Chapter 29
SIe–Health, e–Health Information System

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ABSTRACT

In recent years, the incessant development of new communication technologies has provided a better way for accessing information and also a lot of useful opportunities. The implementation of these new technologies gives us an ideal environment for transmitting and receiving real-time information from anywhere. One of the sectors that have a great potential to use and exploit this kind of technologies is the healthcare sector. Nowadays, the application of all these new technologies to support the clinical procedures has taken part in the definition of a new concept known as e-Health. This concept involves a lot of different services related with the medicine/health terms and the information technologies. However, to provide emergency transportation with better care capabilities to the patient is something that still has a lot to improve. Within this context SIe-Health comes into being a software platform oriented for developing Telemedicine solutions. The solution model proposed here allows remote assistance for a mobile health emergency (for example, an ambulance), integrating in this service electro-medical devices and videoconference services.

INTRODUCTION

The peak of communication between mobile devices and the potential that they have for their integration in a distributed software platform, makes possible the development of new solutions, more dynamic than before, and also more useful in this information society. The implementation of these new systems in every sector of our society, especially in public utilities, could be viewed as a revolution in the way the users can use the different services. This statement is easily verifiable, just consider the increase in the number of simple actions (recharge a phone card, control of television programming, news, real-time access, or shopping, ...) that are fully integrated into modern distributed software systems which have been widely adopted by the vast majority of users, giving them the impression that are able to do anything anywhere. One of the sectors with greater potential to use and exploit these technologies is the health sector. Healthcare involves a large number of different services whose integration into the modern devices offered by new communication technologies is highly dependent on context. The care for dependents through services such as tele care and remote assistance, centralized control of the patient in hospitals, or the current telemedicine systems used by the Army, which are being implemented for civilian use, are just the beginning. Specifically, the implementation of these new technologies to support clinical practice has given birth to a new concept known as e-Health. This term includes a wide range of different services related to medicine / health terms and information technology:

- **Electronic Medical Records (EMR):** allow easy communication of patient data between different healthcare professionals (GPs, specialists, care team, pharmacy). Unfortunately as stated in Marion (2006) "fewer than 10 percent of the state's physi-

cians and 25 percent of its hospitals have functioning EMRs" (p. 78).

- **Personal and Electronic Health Records (PHR and EHR):** Considering the information appearing in Connecting for Health (2006), the Markle Foundation defines the PHR as "an electronic application through which individuals can access, manage and share, their health information in a secure and confidential environment. It allows people to access and coordinate their life-long health information and make appropriate parts of it available to those who need it". Thus, it differs from the EHR, which is "an electronic version of the patient medical record kept by physicians and hospitals". The data in the EHR are controlled by and intended for use by medical providers.

- **Telemedicine:** Using the definition appearing in the Wikipedia. "Telemedicine is a rapidly developing application of clinical medicine where medical information is transferred through the phone or the Internet and sometimes other networks for the purpose of consulting, and sometimes remote medical procedures or examinations". **Telemedicine** generally refers to the use of communications and information technologies for the delivery of clinical care. It could include all types of physical and psychological measurements that do not require a patient going to a specialist. When this service works, patients need to travel less to see a specialist or conversely the specialist has a larger attention range.

- **Evidence Based Medicine:** Using again the Wikipedia: "Evidence-based medicine (EBM) aims to apply the best available evidence gained from the scientific method to medical decision making. It seeks to assess the quality of evidence of the risks and benefits of treatments (including lack of treatment)". Moreover, EBM involves a

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