AUTOMATED THE MEDICAL DATA: MOBILE INFORMATION SYSTEM

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Abstract— In the article are given the modern medical institutions produce and accumulate huge amounts of data. The quality of medical care, the general standard of living of the population, the level of development of the country as a whole depend on how competently and effectively these data are used by medical professionals. The purpose of the article is to study the features of the process of creating an information system, creating a software module, as well as their implementation in a medical and preventive institution.

Keywords— medical institutions, produce and accumulate huge amounts of data, creating an information system, practical application.

At the moment, medical organizations need "automation of production", i.e. automation of certain processes related to the vital activity of a particular organization or organizations as a whole (also the relationship between two or more organizations). The concept of "automation" includes such aspects of the daily life of the hospital as:
1. Automation of hospital data accounting;
2. Automation of the accounting of hospital vouchers;
3. Automation of accounting for outpatient patient coupons (TAP);
4. Automation and timely amendments to statistical data on the total number of patients, on the number of patients with a certain degree of disability, etc.;
5. Automation "patient-doctor" - recognition and correction of the diagnosis at the earliest stage, when the patient only turns to the doctor for help.

So, here are five points that the program-project we are creating should solve. A hospital institution, in principle, is a place where any information plays a very important role, where schedules at the doors of receiving doctors change every day, where new lists of patients and, most importantly, diseases appear every day (this process, unfortunately, does not stand still).

It becomes obvious that the health of absolutely every citizen will depend on the effectiveness of the introduction of medical information technologies in medicine.

The business process (BP) is a logically completed chain of interrelated and repetitive activities, as a result of which the resources of an enterprise are used to process an object (physically or virtually) in order to achieve certain measurable results or create products to satisfy internal or external consumers.

Composition of business process diagrams:
1. BP "Medical worker. Authorization" (Diagram 1.)
2. BP "Therapist. Initial admission of the patient" (Diagram 2).
3. BP "Therapist. Secondary reception" (Diagram 3).
4. BP "Medical worker. Patient reception" Diagram 4).
5. BP "Data entry into the database" (Diagram 5).
6. BP "Request to the database" (Diagram 6).
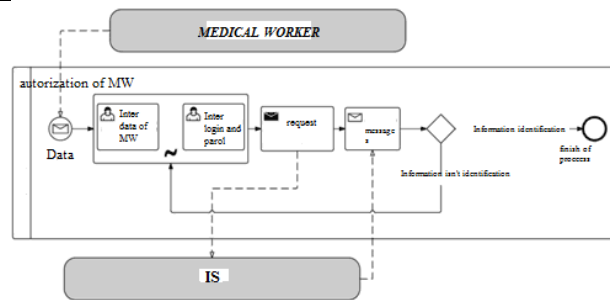7. BP "Request to the patient" (Diagram 7).

Diagram 1. Medical worker. Authorization

This diagram shows the business process of authorization of a medical worker (including a therapist) in the software part of the module being developed.

The first step in the authorization process is to enter the username and password of the user, which every medical employee of a medical institution has. After entering the login and password, a request is sent to the EU to verify the correctness of the employee's data, after which there are two ways to develop the business process, namely:

1. The data of the medical worker is confirmed;
2. The data of the medical worker is not confirmed;

If the entered information turned out to be correct, then this process is completed, and the employee can continue working with the program. If the entered information turned out to be incorrect, then it returns the health worker at the login and password entry stage, where he must try to enter the authorization data again.

Initial admission of the patient by a general practitioner;
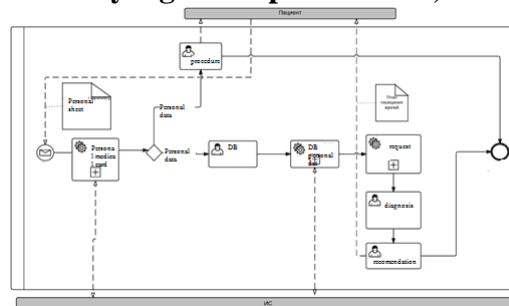

Diagram 2. General practitioner. Initial patient admission

This diagram shows the business process of the initial admission of a patient by a therapist using the module "Medical examination".

The first stage in the process of receiving a patient is the receipt by the therapist of information that the patient can undergo a medical examination. After that, there is a request to the database to verify the correctness of the information reported by the patient, after which there are two ways to develop the business process:

1. The patient can undergo medical examination;
2. The patient cannot undergo medical examination;

If it turns out that the patient cannot undergo a medical examination, the therapist sends him to the registry. If he can undergo a medical examination, then the therapist proceeds to interview the patient. After entering the questionnaire data, the therapist sends a request to the database to receive a plan for visiting doctors by the patient, then prints it out and passes it to the patient. This is the end of the initial reception.

4. Secondary admission of the patient by a general practitioner;
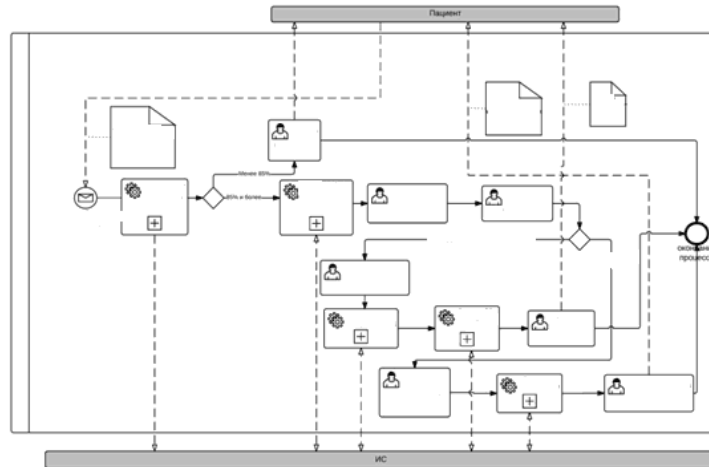
Diagram 3. General practitioner. Secondary reception.

This business process model shows the secondary admission of a patient by a therapist. The first stage in the presented business process model is to inform the patient that he has passed all the necessary doctors. Using the information system, the therapist receives information from the database about the percentage of completion of medical examination by the patient.