Interoperability among Prenatal EHRs: A Formal Ontology Approach

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Introduction

Gathering information from EHRs connected to different information systems is a challenge and involves the adoption of interoperability solutions[(1)]. To overcome this interoperability failure among prenatal EHRs our strategy is to develop an ontology in the obstetric and neonatal domain (OntONeo[(2, 3)]). Such ontology will be able to join different standards and terminologies adopted by information systems that deal with prenatal EHRs. OntONeo has the potential to contribute to interoperability of information among EHR from different specialties. In addition, the definitions of OntONeo will facilitate the understanding of how information can be organized in EHRs for purposes of healthcare.

Methodology

We adopted Basic Formal Ontology (BFO) as top-level ontology of OntONeo, the methodology of ontological realism[(4)], and we are also following the Open Biomedical Ontologies (OBO) Foundry[(5)] principles.

Partial results

We built a formal definition to EHRs specialty on OntONeo domain (Figure 1). We identified a set of basic types of information that are common across different EHRs independently of specialty (e.g. demographic data and vitals. Moreover, each medical specialty has specific information about the care provided.

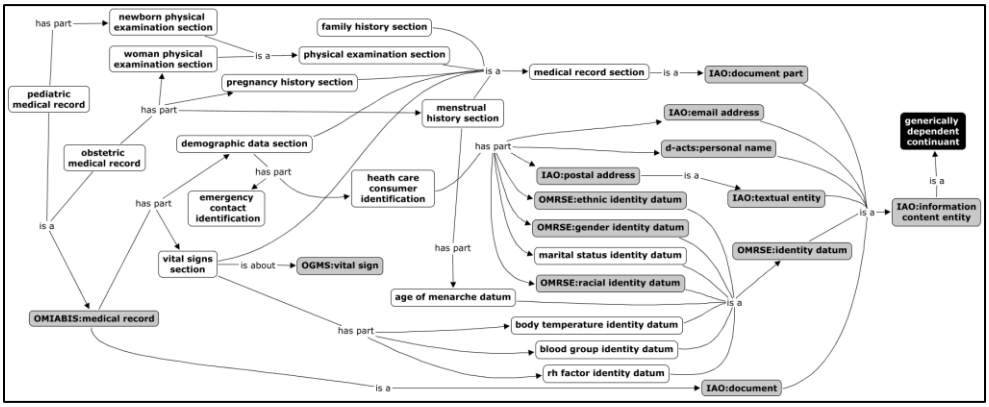

Figure 1. Part of OntONeo that deals with the basic information common in EHRs.

Conclusion

We present how OntONeo ontology represents the EHR data involved in the care of the pregnant woman. This is a development project development in which the current version can be found at *http://ontoneo.wordpress.com*.

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