



## QUALITY OF MEDICAL SERVICES: PROBLEMS, EVALUATION AND REGULATION

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**Abstract.** One of the most acute problems in the healthcare industry – the problem of the quality of medical services. In this area, there is no established definition of medical services or approaches to quality management. The aim of the article is to analyze the existing definitions of “quality of medical services,” as well as development approach to managing medical organization. At the same time the management of the medical organization should be focused on ensuring the quality as the most important criterion for the organization. Methodology of the study is based on analysis and grouping of existing definitions of medical services, the factorial approach to evaluating the quality and organization of the process approach to management of the medical organization.

Noting the versatility and diversity concepts of quality of care the authors suggest grouping of direct and indirect factors affecting the quality of medical services. However, it is important, according to the authors, to move from functional management to management based on the process approach, which provides better control over the processes of customer service. Is given process model of quality management of health services and highlights the main groups of processes in the medical organization.

**Keywords:** quality of care, factors of quality of care, assessment of quality of care, quality of care model, the basic processes of the medical organization.

**JEL Classification:** P460, M38, I100, I15, I18.

## 1. The problem of quality of care

Modern medicine is characterized by substantial accomplishments and advances in new technologies, diagnosis and treatments. At the same time, the problem in quality of medical services is still considered at the national level not only in Kazakhstan but also in many CIS countries and around the world.

According to our and many other studies, inadequate level of quality health care services for many years retains as epidemic. After conducting surveys and evaluations from patient examinations in five stationary clinics, we found that 45–50% of patients admitted to hospitals during exacerbation were not examined or poorly examined in clinics.

Herewith, there is no guarantee that even in the hospital; patients will get good quality examination and proper

treatment. About 50% of patients during treatment in a hospital are not fully examined. Particularly high proportions (60–65%) of patients are diagnosed with peptic ulcer, coronary heart disease, hypertension and cholecystitis.

Similar pattern can be seen in other CIS countries, including Russian Federation (Murzova, Senina-Volzhskaya 2012; Paykov, Ishmetov 2012; Shal'nova *et al.* 2012) and other countries (American College... 2010; Gleason *et al.* 2004).

Primarily, medical treatment is pharmacotherapy. In the structure of treatment defects and provided medical care, incorrect pharmacotherapy happens in more than half of the cases (Ryzhova, Moroz 2010; Meyer-Masseti, Conen 2012). Moreover, those errors are often characterized as “dangerous” for patient’s health. In many cases, safety

principle of treatment fails which contributes negatively to the overall condition of the patient and increases the risk to his health and likelihood of recovery.

There are some circumstances, not dependent on the doctor which may affect the assessment of the quality of medical services. For instance, when patients do not adhere to the prescribed course of treatment, this may interfere with the study and it is difficult to identify. For example, in the US, each year about 125 thousand cases of coronary deaths which could have been prevented if patients complied with the prescribed medical treatment (McCarthy 1998).

Such factors as negligence from patients do not help the efficiency of health services. Population still has a low culture and knowledge of how to manage medical services efficiently and seek treatment during advanced stages of a disease and the process of medical treatment is very complicated. At the same time, this factor does not influence the assessment of quality of medical services since the evaluation is performed by the treatment of detected disease and the dynamics with respect to the identified level.

Low level of preventive medicine occupies an important place among other facts in low level of health care. This particularly applies to cardiovascular, oncological diseases and its irrational pharmacotherapy during the early stages of development.

Health is a strategic category and the state of medicine directly reflects on all socio-economical indicators of the country's development.

Significantly, this affects the demographic situation in the country. As of today, among Central Asian states, Kazakhstan has a high mortality rate 8.5 per 1 000 people. Even if overall indicator of mortality rate by half depends on the patient's themselves, their lifestyle, then such indicator as maternal mortality rate is fully dependent on the quality of medical care.

The same indicator is directly dependent on the level of medicine development and quality of medical services is infant mortality rate, in Kazakhstan equals to 13.5 per 1 000 born infants. The main cause of infant mortality are conditions which happen during perinatal period (asphyxia, sudden death syndrome), only in 2012 more than a half (57.3%) from the total number of deaths happened among infants. The number of death from congenital anomalies was 19.3% (heart defect, hypoplasia of internal organs); from respiratory diseases (pneumonia, influenza, ARI) 7.1%; congenital anomalies, casualties, accidents, poisonings and injuries 4.2%. The maternal mortality ratio is also very high, in 2013 is 13.5 per 100 000 labors (Andersen 2003).

Among the causes of death in Kazakhstan, the absolute "leader" belongs to diseases of the circulatory system, such as heart attack, coronary heart disease, hypertension, acute coronary syndrome.

Thus, the problem of improving the quality and appropriate assessment of quality medical services happens to be one of the most acute for many countries.

First of all, this problem can be solved by improving the management. Effective, competent management in medical organization is impossible without ensuring quality of performed medical services.

In order to control the quality of medical services, it is necessary to define and clearly delineate the boundaries of the object to manage. Clear and precise conceptual and terminological system is the basis for effective system of quality management.

However, what is quality and how to define it is not an easy question. In literature, there are many definitions for "quality of medical services (assistance)", here are some of them.

One of the most common approaches to determine quality of medical services are fulfillment of professional standards in medical care and compliance with provided medical care to patient expectations (Federal'nyj zakon... 2010).

Luminary in theory of quality medical services, Avedis Donabedian notes "quality of medical care is determined by the use of medical science and technology with the greatest benefit to human, at the same time without increasing the risk. Level of quality to the extent is the balance of benefits and risks to health" (Donabedian 1978).

M. I. Roemer and C. Montoya-Aguilar define quality as "...proper implementation of all measures (according to standards) that are safe, acceptable in the sense of funds in a given society and have influence on mortality, morbidity, disability..." (Roemer, Montoya-Aguilar 1988).

Also, another definition: the quality of care is the degree to which health services increase the ability to achieve desired outcomes for individuals and populations and meet current standards of professional knowledge (IOM 1995).

Furthermore, Russian legislation on health care has determined that the quality of care is a set of characteristics that reflect the promptness of medical care, selection of prevention methods, diagnosis, treatment and rehabilitation when providing medical care and achievement degree of the planned outcome (Davenport 2008).

Sometimes, employees in health care and patients evaluate the quality of service in different ways. Medical professionals define quality in terms of medical care in strict accordance with generally accepted scientific and practical standards and principles. This sometimes leads to a contradiction, especially when a doctor cares less regarding the results and cares more about his own safety and risks. Important in this case are the provided services in strict accordance with the generally accepted principles and standards of the medical treatment of a particular disease, but not the initiative, innovative and creative approach to treatment.

In assessing the quality of services there is a difficult aspect related to the fact that the quality is also determined by the subject of treatment. From the patient's point of view, the quality of health care may depend on many different factors. In our view it is primarily determined by the patient's condition, the nature of the disease and needed assistance.

In simple uncomplicated diseases, general diagnosis, treatment or when patients prophylactically do checkups, patients considerably pay attention to such factors as the relationship between the doctor and patient, courtesy and attentiveness of a physician, and those factors can be called as factors that determine the level of customer service.

To the quality of medical services, patients include factors that are not directly related to health care, only indirectly related to the treatment. These include: the proximity of clinics or hospitals, convenience of making appointment to see a doctor, no queues, courtesy of staff, competent answers of registry in clinics to asked questions, equipped institutions, new equipment and technologies, cleanliness and comfort of the facility, availability of pharmacies, cafes, and etc.

The abovementioned factors along with such factors as famous doctors and popular institutions can be called indirect factors of quality factors, determining rather image of a medical institution. These factors are undoubtedly important, but refer to them as determining the quality of medical services, as some authors do (Nazarenko, Polubentseva 2000; Lindenbraten 1994; Lisitsin 2010; Minyaev, Vishnyakov 2012) from our opinion, is not right.

Often the effectiveness of treatment is listed as the factor of the quality of service (Tatarnikov 2007; Schoenbaum *et al.* 1995; Spath 2009).

But the performance is the result of provided service and it should be attributed to the processes of quality measurement, but not to the quality itself.

Such terminological confusions have a very bad impact on solving the theoretical and methodological efficiency of management in health care.

## 2. Factorial approach to understanding the quality of care

In our opinion, terms "medical services" and "health care" should be separated and have clear and different meanings. The term service includes direct and indirect factors that affect it. The same with health or medical care, this concept is related to the direct factors, such as diagnostic and therapeutic processes. In other words, the term "health care" has more to do with professional obligations and the doctor only.

Such separation of the concepts clarifies the subject of control in management. When talking about management in health care, it would be better to talk about managing services in general. Provision of services starts from the

interaction of a medical organization with customers or the potential patients, in other words it starts from marketing. In the future, it becomes an interaction with the patient during his administration (in terms of management still a customer). Often, it is the quality of these early processes determines the profitability of the institution and customer satisfaction (patient).

Thus, the concept of quality in medical services from a management perspective is versatile and multi-faceted.

Figure 1 shows groups of direct and indirect factors affecting the quality of medical services.

Indirect factors include indicators related to:

- the level of infrastructure development: equipping health facilities, location of the organization, availability of parking space, technical equipment and the availability of modern information systems for patient care;
- the level of service: maintaining cleanliness, courtesy of staff, quickness of service, and etc.

This group discusses the qualitative characteristics of managerial personnel, information resources, funds, technology, labor relations in organization (corporate and organizational culture), conditions and motivation.

Direct factors are related to the treatment process. These include: diagnostic accuracy, accuracy in assigning the treatment for the diseases in compliance with the principles and standards of modern technologies and treatment of disease, detection of disease, and etc., thus, directly connected to the quality of work of doctors and nurses.

Furthermore, some experts attribute accessibility to the quality of health care, to the extent when medical care can be freely provided, regardless of geographic, economic, social, cultural, organizational or linguistic factors (Murzova, Senina-Volzhsckaya 2012).

In our opinion, those factors have weak relationship to the quality of medical services, although affordability without a doubt affects the quantity of services. From this perspective, management can influence the satisfaction of services using financial instruments.

This also applies to the performance indicator, which implies optimality between allocated resources for medical organizations (for example by state) and volume and quality of rendered services for the given money (Nazarenko, Polubentseva 2000). But it seems that in this case it is more important to talk about outcome indicator of the allocated state sources (funds). Obviously, this indicator can be used to determine the quality, but in a particular, the evaluation of the medical organization effectiveness in terms of its shareholder represented by the state. Even for private organizations this indicator is difficult to measure.

Often some authors use in their characteristics and indicators of the quality such factor as safety. A level where the system of medical care reduces the risk of injury, infection,

adverse side effects or other damage caused in the process of medical care (Nazarenko, Polubentseva 2000; Lisitsin 1993). Is it lawful and right? Obviously, security is directly related to the effective outcome of patient's satisfaction. But in our opinion, security in this sense means as one of the components that provides professional treatment. In this sense, this is not an indicator, but the principle of services. Safety principle (the principle of "do no harm") should be the main decision-making in treatment measures. At the same time, security can be found in assessing the quality of doctor's work of the, that is, in assessing the results of that work ("do no harm").

Figure 1 shows the most important direct factor of professional competence which refers to the level of skills of the main and auxiliary personnel in medical care, as well as performance of management and other staff.

Moreover, interpersonal factor relates to the quality of interaction between provided service and consumers, namely between healthcare professionals and patients.

The organizational factors of the quality in medical services are related primarily to the comfort index. This characteristic in health care affects the satisfaction of a customer. Comfort is defined as the appearance and cleanliness of all facilities used, related to the customer. Also, continuity factor determines a level to which the patient receives the necessary medical care without breaks, stops or unnecessary repetitions of diagnosis or treatment.

Thus, the degree of effectiveness depends if the treatment of the patient lead to an improvement of his condition and the desired result. This means that activities ensuring the quality of health services should be directed at both the clinical and organizational aspects of provided medical services.

### 3. Problems of management of health services and the process approach

The concept of quality medical services is necessary primarily for the effective management of these services. As already mentioned above, improper selection of management object may negatively affect the understanding of the problem.

There are existing common and widespread systems in management of medical organizations, such as bureaucracy, complexity and stringent functional boundaries. However, in an environment where customer satisfaction, accuracy of diagnosis, treatment process and results are paramount, linear-functional management structure ceases to meet these requirements. Now medical institutions have to be more flexible and more customer-oriented.

Such situation is better described by organizational processes and management system, based on the *process approach* to management. Consider this statement in more details.

According to the concept described by a leading specialist in the field of medical services A. Donabedian (1978), the quality system has to be considered from the standpoint of *structure, process and outcome*.

In the modern health care system of Kazakhstan (also applies to other CIS countries, as shown by the analysis of sources), the main focus in the system of quality evaluation is paid to the quality of the structure and results. This is due to weak resources of equipment in healthcare.

However, in recent years Kazakhstan and other CIS countries are trying to better their structural component by improving financial base, increased purchase of modern equipment, training and retraining of doctors but it has not resulted in adequate growth of quality in health care and has not reduced the mortality rate.

The weak points of the current state in medicine are processes occurring inside the system, the service processes. From this point of view, everyone has to transition to *activity based quality assurance*.

What are the process and the process approach to management?

It is well known that any work is carried out as a process and exists as a process. Nevertheless, there are many different definitions and meanings from authors. For example, Andersen B. defines "...a process is some logical sequence of related activities that converts input or output to results." (2003). Polotskiy and Vinogradov write "...the process is

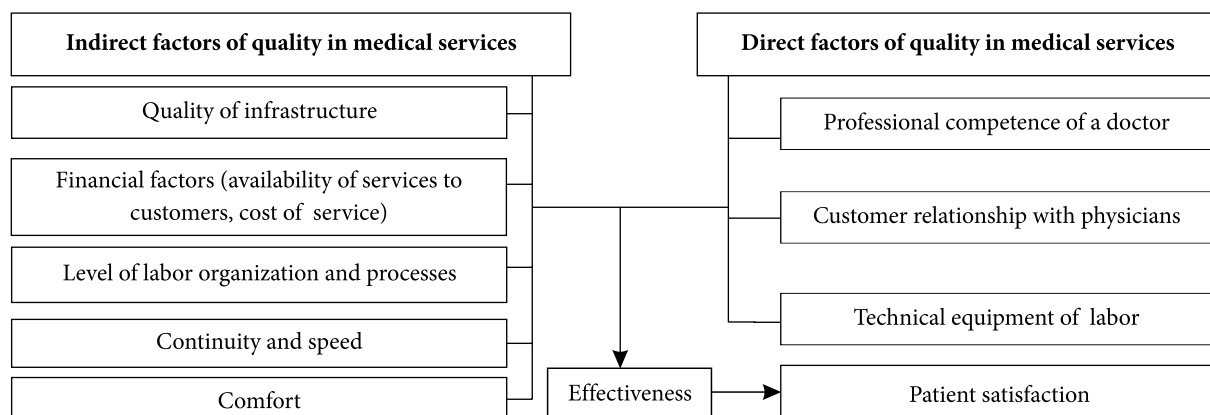


Fig. 1. Quality factors of medical services

the execution sequence of functions (work, operations), aimed at creating a result that has value to the customer..” (2002). Definition of the process by ISO 9000:2000 sounds a bit wider “...the process is a set of interrelated or interacting activities which transforms inputs into outputs..” (ISO 9000:2000). It can include activities such as planning, production, trade, research, administration, and etc.

In managerial practice, it is accepted to speak not only about processes but about the business processes, emphasizing that this work is carried out in a non-profit organization and is part of the work. Thus, it increases the value of the product or operations on earning income through meeting the needs of customers and the market.

It is generally accepted that the processes must be:

- Continuous, consistent, documented;
- Aimed at creating a result that has value to the customer;
- Controlled and that there are provided points, methods and means of control;
- Rationally built to exclude “refunds” or unnecessary and inefficient operations;
- Provided with information channels and etc.

This process is subject to a control, and it is necessary to provide it with the following factors:

- Resources necessary for the processes to function with a given efficiency and effectiveness;
- Ways and means to achieve planned results and set goals;
- Procedures to change the management processes;
- Procedures and decision-making in the event of non-compliance or failure in the process, etc.

The first diagram (Fig. 2) of the process is the “black box” model which has input and output, suggested by the cybernetic known as Norbert Wiener in the middle of the last century (Wiener 1964).

Herewith, inputs in general case represent raw materials, energy, executors, documentation and information, tools and equipment, environmental conditions, and the outputs usually represent products, services, solutions, and other information.

The concept of “process orientation” was first described by M. Porter. He believed that all the organization’s activities can be divided into separate processes to create value (Porter 1985).

E. Deming contributed the process orientation by introducing the flow chart reflecting the relationship within the company – from the supplier to the consumer, and also introduced controlling instruments such as the measurement of processes and their continuous improvement (Walton 1986).

Later, the focus on the business approach was developed by the processes of such experts in the field of quality, as M. Hammer, T. Davenport, D. Short.

M. Hammer, in particular, introduced the term “reengineering of business processes” to describe radical means of transition to the type of company which is consumer-oriented and based on strategic business processes. He believed that the process orientation will help the organization to overcome the problem of functional to the cross-functional activity (Hummer, Champy 2001). Hammer also believed that intra corporate culture oriented on business processes is based on systematic reasoning and directs processes of the company on a customer and cross-functional activities. M. Hammer described the process of reasoning into four categories based on cross-functioning and focused on the final results of the organization:

- Business processes,
- Work performance and structure,
- Measurement processes and measurement systems,
- Values and beliefs.

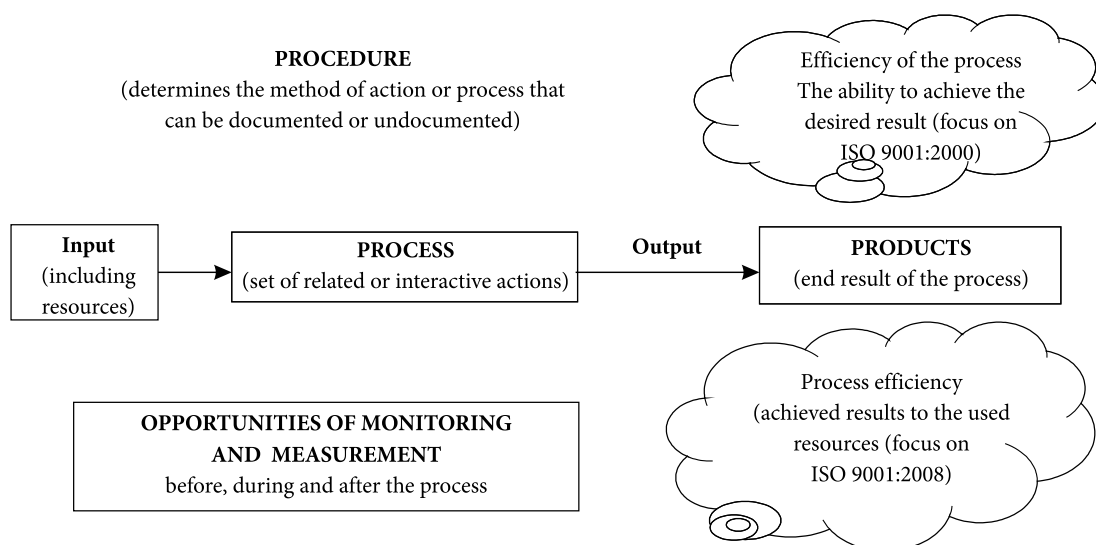


Fig. 2. Process model by the Wiener-Adler

Moreover, T. Davenport (2008) saw the process as a set of elements that have their own structure, focus, methods of measurement, as well as owners and consumers of the process. He emphasized special importance of commitments to continual improvement of processes and systems for collecting information about them, assuming that the processes are the major components of corporate (intra corporate) culture.

Also, important to consider the views by B. Andersen (2003) on the process and functional management approaches. Functional organization slows down, in his opinion, the development of the organization due to the functional isolation of workers. Organization by process has advantages in comparison with organization by functions:

- Creation of value with respect to the final product is concentrated in the process,
- Delimitation of the process, as well as suppliers and customers, will ensure better communication and understanding of the requirements that should be met,
- In management of a holistic process that goes through many departments, it reduces the risk of sub-optimization,
- In appointment of process executors, it will be possible to avoid the allocation of responsibility in fragments that often happens in specialized enterprises, and etc.

Furthermore, the development of the theory for the management process approach leads practitioners to use its principles or even radical transition to the organization by process of reengineering of a company.

However, all this to a less degree relates to the area of healthcare. In the health care industry process approach remains to be a “dark horse” and not widespread.

Herewith, the official recommendations for the healthcare industry is still accepted and adopted. In quality management of healthcare there is an introduced international standard IWA 1:2005. Standard contains recommendations that go beyond the requirements in ISO 9001 and includes consideration of the effectiveness and performance of the quality management system, and therefore, the potential to improve the entire organization. This standard is applicable to any medical organization processes, thus, quality management principles on which it is based, and can be extended to the entire industry. This standard is applicable to any medical organization processes, thus, quality management principles on which it is based, and can be extended to the entire industry.

#### 4. Basic processes of the medical organization

In accordance with recommendations for the use of ISO 9001 in Medicine (IWA1) the basic process of patient/client care, called the consumer is shown in Figure 3.

The main activity of a health organization under this diagram is the design, planning, delivery and monitoring of medical services to patients/clients.

It is quite obvious that this model is based on a cycle of improvement PDCA, applicable to other processes of care, such as training and ensuring the prevention of diseases.

Furthermore, under the requirements and expectations the understood concepts are complaints from patient (client) who seek medical care (item 1 in Fig. 3), as well as meeting the needs identified by the results of examinations and laboratory diagnosis (item 5 in Fig. 3).

For medical organization, design and development of medical care (item 6 in Fig. 3) may include, for example, the formation or clarification of the range of services and

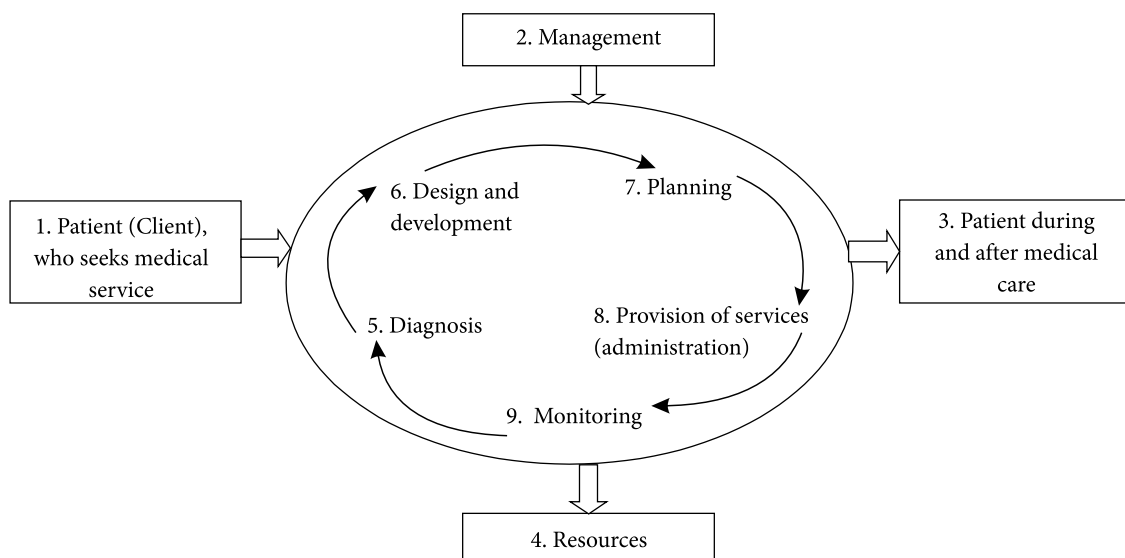


Fig. 3. Model of the process approach to the medical organization

maintenance programs, treatment, examination and interview protocols, or purchase of medical equipment, and etc.

Medical facility must plan (item 7 in Fig. 3) the supply and evaluate health services, including support services, resource allocation, evaluation criteria and improvement procedures to better meet the expectations of customers and stakeholders.

Especially it should be noted that planning should be carried out during service procedures for the organization as a whole, and a particular service for a particular client.

In providing health services (item 8 in Fig. 3) medical institution shall ensure compliance with the stated treatment plans and accepted standards, requirements or procedures and relevant criteria for accreditation of medical organization.

Organization in the implementation of the management system for IWA 1 should use the appropriate tools of the highest standards and equipment for research, tests, and maintain a database of normative data. The premises must be properly maintained, be clean, repaired and constructed in accordance with the requirements.

Monitoring (Item 9 in Fig. 3) may, for example, mean actualized periodical report on the state of health or patient's records that reflect the compliance with treatment, contingency analysis, performance monitoring, and treatment efficacy or other regulatory actions.

Moreover, evaluation of customer satisfaction during and after health care (Item 9 in Fig. 3) means all patient's

questions are answered in timely manner, the analysis of patient (Customer) satisfaction is conducted on regular basis in regard to the work of medical staff, the patient waiting time before checkup, treatment, examination or follow-up visits, clinical results, including the results of adverse events.

Allocation of processes in each medical organization will be personal. But in average, it is possible to distinguish particular groups of processes, which are highlighted in the IWA standard.

Figure 4 shows the enlarged group of processes that are present in almost any medical organization.

Thus, the analysis shows that the quality of medical services in the literature is still poorly developed. Existing approaches to measuring the quality of medical services and its evaluation differ considerably in the understanding its meaning, essence and separation of factors affecting quality.

The abovementioned classifications of the factors affecting the quality of medical services are direct and indirect factors. This grouping helps to clearly understand the quality of service in general and the quality of work of the physician.

In conclusion, determining the object of management in the form of the quality of medical services allows transitioning to quality management systems. At the same, structural and effective aspects of quality management today does not provide sufficient efficiency in the management of quality of services. As world practice and modern management theory shows, today one of the most health care management is the process oriented concept.

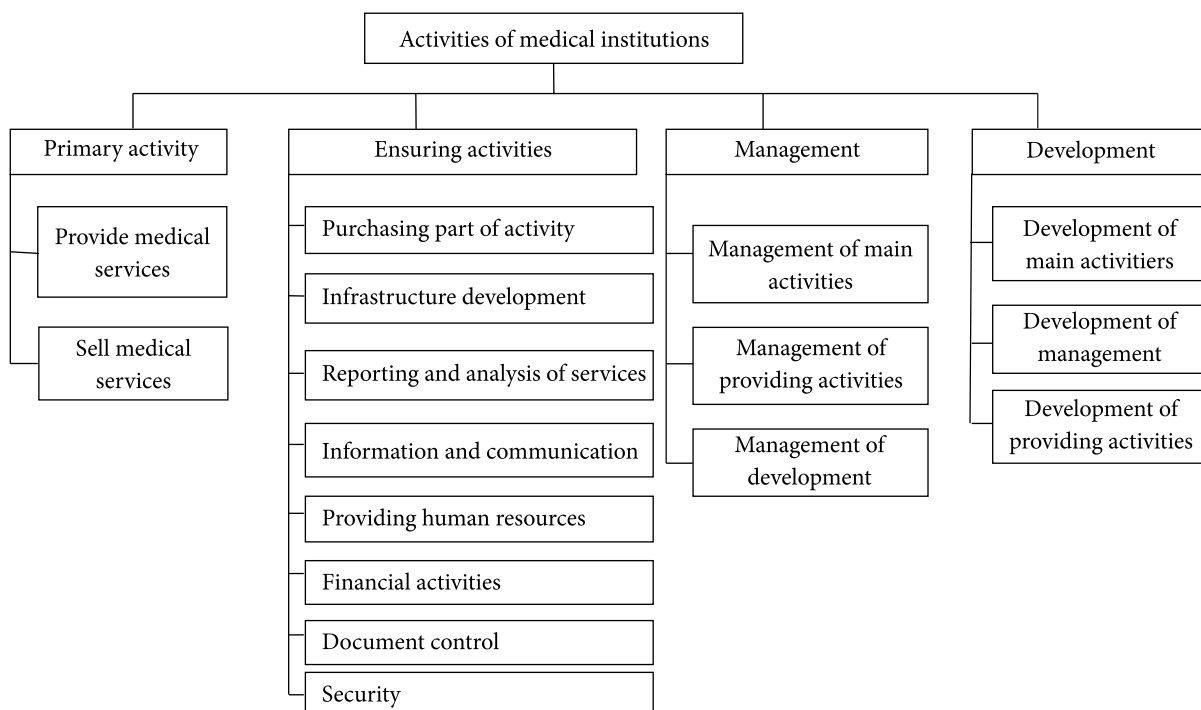


Fig. 4. Enlarged group of processes in medical organization

## Conclusions

Quality of care is one of the most difficult categories. This is due to the fact that it is influenced by many subjective and objective processes, measurable and immeasurable, hard to detect and identify, dependent and independent of the doctor and the client. Analysis of the definitions of quality of care showed that today there is no unity in the approach to its definition. The author's approach is based on the identification of direct and indirect factors allowed to approach the phenomenon from the point of view of management.

Analysis of Quality Management shows that today the most common is a functional approach to management. This approach is not effective in terms of controlling and monitoring the progress of medical services. Is the most appropriate process approach to management of health services. Model quality of care allowed to distinguish the basic processes occurring in the medical organization.

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