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Introduction of the model for the management accounting of the outpatient care quality based on internal audit

Introducción del modelo para la gestión contable de la calidad de atención ambulatoria basada en auditoría interna

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Content

ABSTRACT:

The article presents the possibilities of the management accounting of the outpatient care quality based on internal audit. In the course of the study, data from outpatient medical records of patients registered for regular medical check-up were analyzed. The outpatient medical records data were evaluated for compliance with the proposed indicators and metrics. The study identified the directions to improve the quality of outpatient care. It shows that the management accounting of the outpatient care quality based on internal audit provides a real opportunity to ensure continuous improvement in the quality of the patients' medical care in health care institutions. The developed approach which provides for the functioning of the model for the management accounting of the outpatient care quality based on internal audit would enhance the effectiveness of the management decisions in providing the patients with outpatient care. The article proposes a system of multilevel strategies to ensure the quality of medical care, which comprehensively integrates the possible ways to improve the quality of medical care.

Keywords: health care institution, medical care,

RESUMEN:

El artículo presenta las posibilidades de la contabilidad de gestión de la calidad de la atención ambulatoria basada en la auditoría interna. En el curso del estudio, se analizaron los datos de registros médicos ambulatorios de pacientes registrados para un chequeo médico regular. Los datos de los registros médicos ambulatorios se evaluaron para el cumplimiento de los indicadores y métricas propuestos. El estudio identificó las instrucciones para mejorar la calidad de la atención ambulatoria. Muestra que la contabilidad de gestión de la calidad de la atención ambulatoria basada en la auditoría interna brinda una oportunidad real para garantizar la mejora continua en la calidad de la atención médica de los pacientes en las instituciones de atención médica. El enfoque desarrollado que proporciona el funcionamiento del modelo para la contabilidad de la gestión de la calidad de la atención ambulatoria basada en la auditoría interna mejoraría la efectividad de las decisiones de la administración al proporcionar a los pacientes atención ambulatoria. El artículo propone un sistema de estrategias multinivel para garantizar la calidad de la atención médica, que

outpatient care, dental service, outpatient care quality, internal audit, management accounting model.

integra de manera integral las posibles formas de mejorar la calidad de la atención médica.
Palabras clave: institución de atención médica, atención médica, atención ambulatoria, servicio dental, calidad de la atención ambulatoria, auditoría interna, modelo de contabilidad de gestión.

1. Introduction

The quality and effectiveness of health care institutions (hereinafter referred to as HI) are among the most topical issues in health management and are claimed to be among the most important ones for any country, regardless of its political, ideological or economic orientation and health system model (Kochkina, Krasilnikova, Shishkin 2015).

According to N.V. Poluninova, the essence of the concept of quality in health care is to meet human needs with regard to maintaining and improving the health. Some scientists give the definition of quality in health care through the quality of medical care as the aggregate results of the prevention, diagnosis and treatment of diseases, defined by the established requirements on the basis of the achievements of medical science and practice (Polunina 2010, p. 23).

The assurance of medical care quality is impossible without conceptualizing the health care development, sufficient regulatory support and organization of the management systems, economic feasibility, and logistical support (Lisitsyn, Ulumbekova 2011). According to E.Yu.Ogneva, the quality of medical services largely depends on HI. (Ogneva et al 2010, p. 32).

It should be noted that the process of continuous management of medical care quality requires the gathering of information to directly assess and compare the activities of agencies and regional health authorities for further analysis and detection of opportunities and ways to improve quality. That is why quality indicators usually meet certain key characteristics of medical technologies, their logistical and staffing support that are not the "target function" of the health care system but lend themselves to immediate correction using managerial decisions (Pereira 2015).

The issue of improving the quality of the provision (among other) of dental services is very important at the present stage of dentistry development. The notion of dentistry management system includes the following: the processes of dental services' provision, the presence of a goal (satisfaction of the consumer's need in the provision of dental care), a general management model, management subjects (the leadership of health committees, chief physicians, deputy chief physicians, department heads, directors and clinic heads, private clinics' managers), management objects (dentists, middle and junior medical staff, any economic objects of the institution), management principles, management functions, methods of influence on the processes and means of influence.

Although modern dentistry is characterized by organizational and economic leadership, at the same time, modern management technologies, organizational and marketing mechanisms for their implementation remain insufficiently developed.

Currently, particular attention is given to new approaches to the management of medical organizations. In Kazakhstan, the transition of public health institutions to the new regulatory status is taking place, and the principles of sustainability and self-financing are being increasingly introduced. Therefore, the need to study internal resources to increase the effectiveness of the dental clinics' activities also increases.

An audit is a systematic, independent and documented process for obtaining audit evidences and evaluating them objectively to determine the extent of compliance with the audit criteria (Esposito, Canton 2014). N.A. Naumova defines the audit as a systematic independent investigation to establish whether the activity in the quality sphere and the results obtained correspond to the plans, how efficiently these plans are being implemented, and whether they are suitable to achieve the goals (Naumova 2012; Naumova 2011).

Internal audit provides for the efficient feedback channels for the collection and analysis of

information about the medical services provided. Formation of feedback channels and selection of useful information to assess the quality is an important element of the medical care quality management system that is achieved by the audit, i.e. defines the medico-social orientation of the internal audit mechanism (carried out with the involvement of patients and medical staff with tracking the impact on their health) (Lim, Grafton 2013).

The audit functioning is based on the processes of health care certification, accreditation, standardization and licensing. The effectiveness of the mechanism of management accounting of the outpatient care quality based on the internal audit is ensured by the quality management system existing in the HI.

As a system, the mechanism of management accounting of the outpatient care quality based on the internal audit is characterized by elements of planning, organizing, motivating, and includes the following components:

1) The structural component of internal audit (the relevant organizational hierarchy, which makes possible the functioning of internal audit within the HI);

2) The informational and methodical component of internal audit (regulations defining the audit procedure; audit training programs for medical staff);

3) Motivational component of internal audit (motivational levers for the HI staff in internal audit and improvement of the medical care quality) (Park et al. 2016).

The scope of the study is to develop a model of management accounting of the outpatient care quality based on internal audit in the HI of Kazakhstan.

The research hypothesis is as follows: the management accounting of the outpatient care quality based on the HI internal audit will provide an opportunity for the adoption and implementation of the effective management decisions to ensure continuous improvement of the patient care quality in the HI of Kazakhstan.

The results of the study have shown that the implementation of an efficient management model of medical care quality involves the application of internal audit mechanism, which allows improving the quality of medical care for patients.

2. Methods

The systematic approach, design method, simulation, and statistical survey were applied in the study.

The data of the outpatient medical records of 226 patients aged 18-74 years with a note on regular medical check-up (men - 31%, women - 69%) were analyzed. The number of dispensary patients on ten sites was 1,004 persons, the proportion of the audit group in the total number of dispensary patients - 22.5%.

The following official indicators were analyzed when checking the outpatient medical records.

1) The availability with the physician of a local clinical protocol for patient management;

2) The percentage of patients whom the advice was provided on lifestyle modification and the "Patient Information Sheet";

3) The percentage of patients with a target level of health indicators;

4) The percentage of patients who received information about the medical condition during the reporting year.

In addition, in order to assess the quality of interventions for the prevention and treatment of patients, there was calculated the percentage of patients whose outpatient medical records included the following:

5) A record of risk factors;

6) The data on the damage to the target organs or the absence thereof;

7) The information about related diseases or the absence thereof;

8) The record of laboratory survey methods (urinalysis, complete blood count, etc.);

9) The information on conducting instrumental examinations (electrocardiography,

ultrasound, chest x-ray, etc.);

10) The information on risk stratification;

11) The record of professional advice during the reporting year;

12) The data on blood pressure measurement during each visit to the clinic;

13) The information on the number of aggravations per year or the absence thereof;

14) The record of at least two regular check-ups during the reporting year;

15) The data on the drug treatment order; and

16) The information on the number of calls (for a district doctor, ambulance) per year or the treatment in hospital.

The results of the survey using a restricted questioning of patients served as the material for a comprehensive analysis of compliance by dispensary patients with preventive and curative recommendations of physicians. Interviewers were the interns and senior students of the medical institute who, together with the district nurses, visited dispensary patients at home. Simultaneously with the questioning, a preventive discussion was conducted with patients and members of their families on lifestyle modification, risk factors and possible complications of the disease.

A total of 1,004 patients were interviewed: 29.2% of men, and 70.8% of women. By age, the audience was subdivided as follows: 18-34 – 7.2%; 35-59 – 29.9%; and 60 and older - 62.9%.

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3. Results

Audit of medical records showed the following:

The outpatient medical records of 14% of patients lacked the information about the medical condition of the patient during the year;

Only 40% of patients received recommendations on lifestyle modification;

18% of the outpatient medical records lacked the information on risk factors; 46% of outpatient medical records lacked the information on the damage to the target organs or the absence thereof;

81% of the outpatient medical records contained the information on concomitant diseases or the absence thereof;

70% of the outpatient medical records had data on specialist advice; and

62% of physicians had unified patient management protocols;

Dynamic monitoring of the patients' condition was not carried out at the recommended level since clinical examinations twice a year were performed only in 41% of patients;

More than 80% of the outpatient medical records contained information on the necessary counts;

45% of the outpatient medical records contained the data on the results of ultrasound examination; 73% of the outpatient cards had a record of fluorography; and 79% of the outpatient medical records contained the data on electrocardiography; and

48% of the outpatient medical records lacked information on risk stratification.

The audit of patient satisfaction showed that dispensary patients were aware of the course of their disease, preventive measures and risks (97% confirmed the receipt of detailed information about their disease in the polyclinic). The patients indicated "I forget", "I do not have the time", "I do not want" as the main reasons for the unsatisfactory fulfillment of the physician's recommendations.

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4. Discussion

Currently, the interest of all countries in the world to the problems of quality in health care is caused by the increasing demands of the population, increased attention to the final results

of medical activities and new approaches to quality management (evidence-based medicine, standardization of medical services, organizational technologies, etc.).

International experts define four main categories of medical care quality: the effective and advanced medical care, efficient use of resources, meeting the needs of patients and the treatment effectiveness. Quality management includes the following components: assessment and monitoring, continuous improvement and quality assurance. The facts of the poor quality of medical care are noted in all countries of the world; however, the low quality is most typical for countries with the transitional economy (Parsons et al. 2013).

Foreign researchers consider the wide use of the principle of total management as a new conceptual approach to quality assurance of medical care, which allowed for the effective implementation of medical sector reforms in the United States, Great Britain, Finland, Sweden, Spain, Italy and most Central European countries (Jacobs, Rapoport 2004).

There are substantial differences in the sets of indicators that are calculated in different countries and projects, in the methods of gathering information and even in terminology. However, the analysis of the experience of estimation and the use of medical care quality indicators in such organizations as the NHS (United Kingdom), NCHOD (United Kingdom), OECD (International Organization), AHRQ (United States), NCQA (United States), etc. (Karayeva 2014) allows to identify and formulate some common features characteristic of modern systems for measuring the medical care quality:

- Measuring the quality of health care in countries such as United Kingdom, the United States of America, Canada, Australia, the European Community countries, etc. is conducted systematically by powerful units of public health services, non-governmental and even international organizations;

- The indicators are based on data. The main efforts of the quality measurement systems are directed not only at calculation and analysis of indicator values but, above all, at obtaining the reliable and qualitative primary data, suitable for further analysis and comparison. In the description of indicators, the description of primary data, such as medical forms and documents, databases, statistical information and analysis of the level of ensuring proper data quality, are of particular importance. The mechanisms for obtaining information, technology values and other information are worked out in detail, allowing the user to form their own opinion about the reliability of the data and, if necessary, to perform calculations using their own data and obtain the values of indicators to evaluate and compare its own practices with others. At the same time, more than the half of the total volume of the publications are devoted to the description of sources and the analysis of data quality, which are used in the calculation of indicators. The automated databases of medical data are an important source of information in the modern conditions. Therefore, the methods of their automated processing and extraction of information (data mining) are widely used to obtain medical care quality indicators (Meesala, Paul 2018); and

- When publishing the results, all these systems strictly and unequivocally warn against the inadequate and incompetent use of the information obtained. It is noted that "the results obtained may not be used for direct comparison of regional health services or individual institutions", "value of an indicator cannot be the goal", etc. The possible reasons for the differences in the values of indicators not related to the differences in the quality of medical care (first of all, the differences in the composition of patients, possible shortcomings in the registration of primary information, statistical errors caused by a small number of observations, etc.) are necessarily indicated and analyzed.

As for Kazakhstan, in our opinion the formation of the aggregate of certain determinants in the quality management system of medical care in the HI creates a framework of possible directions of improving the medical care quality.

The common system of the main determinants of medical care quality assurance in the HI of Kazakhstan consists of four groups of factors:

1) Resources: the amount of funding, medical staff, equipment, the conditions for providing medical care, the efficiency of resource use;

2) Management/organization at the state level: licensing, accreditation, standardization,

external audit, funding mechanisms (financing under the articles or in the framework of the unified budget), state regulation of activity of economic entities with non-state forms of ownership in the field of health care, unified clinical protocols, motivation system, medical insurance and personnel training system;

3) Management/organization at the level of institutions: the standardization of the stages of medical assistance, treatment technologies, local protocols, internal audit mechanism, the formation of an enabling environment, motivation system and staff training; and

4) The behavior of the population (patients): the lack of responsible attitude towards health, healthy lifestyle factors, level of information awareness, the performance of the physician's orders, and attitudes towards preventive physician's recommendations.

Accordingly, it is necessary to form such a system of multilevel strategies to ensure the quality of medical care in HI that will holistically integrate possible directions of improving the quality of medical services in Kazakhstan:

1) Resource strategies that involve the extensive use of production factors in health care sector (equipment, personnel, finance). These include the strategy of quantitative and qualitative increase in fixed assets of the HI, the strategy of increasing the professional and quantitative growth of medical personnel; and the growing finance strategy. The application of such strategies is conditioned upon the sufficiency of funds. Some elements of these developmental directions in the field of health care quality (for example, improving the professional level of HI medical staff) can be applied in the implementation of other groups of strategies;

2) Management/organization strategies at the state level aimed at modernizing the health system directly and related to changes in funding and management mechanisms and patient treatment approaches;

3) The strategies for changing the behavior of the population (patients) associated with the formation of health-saving motivations. They are aimed at the formation of the responsible attitude of the population to their health and presuppose the effective communication for achieving sustainable behavioral changes through targeted interactions (recommendations); and

4) Management/organization strategies at the HI level that involve the use of internal audit, standardization, benchmarking, motivational factors, etc. as the basis for improving the effectiveness of medical care quality management.

Taking into consideration four groups of factors in the system of the main determinants of health care quality assurance in the HI of Kazakhstan, the following conclusions have been made:

1) The factors of the "management/organization at the state level" group are dynamically developing and influence the quality assurance processes in the health care sector;

2) The current state of the economy makes it possible to increase the resource component of health care quality improving; however, the issues of the effective use of existing resources remain relevant;

3) The change in the attitude of the population to the benefit of health-saving motivations requires a long time (10-20 years or more); and

4) The introduction of a health care quality management system at the HI level is necessary, which is an actual and promising direction for rapid changes in improving the quality of medical care, since the HI has a significant potential for a dynamic and flexible response to changing health care needs in the quality sphere, which is not fully utilized.

The proposed organizational and methodological approach towards health care quality management envisages cyclical evaluation of the medical services quality in the HI and functioning of the model of management accounting of the outpatient care quality based on the internal audit.

In addition to the actual audit cycle, the basic elements of the model should be the regulatory and legal support for quality management of outpatient care (the conditionally

constant component); environment for the outpatient care quality assurance in the HI (the conditionally variable component) (Goncharov, Boichenko, Oranskaya 2013).

The current level of the outpatient care quality in the HI defines the information-focused direction of the internal quality audit. In its turn, the effectiveness of the internal audit cycle depends on the formed environment for ensuring the outpatient care quality: the motivational and structural components, which change under the influence of management decisions taken as a result of each audit cycle; and the regulatory support for the management of the outpatient care quality in the HI. (Khairullin, Kurylev, Kapustina 2015)

To improve the effectiveness of implementation of internal audit in the HI, the following classification of internal audit by analysis and verification criteria is offered.

The first group - the structure audit - includes the following types: financial and economic audit, staffing audit, material support audit, and the audit of medical records.

The criterial base of the structure audit types is as follows:

For the financial and economic audit - medical and economic standards and calculations;

For the staffing audit - the necessary qualifications and regulatory staffing of medical institution personnel;

For the material support audit - the lists of equipment of the HI, determining the minimum list of equipment and facilities necessary to conduct medical procedures with the relevant standards of medical care and clinical protocols; and

For the medical records audit - the quality of maintaining medical records (filling out medical records).

The second group - the process audit - includes the following types: clinical audit, technological audit, organizational and methodical audit, and the audit of the implementation of medical technologies and equipment.

The criterial base of the process audit types is as follows:

For the clinical audit - local clinical protocols that define mandatory actions for prevention, diagnosis and treatment based on evidence-based medicine;

For the technological audit - the indicators of local clinical protocols, the results of the timing of the medical care stages and the duration of interstage periods, and the best standards of medical practice of the HI established by expertise;

For the organizational and methodical audit - organizational and methodological and regulatory support for the HI, compliance with the executive discipline, computerization, the use of ICT, audit of the introduction of medical technologies, etc.

The third group - the result audit - includes the following types: the audit of patients' and medical staff's satisfaction, patient health audit, public health audit. The opinions of patients and medical staff are the basis for comparison when conducting an audit of patients' and medical staff's satisfaction.

The statistical reports serve as the criterial base for the public health audit. Surveys of statistical reports provide an opportunity to compare indicators, derive the dynamic series in order to study the level of quality of medical care provided.

The choice of the type of internal audit and criterial base determines the specifics of its conduct: selection of specialists who are members of the working group; the amount of primary documentation for information gathering; and the elements of the internal environment of the HI that require changes. That is, the effectiveness of internal audit is determined by the functioning of the existing model of the health care quality management system in the HI.

The cycle of internal audit of the outpatient care quality consists of five stages:

1) Planning: selection of the topic, purpose and objectives of the audit, issuing an order for the conduct of internal audit;

2) Audit preparation: the collection of information, analysis and evaluation of the institution's performance indicators, selection of methodology and relevant

standards/indicators for the assessment of outpatient care quality in the HI;

3) Conduct of an audit: identification of shortcomings and bottlenecks in the organization process, submission of proposals for improving existing medical practice;

4) The introduction of changes: the publication of an order on the results of the internal audit, implementation of proposals for improving the outpatient care quality; and

5) Monitoring and evaluation of implementation.

At the first stage of the internal audit - planning in the HI - an order is issued to conduct an internal audit, which specifies the purpose and objectives of the audit.

The audit preparation phase includes the following:

a) The selection of methodology: analysis of primary documentation, reports, compliance of the treatment process with local protocols, standards, patient opinions monitoring, etc;

b) Definition of standards and indicators of medical care quality on this topic. The values indicated in the official protocols or developed independently within the HI can serve as indicators. The standards can be clinical practical guidelines, clinical protocols, which are the step-by-step instructions for performing a specific procedure (for example, a transfusion protocol), the indicators of best practices, etc.

At the audit stage, the accumulated information is analyzed, shortcomings and bottlenecks are identified during the organization of outpatient care in the HI; the proposals for the improvement of the existing medical practice are being developed and submitted, and the relevant minutes of the multidisciplinary group meeting is drawn up.

In our opinion, particular attention should be paid to monitoring the duration and improving the management of the interstage time interval, since the majority of patients express dissatisfaction, namely with the organization in the interstage time intervals for the provision of medical care in the HI (queues at the polyclinic, waiting for treatment in the waiting room, waiting for execution of documentation, etc.).

After the data collection, the multidisciplinary team analyzes and interprets them.

At the stage of introducing changes, an order is issued within the HI on the results of the internal audit and the implementation of proposals for improving the quality of medical care with the definition of the reaudit period.

Then the introduction takes place, and the emerging problems are registered.

The final stage of the audit includes the implementation monitoring and assessment.

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5. Conclusion

The use of internal audit in the medical care quality management system allows the HI to move from static quality improvement check to dynamic one.

The proposed mechanism of management accounting of the outpatient care quality based on the internal audit includes the following components: structural component of internal audit (relevant organizational hierarchy, which makes possible the functioning of internal audit in a health care institution); the informational and methodical component of internal audit (regulations defining the audit procedure; training programs for medical personnel to conduct audits); motivational component of internal audit (motivational levers for staff of the health care institution to conduct the internal audit and improvement of the medical care quality).

The reserves have been identified in order to improve the quality of outpatient care, namely the full coverage of dispensary patients with specialist advice, laboratory and instrumental examination methods, data on risk stratification for the prognosis evaluation, etc.

The classification of types of internal audit by criteria of analysis and verification has been proposed to increase the effectiveness of practical implementation of the internal audit mechanism, namely: 1) audit of the structure: financial and economic audit, personnel audit, material support audit, medical documentation audit; 2) process audit: clinical audit, technological audit, organizational and methodical audit, audit of the effectiveness of the

introduction of medical technologies; and 3) audit of the result: audit of patients' and medical staff's satisfaction, patient health audit, public health audit.

The prospects of the further research are to develop indicators of the functioning efficiency of the management accounting model of the outpatient care quality based on internal audit in HI of Kazakhstan.

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