HealthManagement
Promoting Management and Leadership

Volume 2 / Issue 2 2007 - Features

EHR: A Backgrounder

The Electronic Health Record (EHR) is the centrepiece of efforts by regulators and industry to integrate healthcare IT/ information systems at both the national and international levels. Its overriding purpose is to improve the quality of patient care and reduce healthcare costs. Nevertheless, several barriers remain to be overcome before EHRs are adopted on a large scale. Firstly, there are major technology challenges accompanying the design and deployment of secure, high-quality EHRs. This is emphasised further by the lack of interoperability between legacy healthcare IT systems and the process of continuing – sometimes relentless – technology change. In addition, two crucial human factors need to also be taken into account: the need to ensure that patients trust and accept their EHRs, while healthcare professionals see it as a convenience rather than a hindrance to established workflow patterns.

As noted in the previous article by Dr. Goossen (Reusing Clinical Information in EHR and Message Standards), there are two principal models to design the recording, exchange, management and integration of data for the support of patient care.

These are Europe's CEN 13606 and HL7 messaging standards from the US.

CEN and HL7 have signed a memorandum of understanding to pursue both harmonisation as well as convergence, as far as possible. This is evidently a critical factor for future interoperability of healthcare information systems, given that CEN and HL7 are the two key organisations involved in the forumation of such standards. Many CEN experts participate actively in HL7 developments and vice-versa. Areas of harmonisation include data types, reference models and archetypes.

A brief overview of the efforts of both organisations in the area of EHRs is provided below.

CEN

CEN 13606 – from the European Committee for Standardisation – is titled 'Electronic Health Record Communication'. It was first published in 1999, but saw limited deployment, largely owing to implementation problems associated with its single-level modelling approach. In November 2001, CEN decided to update 13606, based on the openEHR archetype methodology. Towards this, it signed a memorandum of understanding with the London-based openEHR Foundation.

The revised CEN EN13606 is a five-part standard consisting of a Reference Model, Archetype Interchange Specification, Reference Archetypes and Term Lists, Security Features and Exchange Models.

HL7

Health Level Seven (HL7) is the principal US healthcare IT standards organisation, and is accredited to the American National Standards Institute (ANSI). The 'Level Seven' refers to the highest/application level of the ISO (International Organisation for Standardisation) communications model for Open Systems Interconnection.

With an original mandate limited to messaging standards, HL7 has over time become increasingly involved in standardising decision support and terminology.

In late 2001, HL7 decided to set up a SIG (Special Interest Group) on the EHR.

HL7's first EHR standard was a System Functional Model and Specification Draft Standard for Trial Use. Though not an explicit EHR standard, the widely-known HL7 Clinical Document Architecture (CDA) forms an important sub-component of an EHR harmonised with CEN 13606/ openEHR. A second EHR focus of HL7 is the Templates SIG which is working with openEHR and CEN representatives on archetypes and templates.

HL7's latest launch is an EHR System Registry, which provides for submission and listing of EHR System Functional Profiles in conformity with the ANSI-approved EHR-S FM (functional model) standard. At the time of publication of this issue of HITM, it had two registered profiles: the Emergency Department Information Systems Profile and the Legal EHR profile. (TS)

From GEHR to openEHR

It remains little known that the first international EHR initiative originated in Europe.

In the early 1990s, the EU funded the GEHR (Good European Health Record) to develop specifications for a meaningful EHR based on clinical, legal and technical requirements. The GEHR led to a formal object-oriented IT model (as well as 2,000-plus pages of documentation). However, it proved tough to implement, largely for reasons of technology.

Follow-up to GEHR is one of the principal mandates of openEHR (www.openehr.org), a non-profit organisation based in the UK and founded by University College London and Australia's Ocean Informatics. openEHR sees itself as an international, on-line community to promote and facilitate progress towards high-quality EHRs and support needs of patients and clinicians. It has committed to publish the theoretical foundations and evaluations of its work in the public domain and make available relevant source programs and datasets under an OpenSource license.

openEHR, however, does not see itself as a standards organisation. Its members, instead, work through CEN and HL7 to contribute to the development of standards, and feedback such efforts to their own specifications and software. (TS)

Published on : Mon, 31 Dec 2007