

Interoperable Electronic Health Records Design: Towards a Service-Oriented Architecture

Wullianallur Raghupathi, Fordham University

Someswar Kesh, Central Missouri State University

ABSTRACT

The digital automation of health information has traditionally focused on the formal implementation of electronic health records (EHRs). Most of these EHR systems are relational databases that focus on intra-enterprise applications; very few have become fully functional, scalable, distributed systems with interoperability. This article identifies the design challenges in EHRs and explores the potential of service-oriented architecture in the development of interoperable EHRs. A prototype SOA model for an EHR in a health clinic setting is described. Challenges in the application of the SOA model to health care are discussed. The experience gained from this effort provides valuable insight into how SOA can be developed in health care organizations. The paradigm shift towards an SOA will involve the consideration of “health care services” as the fundamental basis for developing next-generation health care systems.

Keywords: electronic health record (EHR), service-oriented architecture, health care service, interoperability, scalability