

## THE IMPROVEMENT OF THE MEDICAL SERVICES THROUGH IMPLEMENTATION OF A MULTIFUNCTIONAL PLATFORM PROMED

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THE IMPROVEMENT OF THE MEDICAL SERVICES THROUGH IMPLEMENTATION OF A MULTIFUNCTIONAL PLATFORM PROMED (**Abstract**): The paper describes the implementation of a multifunctional platform - PROMED - for diagnosis and medical decision optimization to improve quality and efficiency of healthcare services. The information platform will be used to manage medical activities, electronic medical records and will enable collaboration among all stakeholders involved in health care: patients which will participate actively in information process about their health; healthcare providers can access information about their patients; public health authorities will have access to public information and will be enabled to provide prevention plan and early warning about epidemic diseases. The multifunctional platform will use modern information technologies for increasing quality and efficiency of healthcare in the new information society.

**Keywords:** healthcare, patient, health information, software for health care, virtual support, medical image management

### INTRODUCTION

Today's national healthcare system is very expensive, slow and inefficient. There are many problems occurring in the classical healthcare ranging from paper format health records to diagnosis, referrals and prescriptions, treatment. The patient medical data are not kept up-to-date in one repository and are not accessible to healthcare professionals.

Using the information platform will have the following benefits: transparent access to medical patient data, processing of electronic healthcare records which contain all relevant medical data, active participation of patients in health care processes, continuous training of healthcare professionals through access of information, enabling public health authorities to access public information that operate under requirement of confidentiality which will enhance the capacity of disease prevention at regional and national level. The using of informational platform at national level will eliminate the cross-borders for citizens and will provide access equally to care for all citizens independent of point of care using communication networks and information tools.

The Information Society through new technologies and services offers new possibilities for increasing quality of health care and reducing medical errors. It improves care services for

patients and provides new support for the healthcare professionals. In the information society context, the e-health definition refers to using of modern information and communication technology to meet needs of citizens, patients, healthcare professionals, healthcare providers. Trust is a fundamental concept in e-health. To receive the care they need, patients must share private information and be willing to take medications, use medical devices, or accept interventions that intrude on their bodies. They rely on healthcare providers to keep their personal information confidential, to provide accurate and information about their conditions and possible treatments, and to recommend the appropriate therapy.

The mission of e-health is to provide improvement in quality, safety and efficiency of healthcare through information and information technology. The amount and complexity of health related information and knowledge has increased so much that the information processing has become an important part of healthcare systems. It is obvious that healthcare is an intensive information sector depending on information technology and communication.

#### **MATERIAL AND METHODS:**

The purpose of the PROMED project is to implement a multifunctional platform that will be capable to manage all medical and administrative patient data and will provide early diagnosis, hospital stationary reduction, easy access to information.

The main objective is to use modern information technologies for increasing quality and efficiency of healthcare in the new information society.

The information platform will be designed using low-cost information technologies and advanced communication infrastructure to providing rapid access to medical information independent at the point of necessity.

The PROMED - Multifunctional Platform proposes to integrate the entities involved in the care process of patients for a profitable influence to the health system.

The main directions for improving quality, access and efficiency of healthcare are:

- development of an intelligent environment that enables citizens to manage their health status through access to guaranteed medical information
- participation of the patients with responsibility in process of care and treatment of specific diseases, providing access of healthcare professionals to relevant information and providing tools to reorganisation of healthcare systems.

The Internet will become the effective strategy to provide on-line medical services. Any person, anywhere, using a simple Web browser can have access to quality of healthcare. The e-health tools and applications can provide fast and easy access to electronic health records where is necessary.

Having access to complet and secure electronic health records will facilitate appropriate treatment of patients in providing health professionals with a better knowledge of the patient's history and of previous interventions by other colleagues.

In the process of providing healthcare services a key position to provide the patient care is represented by the *patient medical record*.

The medical record includes an ensemble systematizing of the patient medical historical and also information referring to the care of the patient. The medical records are personalized documents of the patients and are submitted to the ethics principles and the available laws relating to the access to personal information and to other entity involve in the population healthcare development to carry out

The registered information in medical records assures the support in the carry on medical act and to walk step by step the patient. Also the medical records are in the medical care basis planning, communication of the medical opinions between healthcare professionals to solve hard case and for services documentation destined to the patients.

The medical records can be used in the training process of the students and healthcare professionals with preserving the data confidentiality.

In present each patient is able to have some medical records (different medical record in different healthcare institutions: hospitals, family physician, dispensary) dividing some information or comprising unique information (fig. 1).

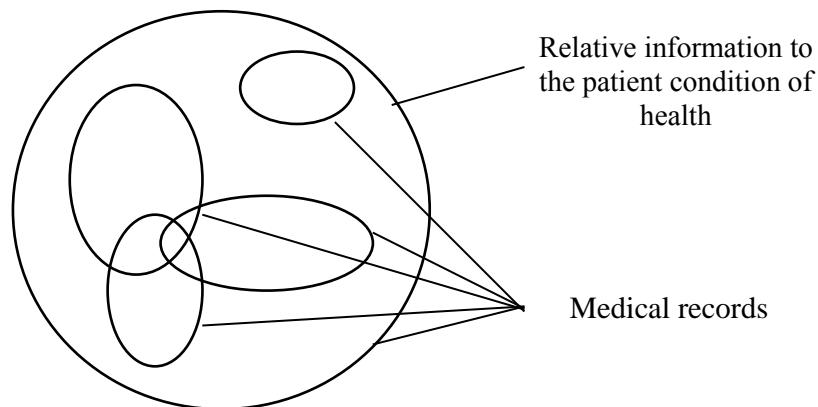


Figure 1.

#### **The patient medical record purpose:**

The patient medical record purpose is to preserve faithfully the record information. The principal purpose of using the patient medical record is the patient care.

The patient medical record may be considered by many view points:

- by the view point of the patient rights to the medical services, confidentiality, autonomy, and legal protection;
- by the view point of the activity and security medicine specialists employed;

This entails that a record health or a health administration data system is necessary to support various purpose as:

- *Orientate purposes about patient*
  - to do easy the access of information to and about patient;
  - to protect the patient rights relating to clinical and personal information;
- *Professional purposes*
  - to improve the capacity to make a diagnostic;
  - to allow the authentication of the information entering by an authorized signature;
- *Ethical Purposes*
  - to be use exigencies of the ethic context and to provide data adequate for this purpose;
- *Management Purposes*
  - to provide data for management to different levels of health system;
- *Research and statistically purposes*
  - to provide information referring the being taken ill;

- to provide a means for the information gathering about illness and specific programs;
- to aid to the healthcare technologies optimization;
- *Education Purposes*
  - to provide data for training;
- *Financial Purposes for thirds*
  - to answer to the needs of the local authorities and governmental organizations which pay for the healthcare ;
  - to answer to the audit needs of the healthcare system to any level .

The Information Society through new technologies and services offers new possibilities for increasing quality of health care and reducing medical errors. In the some time in the medical field has adopted a new concept to draw up the medical records namely the *Patient electronic medical record FEP* which represents a medical informatics source for each individual patient and which can be generating, to bring up to date, to modify by electronic means.

FEP is a useful instrument in the healthcare professionals for the access to all information recorded irrespective of asking place and moment.

FEP automats the medical data circulation of the patients in informatics systems and so ensure the tide to all clinical information and decrease the delay in information processing and development of medical activities.

FEP has becomes a generic term. There are more levels of development of the electronic medical record. Some levels have a succession of general and individual feature with which they made the separation between them.

### **PROMED -Patient Electronic Record**

Starting with the existing models which are in use in the healthcare processes there were establish the follows sections which must be parts of patient electronic medical record structure. This record will be used in Multifunctional Platform.

#### **Identification data of the patient**

- Name and surname;
- CNP;
- Address;
- Phone , mobile phone;
- Profession and job;
- If is a insured person.

#### **Medical historical of the patient**

- Medical historical of the family
- Social historic
- Habits
- Immunizing Historical
- Allergies
- Surgery Historical
- Obstetrics historical
- Medical treatment

#### **Medical Consultations**

- List of presenting to the physician for simple consultations in policlinic or consultations for hospitalizing

It can register the follows:

- Symptoms
- Physic examination (body temperature , pulse, blood pressure, respiration) as well as the

- investigation of various intern organs especially those which requires medical attention
- Diagnosis –this section includes the list of diagnosis (principals ,secondary) establish by the physician after the investigation performed
  - Treatment –include the list of recommended medicaments (name, quantity, duration etc) in pursuance of diagnosis establishment

In addition for the hospitalized patients is necessary the recording of supplementary date as: Progress Note - this section is completed in every day or in the moment when appears a modification in the health of the hospitalized patient and contains clinical changes, new information. These notes must be completed chronologically and must to point up the patient health.

- **Laboratory Analyses-** this section includes the list of all analyses which were effected (blood, urine ,secretions) with the emphasizing of the resulting values in the normal limits
- **Other medical information** - Many other information may be register in patient medical record as :digital image, monitoring EKG , EEG , outlets of medical equipment, chemotherapy protocols etc
- **Recommendations** –include instructions given by the physician who pursues the patient and the other members of the team who examine the patient health

## CONCLUSIONS

The platform will be used to manage the medical services involved in the diagnosis and decision process and manage the medical files. It will allow the interaction between the three main components in the health system:

- the patients, how will actively fallow their own medical state;
- the people that are offering medical services, how can access the patients medical records;
- the public authorities that can built real time reports regarding the health status of the population and can develop action plans to prevent and inform the citizens if an epidemic is developing.

The PROMED platform represents the internet access point for the on-line system of medical services, assuring services like: access control, audit, management, rapport creation.

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