

Abstract

Background: The recent advances in information and communication technology have increased the possibility to store and circulate information. EHR¹ systems, as an IT² in the healthcare field, can improve access to patient data. International research studies show that the benefits of e-health are significantly greater where EHR information can be shared and used by all involved in an individual's care. Messaging standards are critical for one system to communicate clinical data to another.

Objective: This study investigated the means of designing object-oriented model for some key messages to support EHR.

Methodology: For the first section of the study, a number of theoretical and conceptual issues concerning EHR in some countries were outlined. An assessment of interoperable EHR messaging standards relies on Grey literature sources. Based on these sources and the major actions taken for the creation of EHR with regards to interoperable EHR messaging standards, initial messages related to the studied documents were designed and translated. For the second section, related specialists were interviewed for approving and correcting the designed messages.

Findings: Results were presented in three sections. First, the conceptual issues concerning EHR in some countries were studied. It was revealed that there are no complete messaging standards to exchange of healthcare information. Second, a comprehensive summary report of every message standards was presented. The report describes weaknesses and strengths of HL7 and openEHR standards. Third, the designed messages were presented based on the findings acquired through the interviews and workshops.

Conclusion: The evaluation of the EHR standards reveals no clear "winner". OpenEHR specifications over the past five years have had a significant influence on the development of EHR standards. Results show that openEHR facilitates the use of routine data for multi-centre clinical research. As the openEHR approach also ensures open, future-oriented Electronic Health Records, and it is highly desirable that multi-centre clinical trials adopt openEHR.

Key words: Interoperability, EHR, Messaging Standards