

Synchronization of Data Models to Support Continuous Health Care

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Abstract. Contemporary electronic health record (EHR) applications incorporate comprehensive medical knowledge that is being updated very fast. Even EHRs that are built considering best practices vary slightly in their data models (DM) over time. There are various software tools supporting DM synchronizations on the market. Within this paper we describe special requirements that are to be set on these tools to be successfully applicable for synchronization of DMs in healthcare domain. As the available tools do not meet the requirements well we also present a new open source DM synchronization tool Schemagic that is particularly suitable for these synchronizations. Schemagic was developed as a supportive tool within the project Information Technologies for Shared Health Care. Several partners from academy as well as from industry joined for collaboration on this project in order to cooperate on new approaches to support sharing of medical data and knowledge among heterogeneous information systems. The Schemagic synchronization tool has been successfully tested while formalizing the clinical contents of EHRs in dental medicine. A rapid evolution of the underlying DM that started with a few clinical concepts and evolved stepwise into hundreds of attributes and relations has confirmed that Schemagic considerably multiplies the power and scalability of EHR systems and significantly simplifies further research and development.

Keywords: databases, electronic health record, data models synchronization

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