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Divinum opus sedare dolorem!

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New web platform for telemedical services in border regions

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РЕЗЮМЕ, ABSTRACT

The paper presents project of a network for provision of continuity of care with telemedical and telehealth services between 2 border countries which is based on web services and 3rd/4th generation GSM services; processing medical records of both countries citizens, allow patients themselves to utilize for this purpose electronic devices that can do the task automatically; permit treating physician to continuously monitor his patient's progress from a distance; permit the diffusion and dissemination of health related information; use smart card technology to fortify the security of data contained in the patients' records and provide tele-education for the medical and paramedical personnel (Ukr.z.telemed.med.telemat.-2010.-Vol.8,№2.-P.164-166).

Key words: mobile telemedicine, patient, electronic health records

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НОВА ВЕБ- ПЛАТФОРМА ДЛЯ ТЕЛЕМЕДИЧНИХ ПОСЛУГ У СУМІЖНИХ КРАЇНАХ

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У статті представлений проект мережі для забезпечення етапності медичної допомоги у двох суміжних країнах з використанням телемедичних систем на основі веб-сервісів і GSM-послуг 3-4-го покоління. Система дозволяє виконувати обробку медичної інформації громадянами обох країн, забезпечує телемоніторування стану пацієнта лікарем на амбулаторному етапі, сприяє поширенню знань про здоров'я. Застосування смарт-карт забезпечує безпеку даних про пацієнтів, а також дозволяє використовувати ці дані для навчання медичного й парамедичного персоналу (Укр.журнал телемедицини й мед.телематики.-2010.-Т.8,№2.-С.164-166).

Ключові слова: мобільна телемедицина, пацієнт, електронні медичні записи

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НОВАЯ ВЕБ-ПЛАТФОРМА ДЛЯ ТЕЛЕМЕДИЦИНСКИХ УСЛУГ В ГРАНИЧАЩИХ СТРАНАХ

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В статье представлен проект сети для обеспечения этапности медицинской помощи в двух граничащих странах с использованием телемедицинских систем на основе веб-сервисов и GSM-услуг 3-4-го поколения. Система позволяет выполнять обработку медицинской информации гражданами обеих стран, обеспечивает телемониторирование состояния пациента лечащим врачом на амбулаторном этапе, способствует распространению знаний о здоровье. Применение смарт-карт обеспечивает безопасность данных о пациентах, а также позволяет использовать эти данные для обучения медицинского и парамедицинского персонала (Укр.журнал телемедицины и мед.телематики.-2010.-Т.8,№2.-С.164-166).

Ключевые слова: мобильная телемедицина, пациент, электронные медицинские записи

Mobile and e-Health applications ensure collection of health and clinical data, delivering health information and real-time monioring of vital signs, and direct provision of information in different stages of its acquisition and processing. Mobile phones or personal digital assistants (PDA) with wireless networking capabilities, can serve as inputs to the processes of storage and transfer of recorded and measured parameters to clinicians, selected by their subsequent applications.

Thei new kind of service doesn't require any additional equipment but mobile phones that sends and receives short text messages. Patients can initiate telephone calls related to health information and education, study thera-

peutic schemes for meetings and consultations, transport to health experts, even just for support and courage.

Success of this telemedical approach critically depends on providing easy and affordable access to patients' health records [1]. In this respect Internet together with 3rd or 4th generation GSM services enable telemedical and telehealth solutions that are both far-reaching and affordable [2]. It is now possible to implement a web-platform which allows affordable access to medical services, containing records of the citizens using services, safely and easily accessible by their physician.

"Continuity of Care" is a main prerequisite for the freedom and movement of people across borders within the EU. However, it is seriously compromised especially in the less developed regions of the EU. The web-platform is planned to accomodate medical multimedia content and perform both telehealth monitoring and tele-education regarding public health concerns. It would handle medical records of citizens of both countries, allowing patients themselves or those responsible for their care, to enter data or to utilize for this purpose electronic devices that can do this task automatically (e.g., glucose measuring devices, portable ECG machines, spirometry devices etc).

This solution permita treating physician to continuously monitor their own patient's progress from a distance and least but not last - provide tele-education for the medical and paramedical personnel.

It is planned to serve at least 15000 persons, among them workers, tourists, businessmen, soccer clubs and their accompanying personnel and fans and, finally, elderly citizens.

Figure 1. Doctors` view of patients entrance form

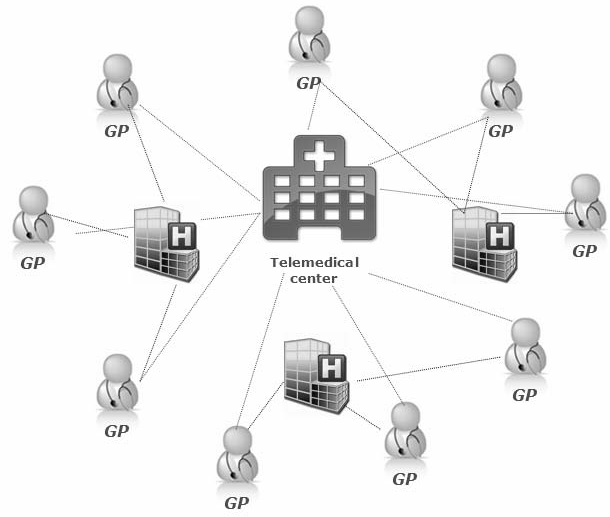

Figure 2. Concept of Telemedical center in connection with GPs

The web platform can be loaded both on iPhone and web site according to the requets and necessity of the doctor. The model is created purposefully with simplified design, because it should allow fast and smooth loading at the mobile phone. The Patient profile consists of detailed information about Medical history, status and paraclinical data. The doctors` view is enriched with the following data – Patients number, Initials, Sex, Age, Day, Month, Year, Hour and Minute. By selecting a record and clicking the button “Show Data”, the Doctor can review selected patients’ details.

Specialists are entered preliminary in the database, but the patient acquires automatically generated new username and password for each new record. The reason for this is that according to the Bulgarian law, the system cannot store patients data, except the initials, age and sex, which are not unique data. Using these generated pass and username patients can access the records from any point with Internet through any device – PC, iPhone, PDA. Our basic concept is to combine and connect each GP in a concrete region by providing telemedical desktop solution – another realized and implemented authors project [2-3] and presented here mHealth software, in order to achieve complete valuable patient service.

Some of the strategic objectives are: improvement of the access to emergency and general health services, improvement of the efficiency of health service delivery, improvement of the clinical practice for enhanced health outcomes

Conclusion

Presented here project is an extension of authors development of Telemedical Information System, which combines telemedical functions with modern technologies – PDAs, mobile phones. Formal Internet interventions exist in a broad context of diverse online health resources and services, which share elements in common like information, advice and peer support. However, most online health resources are not created by healthcare professionals. Internet interventions need to be designed to “compete” in that wider context. The democratization of production and distribution is central to the transformative effect of the Internet on society, yet potentially conflicts with healthcare’s need for an evidence base and safe practice. This is a core challenge for our project successful realization.

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