges in a close contact with the primary care setting, rehabilitation department etc. The use of EMRs helps to reduce the duplication of diagnostic tests because their results are made known to all the participants of integrated care systems. Outpatient doctors can consult hospital doctors with a lot of experience in the management of certain patients.

Secondly, new opportunities emerge for interaction between doctors and patients. Electronic systems are increasingly used to support doctor's prescriptions, e.g. for sending reminders about prescribed procedures and medications, warning about possible complications, prescribing tests and receiving their results, modifying drug therapy and prescribing drugs. There are now significantly more opportunities for observing the patient's condition, including the monitoring of the impact of nutritional quality and other factors on the disease course. The effect of information technologies on patients' training process is quite perceptible – most of the times as a CDMP element. In addition, patients' web portals are turning into a powerful tool for spreading new medical technologies. Communicating with each other, patients obtain information about the potential of different treatment methods.

Thirdly, there is a significant growth of IT importance for administrative processes. Electronic accounting of healthcare volumes provided at different stages, comparison of the clinical activity process and results of different healthcare providers and different doctors, cost evaluation at each stage of healthcare delivery – all of it significantly expands the opportunities for measurements in the health system, thus increasing the cost-effectiveness of managing the healthcare provider and the integrated system. Based on this, it becomes possible to select the most cost-effective elements of healthcare, and keep track of the input of each element into the achievement of the target indicators of performance and cost-effectiveness of the resources.

An indispensable condition for increasing the effectiveness of information technologies is a clear idea of the content of integration processes. In western health systems, information systems are based on general perceptions of patients' pathways, role of each element in ensuring treatment continuity, healthcare volume accounting units in conformity with the adopted scheme of healthcare provider incentives, procedure for measuring activity results etc. In other words, *at first, the healthcare delivery setup comes to fruition, and then the information system takes shape*, not the other way round, as it is often done in the Russian health system. The authors of the Commonwealth Fund Report warn that information by itself is not a cure-all, it should be properly used in accordance with the accepted organizational and economic schemes.

And the *participation of physicians in the development of information systems* is particularly important (McCarhy and Mueller,2009).

An example of IT use for healthcare delivery integration is provided by large-scale Kaiser Permanente projects. The first project, KP Health Connect, ensures protected communication between the physician and patient based on the Internet portal of the integrated system as well as continuously updated electronic health records. The information system provides a foundation for the physicians to establish and discuss the diagnosis as well as various forms of telecommunication between different specialists when managing particularly complicated cases. The second project, My Health Manager, targets patients and offers the following functionalities: obtaining information for patients' self-activity: recommendations on compliance with doctor's prescriptions, advice on nutrition and healthy life, confirmation or updates of medical prescriptions by means of email contacts with the physician etc.; maintenance of personal health record; arrangements for online booking of appointments; arrangements for receiving drug prescriptions, including their updates based on the previous contacts with the physician; receiving online advice from the physician or nursing staff when it is not necessary to visit them. Thanks to information interaction provided by Kaiser Permanente *the number of visits per patient went down by 26.2% between 1999 and 2007. Approximately 34% of patient/physician contacts are based on remote interaction* (Chen et al., 2009).

All of the above processes are most relevant for the Russian health system. IT-based management of the health system should be aimed at eliminating fragmentation in healthcare delivery. *It will require not only common information but also common rules for its use:* clearly regulated actions of doctors in regard to patients, especially those with particularly high risks. All the information about the patient should be centralized by the district doctor who is to be aware of his/her patients' hospitalizations, their calls for ambulance, results of communication with any healthcare provider, including private providers. *This information should serve a signal to initiate a contact with a complicated case* – even without his/her direct reference to the doctor.

In summary, we recommend:

- The patterns of health care organization should be first specified with the following development of IT system to serve it – not on the contrary, which is the case in Russia.
- IT-based management of the health system should be aimed at eliminating fragmentation in service delivery. It will require not only common information but also common rules for its use: clearly specified actions of doctors in regard to patients, especially those with particularly high risks.
- Arrange additional forms of information exchange, including feedback of specialists after consultation, provision of information on admissions and ambulance calls to

district physicians, on-line consultations, control of recommendations implementation after hospital discharge by polyclinics physicians.

3.5 Development of integrated pathways for healthcare delivery and efficient referral system

Integrated systems development projects, including CDMPs, which are being implemented internationally, use integrated pathways of service delivery as their important component. These pathways are usually defined as a structured multidisciplinary plan of care, which details the steps in a course of treatment or care and has timeframes or criteria-based progression (Kinsman et al, 2010). Their key purpose is ensuring the uniformity and continuity of patient management at all stages of the medical and technological process. Such procedures aim at developing rules for patient pathways disease-wise, reducing on this basis variations in patient referrals, and preventing unnecessary referrals. In the framework of this process, the "dual referrals" term was introduced meaning differently directed movement of patients – from primary care physicians to specialized care doctors, and feedback between them (Somanathan,2018).

Clinical pathways also exist in Russia but they mainly aim at determining the requirements for the allocation of resources for healthcare delivery. Given the international experience, it is important to consolidate the integration component of such procedures with a focus on ensuring the uniformity and continuity of healthcare delivery. For this purpose it is vital:

- to include in the pathways for different diseases the algorithms of interaction between healthcare services to ensure treatment continuity at various stages of care delivery;

- to establish target indicators for healthcare delivery process and results at the rehabilitation and outpatient care institutions after the hospitalization of patients with the most complicated diseases;

- to include compliance with such regulations and indicators in the healthcare quality evaluation system;

- to expand the scope of reviews conducted by health insurance organizations. The review should focus on quality of post-hospital care and continuity of treatment at different healthcare delivery stages. The most adequate tool for this purpose is topical reviews.

An example of successful use of integrated healthcare delivery procedures is provided by the experience of the urological care system active in the Voronezh Oblast where a complete vertical was established to deliver medical care – from the primary care level to the federal core facility for patients with benign prostatic hyperplasia and prostate cancer. Each stage of care delivery is closely linked to the previous and next stages by means of clearly

defined functions of all medical organizations (including the newly established interterritorial urological care centers), rules of their interaction, patient pathway procedure, and actual compliance with the provisions of care delivery pathways. E.g., doctors of the urology department of the oblast hospital have all the information about patients detected at the primary care level, patient structure in the interterritorial urological care centers, plans of vertical patient pathways. They advise doctors from interterritorial centers and polyclinics, and have all the information about the ultimate treatment results after hospitalization. The major results of the project over the period of 2009-2015: i) the growth of the new urological cases detected at the level of primary care and a gradual decline in the frequency of the most complicated and neglected cases; ii) the optimization of patients flows across the levels of service delivery – the rise in the utilization at the first levels of service delivery and the decline in the share of tertiary care; iii) a decrease in unit costs as the result of the changes in the structure of new cases; iv) increase in the share of the first and second stages of prostate cancer from 57.2 to 71.3%; v) decrease in prostate cancer mortality during the year after the detection of new cases from 14.6 in 2009 to 7.5% in 2013, while the average for Russia – from 14.0 to 10.3% (Apolikhin et al., 2018). This model deserves to be further disseminated.

3.6. Development of economic incentives to ensure closer interaction between healthcare providers

Western countries have been actively looking for financial methods that motivate providers to implement the integration. Numerous studies (see, for example, Mechanic, Altman, 2009; Tsiachristas, 2013) have shown that the traditional fee-for-service payment for each service (consultations, procedures, inpatient days etc.) catalyze the fragmentation of care. E.g., in asthma treatment, outpatient and inpatient doctors may separately from each other provide all the necessary care in case of disease aggravation (getting paid for each service they provide). But if the patient regularly finds him/herself in a condition requiring hospitalization, such treatment is clearly insufficient: the episodes are repeated, the costs of their arresting using the hospital resources grow. An alternative to this approach lies in continuous observation of the chronic patient taking measures to prevent disease aggravation. Motivation for such actions only develops when specific methods of payment are used (payment for integration).

There are three major payment methods for integration. The first one is an extension of a regular *pay-for-performance (P4P) method*. It is used together with other payment methods (FFS, capitation or bundled payment) to reward specific integration activities. Bonuses are paid to promote management of chronic cases. The most famous example is the Quality and Outcomes Framework _(QOF) in England. Some countries pay bonuses for better information exchange between providers, as well as between providers and patients. For example in

Denmark, telephone and email patients' consultations are encouraged by bonuses to promote on-going tracking chronic patients health status, proactive managing them, coordinating care with other providers. This method is useful but can hardly contribute substantially to integration. There is a documented evidence that QOF in England could not improve continuity and co-ordination of care (Marchall et al, 2014). Also, there has been some reported concern that this method can potentially result in the neglect of non-incentivized areas (Maresso, 2013).

The second method is an *disease-based bundled payment.* The specification of the bundle of services differs in the literature. Struijs and Baan (2011) address bundled payment as the payment for integrated set of services provided by outpatient care teams - GPs and outpatient specialists under programs of specific chronic disease management. Blantes et al (2009) see this method as a reimbursement of inpatient care cost - not only the episode of hospital admission but also "a set period of management of a chronic condition", including readmission caused by low quality of inpatient care. Thus this method is used for reimbursement of outpatient care or both outpatient and inpatient care.

The third method is a *global payment for inter-related providers.* This method assumes financial accountability of providers working in integrated networks. They are responsible for deviations of actual and expected cost (for example, the cost under capitation scheme). Global payment is always designed in the way that providers can keep savings and therefore are incentivized to more integration and more control over overutilization of services. They may bear risks of overspending as well.

Global payment schemes differ according to the level of financial risk bearing and the actors that act as risk bearers – PHC providers, hospitals or the entire network of providers. The specific type of global payment is a *PHC-fundholder scheme (*further - fundholding). Under this scheme PCH, providers become holders of funding for outpatient and inpatient care. They are paid by all-inclusive capitation method, then act as purchasers of care – commission and pay to specialists, hospitals and other providers of care that deal with the enrolled population. Their risk bearing creates incentives for closer links with other providers to avoid overutilization of costly services. This method has been originated in Russia in late 1980-s and then was used or piloted in various versions in the UK, Italy, Sweden, Finland, Estonia (McCarhy and Mueller,2009).

Bundled payment addresses two tasks. The first one is *to encourage the transfer of inpatient care to outpatient units*. With the "through" rate, a hospital is interested in better preparation of the patient for admission carrying out all the necessary consultations and diagnostic tests and planning inpatient activities. In this case, it is not only hospital inpatient departments that "make money" but also hospital outpatient units. It is on their activities aimed at preparing the patient for hospitalization that the amount of savings on inpatient care depends,

and consequently, the net revenue of the integrated system as a whole. The second task consists in *ensuring that hospitals are interested in improving quality of inpatient care (prevention of disease complications and repeated hospitalizations) and provision of after-treatment of discharged patients*.

The most widely cited example of the disease-based bundle payment is a Geisinger Health System (GHS) initiative in the USA, implemented by an integrated delivery network of physicians and hospitals. This system offers forty specific clinical processes related to managing patients after coronary artery bypass surgery. The integrated rate includes the cost of surgery, all necessary tests and post discharge follow-up of patients within 90 days. The cost of services related to possible complications and readmissions is covered by this rate and not reimbursed additionally. The rate assumes that GHS will reduce the historic frequency of complications by half, that is pricing is based on growing requirements to quality of care. Evaluation of the first eighteen months of the project implementation found a 44 percent readmissions reduction, shorter average length of stay, and reduced hospital charges. According to Geisinger executives, the major problem is how to equitably distribute episode payments across physicians, hospitals and other providers involved in the project (Mechanic and Altman, 2009).

In Europe, disease-based bundled payments are piloted in various countries, including the Netherlands, the UK, Denmark. Contrary to the US initiatives, they are implemented mostly in the sector of outpatient care. For example, in the Netherlands the bundled payment was established in 2007 for diabetes care. Under the scheme, health insurers are able to purchase a 'bundle" of services needed to manage chronic diseases through the payment of a single fee to newly created contracting entities called "care groups" These groups are clinically and financially responsible for all patients enrolled in the diabetes care program. Evaluation of the scheme made in 2012 indicated that 25% fewer bundled payment patients utilized specialist care in comparison to care-as-usual patients (not enrolled with care groups). This contributed to some savings per patient in the cost of diabetes-specific specialist care, but when non-diabetes costs are included total specialist costs for bundled payment patients increased more than the costs for care-as-usual patients Another result of this evaluation is the revealed problem of uncertainty of cost allocation across programs of patients management and regular set of services reimbursed through FFS. There are concerns that care groups may be double billing the insurer for the same services – through traditional FFS and bundled payment. (Liano, 2013).

This implementation problem, in our view, highlights a broader challenge – the narrow scope of disease-based bundled payment. The scheme is designed for the specific diseases management programs and doesn't create incentives for providers in other clinical areas. There

is a potential for providers to skew their activity to the most "rewardable" schemes (Sheiman, 2016).

The interesting example of the global payment is the Alternative Quality Contract (AQC) in Massachusetts, USA. Starting from 2009, this contract is negotiated between the insurance company and groups of providers. It covers the entire continuum of care, including inpatient, outpatient, rehabilitation and long-term care and prescription drugs. Providers in a global budget model not only share in savings if spending is below the budget but are also accountable for deficits if spending exceeds the budget. The AQC groups are eligible for P4P bonuses up to 10% of their budget with performance measures of outpatient and inpatient care. Song et al (2011) compares the AQC with control group and demonstrates small savings (1,9% per quarter), as well as some improvement in quality measures of chronic conditions in adults and pediatric care. All AQC groups met 2009 budget targets and earned surpluses. The interviews with physicians and administrators of participating groups indicate that sharing savings between providers is becoming the instrument to reorganize the delivery of care and ensure continuity of care. "When 50 percent of your patients are at risk, you don't stop the care when patients are discharged. We have a huge amount of outpatient work we do in the offices, in skilled nursing and rehab facilities" - this is the opinion of the senior administrator the hospital-physician group participating in the AQC. Also, there are new incentives to encourage proactive actions of physicians to manage chronic cases.

In Russia, there is a growing interest in the payment rate aggregation. The recent Program of state guarantees of free health care for 2019[2] sets forth the "healthcare payment based on capitation standard rate at medical institutions with divisions providing medical care at outpatient, inpatient and daycare centers," i.e. payment for integrated outpatient-inpatient care.

The existing international experience can be used to implement such innovation. We can suggest the following models:

1) *Introduce P4P for polyclinics to supplement the current capitation payment method* so that to promote: a) development of chronic disease management activities, b) more intensive information exchange between physicians, c) coordination function of primary care providers, d) effective after-discharge clinical activities. Develop indicators for each integrative activities and the model of bonus payment for reaching the targets.
2) *Develop bundled payment rate for inpatient care and medical rehabilitation for the specified period of time after hospital admission*.

[2] https://www.garant.ru/products/ipo/prime/doc/56663934/

3) *Re-vitalize fundholding method*[3] *and change its design with the use of global budget approach*, including:

-*make inpatient-outpatient settings (combined hospitals, for example) a fundholder*. Global payment based on conflicting interests of PHC providers and hospitals (the case of Russian fundholding) should give way to the common incentives to ensure savings in the entire network of providers;

-*develop a transparent pattern of savings distribution between providers in the networks*;

-*establish performance targets for each provider in a network that comply with its general objectives*;

-*mitigate financial risks through a set of arrangements*: a) shared savings payment is subject to reaching performance targets, b) sharing risks between providers and purchasers of care (health insurers), c) optional involvement of providers in risk bearing, d) concurrent risk-adjustment of capitation formula. Without these activities bundled payment becomes vulnerable and conflicting (Sheiman, 2016).

4) *Establish a managerial control of services under global payment*, including the enrolment of patients, a sound referral system, a careful specification of the services under global payment, measuring the input of each provider.

4. Management of the integration process

To strengthen integration, certain rules governing the actions of separate healthcare providers are required. Such rules are established by various health system actors. In the U.S.A., where there is prevalence of private healthcare providers, the role of integrator is played by some of the major medical institutions and insurance companies. For instance, in order to establish the integrated system of Advocate Physician Partners in Northern Illinois, which comprises 9 hospitals and 3,200 independent medical practices, the following most important practical steps were implemented (Rice, 2011):

1) Selection of system participants determining the results of activities of hospitals and medical practices, and identifying the willingness to comply with the common rules and coordinate their efforts;

2) Creation of an infrastructure to coordinate healthcare providers and ensure prompt contacts with patients using a common information system, establishment of a doctors' web portal, creation of a registry of disease cases and risk

[3] In 2011 fundholding scheme was used in 10 of 83 regions of the country. However, currently it has been stopped without any official justifications.

groups, development of electronic health records and other means of information exchange;

3) Creation of a system shared by all participants to control healthcare quality including, but not limited to, two vital elements: a) development of individual doctor records creating opportunities for measuring and comparing their activities; b) arrangements for a joint discussion of treatment results involving the physicians from all the levels of healthcare delivery. The issues to discuss: At what stage the patient was lost? What needs to be done to ensure more effective after-treatment of the patient? What is the role of primary care and hospital doctors? Such issues are not discussed for the purpose of finding the guilty party but rather for fine-tuning the mechanisms for improving the coordination of actions by various healthcare providers;

4) Creation of a financial unit to encourage and fine-tune new healthcare payment methods aimed at the ultimate result of integrated system operation rather than the growth of revenues for some providers;

5) Creation of a system shared by all healthcare providers to measure performance and reporting results.

In Europe, it is the government that in most cases undertakes to regulate the integration. E.g., in *Germany*, integration is initiated by the federal government. The Federal Social Security Code (SGBV), the main regulatory instrument on social policy, in 2003 provided for several types of programs aimed at "opening the borders between separate healthcare sectors" including chronic disease management programs, integrated care programs for other diseases, development of specialized outpatient care at hospitals (not provided earlier), integration of health and social care, and intersectoral approach to complicated disease management. The document contains framework integration programs, establishes financial conditions for the participation of sick funds (insurers) in the implementation of various integration programs (Klusen, 2011).

In the *Netherlands*, integration initiatives and relevant regulations are adopted at the local level – it is for the most part particular chronic disease management programs (Struijs, Baan C., 2011). In *Sweden*, it is the law that determines the procedure to ensure treatment continuity: the municipal authorities are obliged provide for after-treatment of complicated patients at specialized after-treatment institutions under social service supervision. This requirement is extremely concrete: after-treatment should be provided within 5 days of hospital discharge, otherwise the municipality is obliged to reimburse from its own budget the hospital after-treatment cost (Saltman and Vrngbeck, 2009).

To overcome fragmentation in the Russian health system, the federal regulation for ensuring an integrated patient-centered approach to healthcare delivery needs to be strengthened in the following directions:

1. Initiate programs of chronic and multiple disease management in outpatient settings.
2. Set requirements to the use of above stated integrative activities.
3. Develop provider payment methods to promote integration.
4. Organize monitoring of integration/fragmentation in regional health systems.

Conclusions

People-centered integrated health care initiatives are gaining traction globally as the central parts of health care delivery reforms. The problem of health service fragmentation has given rise to innovative organizational, economic and managerial tools to intensify integration processes in foreign health care systems. Each of them is implemented in the national system context. The clinical outcomes of these activities are usually positive, while their impact on cost of care remains unclear – partly because most of these activities are at the initial stage, therefore require substantial inputs and limited savings.

The major lines of actions in the Russian health system are: development of the forms of vertical and horizontal interaction between health providers, development of integrated models for managing patients with chronic and multiple diseases, intensification of information exchange between providers, development of integrated pathways for service delivery, development of economic incentives though new provider payment methods.

To ensure their use in the practice of the Russian health care system, it is necessary to adapt them to the established model of healthcare delivery, and the existing financial mechanisms. To strengthen the integration, it is important to enhance the role of government regulation of the process with the focus on setting requirements to the specific integrative activities.

Literature references

1. Apolikhin O. I., Katibov M.I., Zolotukhin O.V., Shishkin S.V., Sheyman I.M., Govorin N.V., Yesaulenko I.E., Shchukin A.V., Kaprin A.D. (2018) Shaping of a new health system model // *Health System Manager*. 2018. No.1, pp. 9-19 (in Russian) [Аполихин О. И., Катибов М. И., Золотухин О. В., Шишкин С. В., Шейман И. М., Говорин Н. В., Есауленко И. Э., Щукин А. В., Каприн А. Д. (2018) Формирование новой модели здравоохранения: концептуальный подход и пилотная реализация // *Менеджер здравоохранения*. 2018. № 1. С. 9-19].

2. Round table discussion (2018). Activity of insurance representatives of health insurance organizations. 1 June 2018. Moscow//*Mandatory Health Insurance* No.3. 2018 (in Russian) [Круглый стол (2018). Осуществление деятельности страховых представителей страховых медицинских организаций. 1 июня 2018 г. Москва//*Обязательное медицинское страхование* № 3 2018].
3. Semashko N.A. (1947) Articles on the theory of Soviet health system organization: Fundamental principles of Soviet health system. — M.: AMN, RSFSR, 1947 (in Russian) [Семашко Н. А. (1947) Очерки по теории организации советского здравоохранения: принципиальные основы советского здравоохранения. — М.: АМН РСФСР, 1947].
4. Shevsky V.I., Sheyman I.M., Akhmetzyanov A.R., Zarochintseva I.V. (2013) Integration of the efforts of healthcare providers for delivering medical assistance to patients: Physicians' opinion // *Health System* Nos. 6 and 7 (in Russian) [Шевский В.И., Шейман И.М., Ахметзянов А.Р., Зарочинцева И.В. (2013) Интеграция усилий медицинских организаций при оказании пациентам медицинской помощи: мнение врачей//*Здравоохранение»* №№ 6 и 7].
5. Sheyman I.M., Shishkin S.V., (2012) Expanding the consumer choice in the health system: Theory, practice, and prospects. Publishing House of the Higher School of Economics (in Russian) [Шейман И.М., Шишкин С.В., ред. (2012) Расширение потребительского выбора в здравоохранении: теория, практика, перспективы». Изд. Дом Высшей школы экономики].
6. Sheyman I.M., Shevsky V.I., Sazhina S.V. The priority of primary healthcare – declaration or reality? *Electronic scientific magazine "Social Aspects of Population's Health"* 2019. vol. 65. No.1 (in Russian) [Шейман И.М. Шевский В.И., Сажина С.В. Приоритет первичной медико-санитарной помощи – декларация или реальность? *Электронный научный журнал "Социальные аспекты здоровья населения"*. 2019. Т. 65. № 1].
7. Sheyman I.M., Shevsky V.I. PROCESSES OF CONCENTRATION AND INTEGRATION OF MEDICAL SERVICES IN INTERNATIONAL AND RUSSIAN HEALTH CARE SYSTEMS: IS THERE AN INCREMENT IN EFFECT? *Problems in public and municipal administration*. 2019. No.1 (in Russian) [Шейман И.М., Шевский В.И.ПРОЦЕССЫ КОНЦЕНТРАЦИИ И ИНТЕГРАЦИИ МЕДИЦИНСКИХ СЛУЖБ В ЗАРУБЕЖНОМ И ОТЕЧЕСТВЕННОМ ЗДРАВООХРАНЕНИИ: ЕСТЬ ЛИ ПРИРАЩЕНИЕ ЭФФЕКТА? *Вопросы государственного и муниципального управления*. 2019. № 1].
8. Berwick D., Nolan T. and Whittington J. (2009) The Triple Aim: Care, Health and Cost. // *Health Affairs* 27, no 3: 759-769.
9. Blantes F., Rosenthal M., Painter M. (2009) Building a Bridge from Fragmentation to Accountability – The Prometheus Payment Model. // *New England Journal of Medicine* September 10: 1033-1036.
10. Calnan M., Hutten J, and Tiljak H. (2006) The challenge of coordination: the role of primary care professionals in promoting untegration across the interface. In: Primary care in the driver's seat? Edited by Saltman R., Rico A., Boerma W. WHO, European Observatory on health systems and health policy. Open University Press.
11. Chen C. (2009). The Kaiser Permanente Electronic Health Record: Transforming and Streamlining Modalities Of Care // *Health Affairs.*
12. D. Cortese and R. Smoldt (2007) Taking Steps Toward Integration *Health Affairs* **26**, no. 1: w68–w71.
13. Dranove D, Lindrooth R. Hospital consolidation and costs: another look at the evidence// J Health Econ 2003 v. 22:983-97.
14. Enthoven A. (2016) What is an Integrated Health Care Financing and Delivery System (IDS)? and What must would-be IDS Accomplish to Become Competitive with them? Health Econ Outcome Res. Open Access 2016 v.2:115. doi:10.4172/heor.1000115
15. Essential Hospital Institute (2013). Integrated Health Care Literature Review. Wash.

16. Fulop N, Protopsaltis G, Hutchings A, et al (2002). Process and impact of mergers of NHS trusts: multicentre case study and management cost analysis// BMJ325:246-53.
17. Iacobucci G. The rise of primary care networks// BMJ 2019 v.364:l304.
18. Hernandesz-Quevedo(2013) Enhancing Chronic Care Management in Denmark, *Eurohealth.* Vol.19, No.2.
19. Hwang W., Chang J., Laclair M., Paz H. (2013) Effects of integrated delivery system on cost and quality// *Am J Manag Care* 19: e175-184.
20. Kaul A, Prabha K, Katragadda S. (2016) Five ways to help healthcare systems realize the benefits of scale. PWC Strategy&.
21. Keshvani P. and Walsh A. Physician-Hospital Integration Strategies // Health Care Law Monthly December 2013.
22. Kinsman Leigh, Thomas Rotter, Erica James, Pamela Snow, and Jon Willis What is a clinical pathway? Development of a definition to inform the debate//BMC Med. 2010; 8: 31 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2893088/
23. Klusen N. (2011) Integrated Care and Cross-SectoralCare:The German Experience.Moscow, October 14th, 2011Allianz Eurasia Healthcare Advisory Board Meeting.
24. D. Kodner and C.Spreeuwenberg (2002) Integrated care: meaning, logic, applications, and implications – a discussion paper *International Journal of Integrated Care*, 2002 Oct-Dec. Published online 14 November 2002.
25. D. Kringos, W.Boerma, A. Hutchinson, R.B. Saltman (2015) Building Primary Care in a Changing Europe. Observatory Studies Series, No. 38. Copenhagen (Denmark).
26. Liano R. Bundled payments for integrated care in the Netherlands//*Eurohealth* Vol.19, No.2.
27. Maresso A. (2013) The Quality and Outcome Framework in England// *Eurohealth* Vol.19, No.2.
28. Marshall L., Charlesworth A., Hurst J. (2014) The NHS payment system: evolving policy and emerging evidence. Nuffildtrust. London. February 2014.www.nuffieldtrust.org.uk/publications/nhs-payment-system-policy
29. McCarhy D. and Mueller K. (2009) Organizing for Higher performance: Case Studies of Organized Delivery Systems.
30. McCallum B., Brommes M., Robinson R., Bergman S., Palu T. (2009) The impact of primary care purchasing in Europe: a comparative case study of primary care reforms. In: *Primary care in the driver's seat?* Edited by Saltman R., Rico A., Boerma W.
31. Mechanic R. and Altman S. (2009) Payment Reform Options: Episode Payment Is A Good Place to Start//*Health Affairs*, **28**, No 2, pp 262-271.
32. Nolte E. et al. (2014)The changing hospital landscape. An exploration of international experiences. The RAND Corporation.
33. Nolte E. (2017) International perspectives on integration and care coordination. Concepts and experiences. Presentation at Integrated care seminar in Moscow, 25 April 2017. World Bank.
34. Posnett J. (1999) Is bigger better? Concentration in the provision of secondary care// *BMJ* 319:1063-1065.
35. Rice J. (2011). Integrated Care Delivery Models: Insights from USA and Europe. Seminar at the National Research UniversityHigh School of Economics, 27 June, 2011.
36. Rijken M et al (2016) How to improve care for people with multimorbidity in Europe? Health Systems and Policy analysis//*Policy Brief, v.* 23.
37. Saltman R. and Vrngbeck K. (2009) Looking forward: future policy issues. In: Magnussen J., Vrankbek K. and Saltman R. (ed) (2009) Nordic Health Care Systems. Recent reforms and current policy challenges. Open University Press.
38. Schmitt M. (2017) Do hospital mergers reduce costs?// Journal of Health Economics 2017 v.52: 74–94.

39. Sheiman I. (2016) Payment Methods for Integration: Typology, Evidence and Pre-conditions of Implementation//J Pharma Care Health Systems 2016, 3:2
http://dx.doi.org/10.4172/2376-0419.1000154
40. Shortell S., Schmittdiel J. Prepaid Groups and Organized Delivery Systems: Promise, Performance, and Potential. Toward a 21st Century Health System: Eds. Alain Enthoven and Laura Tollen. 2004. San Francisco: Jossey-Bass.
41. Somanathan A. (2018) STRENGTHENING INTEGRATED CARE IN EUROPEAN UNION. WORLD BANK Health, Nutrition and Population (HNP) Discussion Paper April 2018.
42. Schmitt M. Do hospital mergers reduce costs?// Journal of Health Economics 2017 v.52: 74–94.
43. Stille, C. J., Jerant, A., Bell, D., Meltzer, D., & Elmore, J. G. (2005). Coordinating care across diseases, settings, and clinicians: a key role for the generalist in practice. *Annals of internal medicine*, *142*(8), 700-708.
44. Struijs J., Baan C. (2011) Integrating Care through Bundled Payments — Lessons from the Netherlands. *New England Journal of Medicine* **364**; 11. March 17, 2011.
45. Tsiachristas A, Dikkers C, Melinde R, Boland M, Rutten-van Mölken Exploring payment schemes used to promote integrated chronic care in Europe//Health Policy 2013 v.113: 296–304.
46. Vat E et al (2016) The Development of Integrated Stroke Care in the Netherlands a Benchmark Study// *International Journal of Integrated Care*, 16(4): 12, pp. 1–10.
47. WHO. 1996. WHO Study Group on Integration of Health Care Delivery. Integration of Health Care Delivery: report of WHO Study Group. Technical Report Series: 861, Geneva.