

Continuous integration and delivery

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Abstract

Modern medical organizations produce and accumulate huge amounts of data. The quality of medical care, the general standard of living of the people, the level of development of the country as a whole and each of its territorial subjects in particular depend on how effectively this information is used by doctors, managers and governing bodies. Therefore, the need to use large, and still constantly growing volumes of information in solving diagnostic, therapeutic, statistical, managerial and other tasks, determines today the creation of information systems in medical institutions.

Keywords: Medods, medix, medmis, automation, medical information systems, implementation

1 Introduction

Leading medical organizations are actively introducing decision support systems that, using methods of intelligent data processing, help specialists in the tasks of making diagnoses, prescribing a course of treatment, and predicting the development of diseases. Information from the systems for maintaining electronic case histories that accumulate large amounts of heterogeneous information generated by a medical organization: indicators of patient health, examination results, data on medical procedures, etc., comes to the input of decision support systems. Moreover, in one organization there may be several medical systems at once, the data in which are stored in different formats that correspond to different standards. Usual, each system, is designed to solve a narrow range of problems, for example, to treat a specific disease or conduct a specific diagnosis [1].

For a more efficient way to develop and use medical systems, an ERP system has been developed. According to the classification adopted in the European Union, the ERP system for medicine consists of 3 types of components:

- medical information system that performs the functions of administering patient flows, billing, electronic medical record;
- auxiliary information systems, such as a hospital pharmacy, diet food, clinical laboratory, systems for archiving and transmission of images (PACS), systems for accumulating data from bedside equipment;
- financial and economic system (accounting, salary and personnel).

All 3 components of the ERP system are data sources for calculating the cost of medical care. ERP systems use a process approach to the automation of medical organizations.

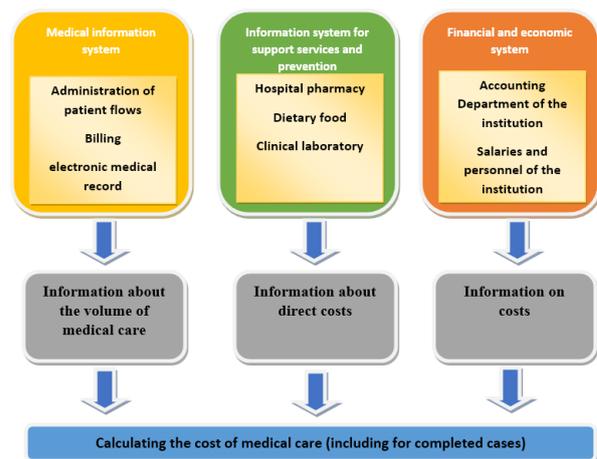


Figure 1 process approach to automation of medical organizations

The main advantages of the ERP system:

- process approach to automation of medical organizations;
- coordination of finances, resources (material, labour) and the quality of medical care for their coordinated management;
- monitoring the cost of medical care and costing [2].

2 Overview

This graduate work discusses the positive and negative points on the following topics:

- the old approach to the development of software for medical information systems with insufficient functional capabilities and limited security of both the privacy of the patient and medical services in general.
- commercial instruments of medical institutions
- the options for introducing modern information

systems relevant both for the present and for the foreseeable future are being considered.

3 Decision

As an example of real projects, such already-existing medical systems will be reviewed:

- Medods;
- Medix;
- Medmis.

In all proposed platforms, there is real experience of use in many medical centers of different countries. Each software solution is based on the needs of medical staff and facility management.

Projects have a minimalistic and intuitive interface that allows you to master management in the shortest possible time. The systems are divided into logical modules that are interconnected, which opens up the possibility of protecting information and controlling the data stream as a whole.

The main disadvantage of using the proposed tools is their location in cloud storage, which can lead to the leak of

personal data of patients and the loss of information of the medical institution as a whole, however, the platforms have a technical solution for their location on an internal server, that allows you to store data exclusively within the walls of medical centers.

4 Conclusion

Information technology can be successfully applied in various fields of modern medicine. For example, in the field of patient safety, modern automated systems can strengthen the quality and safety control of medicines and medical services, reduce the chances of medical errors, provide ambulances with prompt communications and access to vital patient information. Modern technological solutions are a way to provide free access to health services regardless of the patient's place of residence, significantly increase the availability of high-tech medical services, medical expertise. All the factors listed in the work prove the need to transfer medical institutions to modern medical information systems.

References

- [1] *Health informatics* https://en.wikipedia.org/wiki/Health_informatics
[2] *Medical information systems (MIS) – market russia*
http://zdrav.expert/index.php/Статья:Медицинские_информационн

- ые_системы_(МИС)_рынок_России
[3] *MedixCRM is Safe and effective clinic management system*
<https://medix.pro/cases/>