

Electronic Patient Record – review of useful information a patient can provide

Degree programme: MAS Medical Informatics

This Master Thesis focus on the information a patient can submit into his Electronic Patient Record in order to be better treated. As results, we have: a) a list of information (data and services) whose pertinence is evaluated by professionals; b) a list of measurements that can be collected by the patient himself with devices and how they can be recovered from online measurements stores; c) a proof of concept on how these values can be transformed into HL7 CDA documents.

Introduction

The Electronic Patient Record (EPR) is an online platform where professionals, institutions and patients exchange medical data. The introduction of the EPR in Switzerland is framed by a law, federal ordinances¹ (which started 15 April 2017) and guidelines. The material provided focus mainly on the technical sides and data protection. Little work has been done on the content, especially on the patient side. The goal of this work was to concentrate on the information a patient can submit into his EPR in order to improve his care delivery.

Methods

The work was divided in 3 separated phases. At first, a review of existing documents, measured values and services used in existing international projects was done.

Based on the resulting list, a survey was conducted with a panel of doctors already using an EPR (Project Infomed² in Canton Valais) about the pertinence of each element.

Secondly, a review focusing on values measured by patients at home and how they can be stored and retrieved in online measurements stores was done.

Finally, a proof of concept was developed to show how an EPR could extract information from these online stores and convert them into HL7 CDA document.

Results

The review of 18 international projects allowed building a list of 16 potential documents and 5 services that can be provided or used by a patient. Based on this list, the survey shows that 6 documents (allergies, emergency contacts, advance directives, organ/body donation consent, medications and vaccination) were evaluated as useful (> 70%). Few standards have been found to structure these documents, but for each of them hints or references have been given.

The review of 8 measurements stores, which are the main players on the market, allowed building a list of 88 values that can be measured.

Finally, the development of the proof of concept proved that it was possible to recover online values and transform them into a HL7 CDA document using the «eHealth Connector»³ (Swiss open source library).

Discussion

The survey clearly showed an interest of doctors to have access to information generated by patients. However, it must not be too large (too much irrelevant data) to avoid the risks of information overload. There are also concerns about the validity of data generated by non-medically certified devices.

The review of measurements stores and the proof of concept showed that it is easily possible to extract online information and store them in a structured document. Most of the stores have the same values. The major blocking point is the lack of standards on how to structure these particular documents.

References

- ¹ OFSP O. Législation Dossier électronique du patient [Internet]. Bag.admin.ch. 2017 [cited 16 May 2017]. Available from: <https://www.bag.admin.ch/bag/fr/home/service/gesetzgebung/gesetzgebung-mensch-gesundheit/gesetzgebung-elektronisches-patientendossier.html>
- ² Infomed – Portail patient [Internet]. Infomed-vs.ch. 2017 [cited 16 May 2017]. Available from: <https://www.infomed-vs.ch>
- ³ eHealth Connector / Wiki / Home [Internet]. Sourceforge.net. 2017 [cited 16 May 2017]. Available from: <https://sourceforge.net/p/ehealthconnector/wiki/Home/>



Cédric Michelet
cedric.michelet@gmail.com