E-Record – Access to all Danish Public Health Records

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Abstract and Objective

E-Record (in Danish: E-Journal) is at National repository of record information from all public hospitals in Denmark. It has been introduced in 2007 and today it is a backbone for interchanging EHR-information across hospitals. It is not a national EHR, but a read-only repository that supplements the local EHR-information with national information. Both GP's and patients/citizens can access the information due to improved patient empowerment. Almost 50.000 different clinicians at hospitals and almost 300.000 patients/citizens have used E-Record in 2012.E-Record contains information about ICD-10 diagnosis, Pro-cedures, Notes and Discharge letters and cave information.

Keywords: EHR, GP, Patient Empowerment, ICD-10, ICPC, Dissemination.

Introduction

Over the last 10 Years Danish Hospital information systems (i.e. Electronic Healthcare Record systems and Patient Administrative systems) has been prepared to deliver information concerning the treatment of patients to a national repository named E-Record. This repository is accessible to all clinicians in primary and secondary healthcare and it gives a better prerequisite for diagnosis and treatment of patients. The patients can access information from the repository after treatment has finished and – hopefully – get a better understanding of his or her clinical situation.

Methods

In E-Record all information concerning Cave, ICD10-diagnosis, Procedures (Nordic classification NCSP) and Notes are available to all users. And more important: The information is available from all public Hospitals. 3 different types of users can access E-Record: Clinicians at Hospitals, General Practitioners (GP) and patients/citizens. All information in E-Record is stored in a huge DB2-database based repository. All data from EHR-systems registrated at the hospitals during one day is generated during the evening and send during the night to be accessible next day in E-Record. Technically, data is collected from all hospitals through XML-based data pulling. The XML-schema is formed by the E-Record data model, and the transmission is made by the FTP-protocol. Services has been developed to access information in E-Record, and a web-based user-interface presents all information to the end user. External systems can be approved to access the E-Record services with respect to the internal security rules, blocking (by clinicians or Patients) and logs. In the beginning of 2013 E-Record has been extended to contain information from all GP's in Denmark. The information will be: Activities, Lab-results, Medication, ICPC-diagnosis but not notes.

Results

E-Record has been used since 2007 and the use has improved since. The advantages can be stated in these three points.

1. When clinicians can access information from all public hospitals the condition for decision making is optimal and this will improve patient security.

2. Clinicians need to know historical information about the patient before treatment. Before the introduction of E-Record, clinicians ordered paper based information from other hospitals. This information was send by fax and the costs were rather insignificant. Now the clinician look up information from other hospitals in E-Record.

3. In Denmark all patients has the right to look at their own hospital record. Before the introduction of E-Record, a medical secretary created paper based information from the local EHR. Now the patient is asked to look up their own information in E-Record.

Today all hospitals are using E-Record but not at all departments. There is more dissemination of E-Record yet to do. The user interface has been modernized and a new layout was released in 2011 with the introduction of a new timeline of activities in public Danish hospitals – both divided on location and diagnosis.

Discussion

In the last part of 2013 E-Record is planned to be developed further to contain full information about lab-results and medication based on 2 other systems: Common Medication Card and a national laboratory database. Together all these systems can deliver the appropriate information to clinicians who are going to treat patients effectively and professional.

Conclusion

E-Record has been a success in Denmark and it has shown that it is possible to build a read-only web-based presentation of EHR-information across the country from public hospitals. It has been a challenge to disseminate the use of E-Record unless there are both qualitative and cost-efficient reasons to use E-Record especially at hospitals. E-Record has been the first Danish national system that enables patients/citizens to be empowered in terms of being more aware of illness and treatment.

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