INNOVATIVE TECHNOLOGIES IN THE MANAGEMENT OF ELECTRONIC MEDICAL RECORDS: e-Pulse

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Introduction

The goal of the e-pulse system is, **"to enable the patient's access to the system 24/7 wherever the patient is receiving care in order to obtain information about his/her own medical condition."** This system is a patient health data management system that integrates with hospitals of the Ministry of Health, as well as with family doctors, university hospitals and private health institutions.

A New e-Health System: e-Pulse

e-pulse is a personal data management system that makes it possible for healthcare professionals authorized by the Ministry of Health, to easily, reliably and effectively access personal medical data.

e-pulse is the world's broadest and most comprehensive medical informatics infrastructure and encompasses an entire system whereby regardless of where medical examinations, lab studies and treatment are conducted, individuals can manage the medical data produced about themselves, access their medical history from a single source and share this data with whomever they wish.

Figure 1. Health Information Data Structure (Resource: Sema Bağcı, "Kişisel Sağlık Kaydı Sistemi: e-nabız: Kişisel Sağlık Sistemi". TC Sağlık Bakanlığı Sağlık Bilgi Sistemleri Genel Müdürlüğü. http://slideplayer.biz.tr/slide/4870064/, 02 May 2016).

Legal Structure: Data Safety

This system offers data protection to individuals under the following laws :

- Law No.6669 dated Jan. 30, 2016 on "The Approval of Personal Protection Agreements regarding the Automatic Processing of Personal Data"
- Law No. 6705 dated April 20, 2016 on "The Approval of the Protocol on Supervisory Authorities and Cross-border Data Flow Supplementary to Personal Protection Agreements regarding the Automatic Processing of Personal Data."

The Ministry of Health issued an e-Pulse Circular 2016/6 on the "Law on the Protection of Personal Data. This law authorizes the Ministry of Health in the processes, protection and applications related to personal medical data (http://www.saglik.gov.tr/TR/dosya/1-103259/h/genelge20166.pdf, April 27, 2016).

Figure 2. Web Features.

e-Pulse System of Features

The system provides individuals access to many data, including information on hospital visits, lab and imaging, repeat testing, appointment histories, reports and previous illnesses. Individuals may see the details of their hospital visits, share, evaluate or delete these if desired. Users may also, if they want, freeze their profiles temporarily or close their accounts altogether. Some examples of the services provided by the e-Pulse system are the following:

* Lab tests
* Imaging
* Signing up for appointments
* Prescription details
* Organ donations
* My Allergies
* My Reports
* 112 Emergency and First Aid

Figure 3. Mobile Access.

Mobil Access and Wearable Technology

Users on IOS or Android operating systems can connect to the e-Pulse system on all their devices. By doing so, they will be able to learn the details of their examination at whichever hospital they go to, find prescription and medication information, obtain the reports of lab work and medical imaging at any facility, accessing all of this information together. Users may also integrate the step counter, pulse bracelets they use, their blood pressure devices and glucometers operating via Bluetooth into their e-Pulse profiles via all GSM operators, keeping all of their medical information saved at a single source. By logging into My Hospital Visits and selecting the appropriate health facility, they can click on "See Details" and view all the processes of their examination, prescriptions, reports, lab studies and diagnoses.

Figure 6. Wearable Technology Health Personal Tracking System (Resource: Sema Bağcı, "Kişisel Sağlık Kaydı Sistemi: e-nabız: Kişisel Sağlık Sistemi". TC Sağlık Bakanlığı Sağlık Bilgi Sistemleri Genel Müdürlüğü. http://slideplayer.biz.tr/slide/4870064/, 02 May 2016).
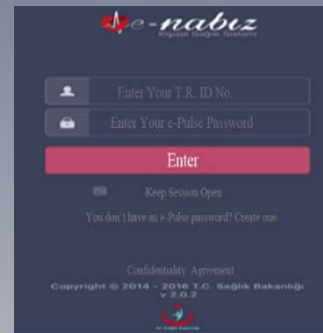

Figure 4. Mobile Interface.

Conclusion

In terms of Turkey's development, e-Pulse is an innovative technology that offers our population of 75 million the opportunity of electronic access to personal health data. The intensive efforts in the first 5 months of 2016 to establish a legal framework for the system resulted in achieving the legal protection of personal data and the integration with all related systems. Providing accessibility, applicability and user-friendliness in visual resolution, the interface facilitates use in both internet and mobile environments. Although integration with wearable technology has not as yet been completed, efforts are underway to provide this facility as well.

Figure 5. Radiological Image on Mobile Device.

References

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