

Conference abstract

Semantic interoperability – Role and operationalization of the International Classification of Functioning, Disability and Health (ICF)

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Abstract

Introduction: Globalization and the advances in modern information and communication technologies (ICT) are changing the practice of health care and policy making. In the globalized economies of the 21 century, health systems will have to respond to the need of increasingly mobile citizens, patients and providers. At the same time the increased use of ICT is enabling health systems to systematize, process and integrate multiple data silos from different settings and at various levels. To meet these challenges effectively, the creation of an interoperable, global e-Health information infrastructure is critical. Data interoperability within and across heterogeneous health systems, however, is often hampered by differences in terminological inconsistencies and the lack of a common language, particularly when multiple communities of practice from different countries are involved.

Aim: Discuss the functionality and ontological requirements for ICF in achieving semantic interoperability of e-Health information systems.

Results: Most solution attempts for interoperability to date have only focused on technical exchange of data in common formats. Automated health information exchange and aggregation is a very complex task which depends on many crucial prerequisites. The overall architecture of the health information system has to be defined clearly at macro and micro levels in terms of its building blocks and their characteristics. The taxonomic and conceptual features of the ICF make it an important architectural element in the overall design of e-Health information systems. To use the ICF in a digital environment the classification needs to be formalized and modeled using ontological principles and description logic. Ontological modeling is also required for linking assessment instruments and clinical terminologies (e.g. SNOMED) to the ICF.

Conclusions: To achieve semantic interoperability of e-Health systems a carefully elaborated overall health information system architecture has to be established. As a content standard, the ICF can play a pivotal role for meaningful and automated compilation and exchange of health information across sectors and levels. In order to fulfill this role a ICF ontology needs to be developed.

Keywords

semantic interoperability, health and disability classification, ontology development

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