

Risk Assessment Prediction of Hypertension and its Associated Diseases – An Ontology Driven Model

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Abstract

This research paper presents an intelligent system to predict the risk assessment of hypertension in three main related areas like diabetes, cardiovascular problems, and kidney disorders. The system is targeted on patients in Sultanate of Oman. Currently there is no specific system in the domain of hypertension or its associated diseases in the Sultanate. Also currently available medical systems in Oman do not employ an intelligent approach; they are just using database-oriented methodologies. They are not flexible and adaptable to complex requirements and processes and lack intelligence. We propose a system with ontologies as knowledge base (medical knowledge base), patient medical profile to be stored in a semantic way and

an inference mechanism to extract data in the decision making process. Ontology is among the most powerful tools to encode medical knowledge formally. Since the knowledge base is constructed through ontology, it can be easily reused and extended in a variety of different problems. The proposed system which is an interactive decision support system (DSS) is a partial replacement of traditional database oriented system which is not capable of finding out patient risk analysis in an intelligent way.

Keywords

Knowledgebase, clinical decision support system, ontology, semantic web, inference engine

FMECA Analysis of a Home Care service

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Abstract

Failure Mode, Effect and Criticality Analysis (FMECA) is one of the most widely used tool to improve performance of a system. We applied a FMECA methodology to a Home Care service provided by the Service of Biotechnologies in Naples. In order to identify precisely all failure modes, the Home Care is studied like a process and decomposed in three main sub-processes. The FMECA method was then applied to each sub-process

and it resulted in a detailed collection of corrective actions functional to manage all the dangerous activities identified. This collection could be assembled in policy statements documentations, useful to identify the interventions to adequate the room and the whole house and save operational costs.

Keywords

Home care, risk management, FMECA