

REVIEW ARTICLE

INFORMATIZATION OF HEALTH CARE ON THE EXAMPLE OF A UTILITY COMPANY

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ABSTRACT

The aim to provide valid, relevant, permanent, timely information to all health care institutions, as well as citizens of Ukraine in the framework of public health management processes for quality medical care.

Sociological method - allows you to study the social structure and its impact on health. Systems analysis as a scientific method of cognition, which makes it possible to establish structural connections between system elements.

Medical information system is a type of information system that differs in a set of methodological techniques, techniques and management algorithms designed to collect, store, process and transmit information in health care facilities. An single information system ensures the provision of reliable information in the right amount, in the right place, at the right time for members of the health care system. One of the important factors in the implementation of health care reform is the electronic health care system (E-Health). E-Health consists of two interconnected parts, one of which - the central database - will be controlled by the state. Institutions will have access to it through the second part, which is called privately developed medical information systems. The National Health Service of Ukraine ensures the functioning of the electronic health care system and a website containing information on the electronic health care system.

Health care informatization today is an integral, perhaps the main, component of any health care reform in today's world. Creating a single information space has many advantages.

KEY WORDS: informatization, health care, utility company

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INTRODUCTION

The rapid development of information and communication technologies is seen by most countries as the main response to these challenges in the field of big data and artificial intelligence. In developed countries, the digital transformation has already changed a number of industries and organizations. Information and communication technologies bring significant benefits to both public health and individual health care, adapt the methods of providing medical services and the nature of health systems management at all levels [1].

During the years of independence, the state has carried out significant work on the formation of theoretical foundations and practical application of the latest computer technologies in health care. In Ukraine, health care reform is about changing the funding system and introducing the «money follows the patient» principle.

The creation of a modern electronic system that will significantly increase the efficiency and transparency of health care is an important tool for implementing reform. The medical industry is closely involved in the accumulation and processing of large amounts of information. There is a need for long-term data collection and analysis and the use of electronic systems to ensure the proper quality of health care [2].

Today, it is impossible to ensure the reform of the health care system, it is impossible to achieve high quality health care, transparency and efficiency of management without the introduction of modern methods of storage, processing and transmission of information. In order to raise the system of practical medicine, medical education, science to the current level, the state policy of health informatization provides for measures aimed at eliminating the gap in this area with the advanced world powers and accelerating the entry into the information space of the international community.

The implementation of this policy is carried out in several main areas: development of the legal framework for health care informatization, improvement of its organizational and personnel support, formation of the appropriate technical base and means of informatization, involvement of public organizations in the informatization of the industry [3].

The main tasks of health care informatization:

- at the state and regional levels - to ensure prompt and long-term control of the Government's efforts to improve the health of the population of Ukraine, which will help reorient public policy to new approaches to public health;
- at the departmental level - to exercise quality control of management decisions through operational and reliable

statistics of health indicators, to create a basis for the introduction at a fundamentally new level of insurance and family medicine, new technologies for diagnosis and treatment;

- at the level of every citizen of Ukraine - to ensure the sequence of medical actions, monitoring of personal health and protection of the patient from possible unprofessional actions of medical worker

THE AIM

The purpose of health care informatization is to provide valid, relevant, permanent, timely information to all health care institutions, as well as citizens of Ukraine in the framework of public health management processes for quality medical care.

MATERIALS AND METHODS

Sociological method - allows you to study the social structure and its impact on health. Systems analysis as a scientific method of cognition, which makes it possible to establish structural connections between system elements.

REVIEW AND DISCUSSION

An information system is a set of methodological, organizational, regulatory and legal support, as well as staff and software and hardware to meet the information needs of users. Medical information system is a type of information system that differs in a set of methodological techniques, techniques and management algorithms designed to collect, store, process and transmit information in health care facilities [4, 5].

The task of health care informatization is to provide tools for the implementation of health care financing reform and the functioning of the National Health Service of Ukraine as a single national customer and payer for medical services.

An single information system ensures the provision of reliable information in the right amount, in the right place, at the right time for members of the health care system [6].

Information and communication technologies provide the benefits of big data processing and intelligent systems for forecasting health care needs, planning resource resources, supporting clinical decisions, and improving the quality of health care. They provide an opportunity to involve the patient in the care of their own health, quality control of services received by providing access to their own medical data and their disposal.

One of the important factors in the implementation of health care reform is the electronic health care system (E-Health). In order to sign an agreement with the National Health Service of Ukraine, a health care institution must be registered in this system. And in order to fulfill the contract with the National Health Service of Ukraine, chief physicians and medical staff must have their own qualified electronic signatures [1].

E-Health consists of two interconnected parts, one of which - the central database - will be controlled by the state. Institutions will have access to it through the second part, which is called privately developed medical information systems.

Medical institutions can choose any medical information system among those who passed the test and connected to the central component of the electronic health care system. Developers of medical information systems are required to adhere strictly to the requirements for reliability, security and confidentiality of data that their systems will share with the central database.

The National Health Service of Ukraine ensures the functioning of the electronic health care system and a website containing information on the electronic health care system.

The owner of the central database is the state represented by the National Health Service of Ukraine.

The administrator of the Register of Medical Specialists and the Register of Business Entities in the field of health care and the owner of their information is the Ministry of Health. The administrator of other registers and the owner of their information and other information in the central database is the National Health Service of Ukraine, unless otherwise provided by law.

In public utilities of Poltava, information systems have been implemented since the beginning of the existence of public utilities in the form of separate software packages - hospital letters, registry, statistical accounting.

In 2007, the hospital began implementing a medical information system - «Chestnut». The introduction of an information system, firstly, gives the doctor more information about the patient, and secondly, there is less time for patients to see a doctor.

With the help of this system in electronic mode is carried out:

- formation of an outpatient card of the patient;
- prescription medication card;
- appointment with doctors;
- work schedule of the doctor's office;
- letter of incapacity for work;
- the passage of patients by specialists is monitored;
- in the automatic mode distribution of patients on sites;
- statistical reporting is created;
- extract of prescription forms.

The existing corporate computer medical network provides automation of the process of organizing medical care for city residents.

The branches of public utilities of the city of Poltava were merged into a single network using unshielded twisted pair of the 5th category (UTP cat5). A database server was purchased and installed. The register of all population of the city is created. Since 2010 [4, 6], all hospital buildings have been integrated into a single network using fiber optic cable.

At present, three medical institutions of Poltava are united into a single network of medical information system. At least five kilometers of unshielded twisted pair have been

laid in public buildings. Equipped with more than 200 automated doctor's workstations. The connection between the buildings of medical institutions is provided by two cable internet operators using «vlan» technology.

The public utilities of Poltava are equipped with servers, which have: database server, terminal server, Internet gateway, file server, internal web-server. In 2019, a powerful server was purchased at the expense of the city council, to which the database was transferred. The hospital plans to use the old database server as a PACS server. Currently, the institution has ordered a network modernization project and plans to move from unmanaged network equipment to managed third-level.

CONCLUSIONS

Health care informatization today is an integral, perhaps the main, component of any health care reform in today's world.

Creating a single information space has many advantages [2, 6]. Such advantages include:

- introduction of electronic document management and public key system;
- two-level protection against loss or destruction of information and ensuring the autonomy of all users at all levels;
- wide opportunities for data exchange between regions in real time, as well as data storage with virtually no restrictions on the volume and duration;
- no costs for the purchase of application software for health care facilities due to the use of cloud technologies with the ability to update simultaneously throughout the system;
- no costs for permanent maintenance of technical specialists (system administrators, programmers), which are not provided for in the staff list;
- low cost of deployment across the country and regions;
- implementation in the shortest possible time (up to five years);
- the ability to maintain any registers in the health care system while maintaining their relevance in real time;
- the possibility of immediate access to the patient's medical data, regardless of the place of registration and the place of seeking medical care;
- wide opportunities for population and scientific research in the field of medicine, through the received information;
- comfortable access of doctors to medical knowledge bases formed on the basis of the use of the proposed system.

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The Authors declare no conflict of interest.

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