Design of a Pneumonia Ontology for Diagnosis Decision Support System

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Abstract : Diagnosis error problem is frequent and one of the most important safety problems today. One of the main objectives of our work is to propose an ontological representation that takes into account the diagnostic criteria in order to improve the diagnostic. We choose pneumonia disease since it is one of the frequent diseases affected by diagnosis errors and have harmful effects on patients. To achieve our aim, we use a semi-automated method to integrate diverse knowledge sources that include publically available pneumonia disease guidelines from international repositories, biomedical ontologies and electronic health records. We follow the principles of the Open Biomedical Ontologies (OBO) Foundry. The resulting ontology covers symptoms and signs, all the types of pneumonia, antecedents, pathogens, and diagnostic testing. The first evaluation results show that most of the terms are covered by the ontology. This work is still in progress and represents a first and major step toward a development of a diagnosis decision support system for pneumonia.

Keywords : Clinical decision support system, Diagnostic errors, Ontology, Pneumonia
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