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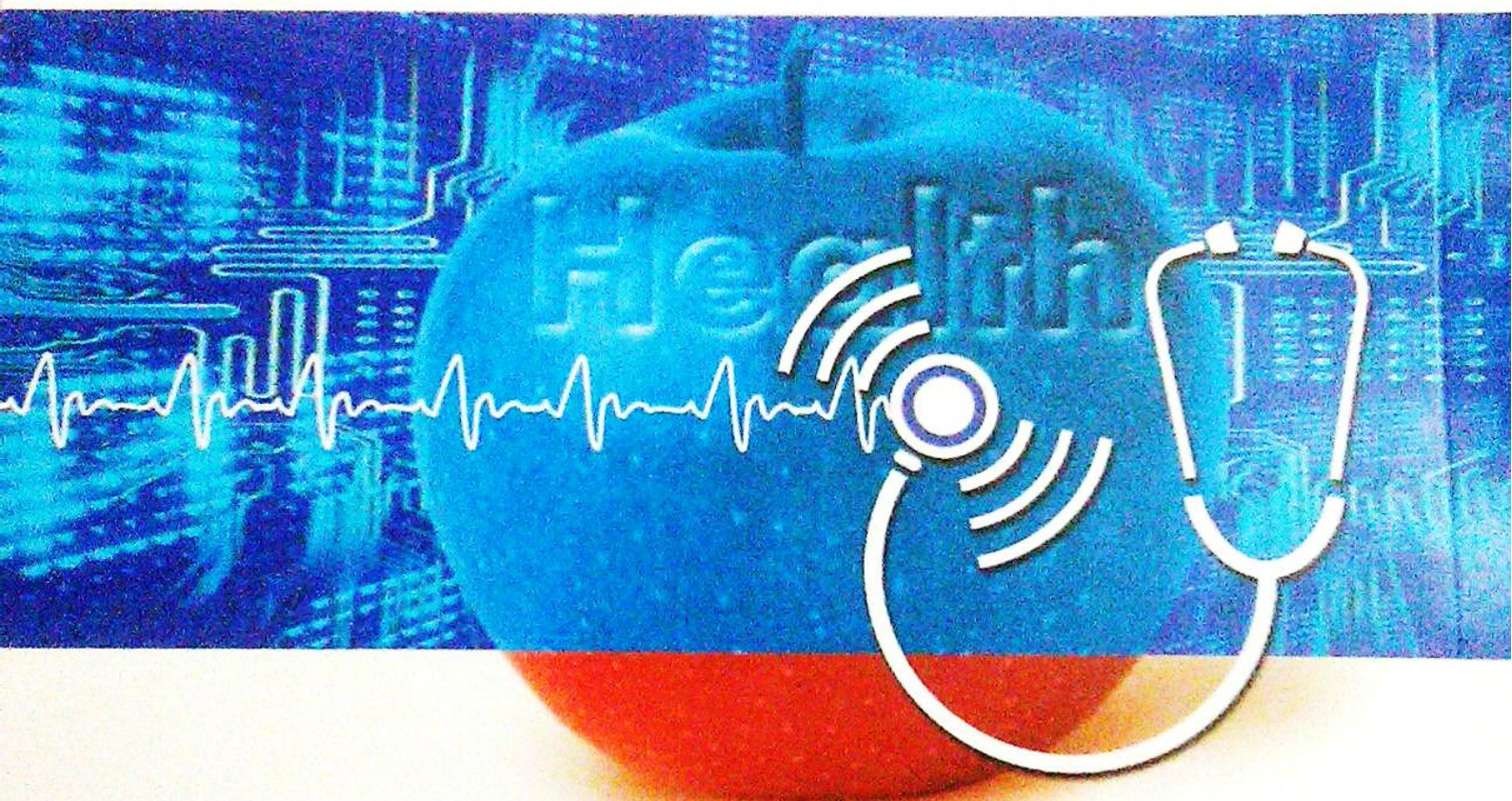
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Web 3.0 and future of electronic medical records: semantic approach

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Abstract

80's has been the starting era of using PC's in the world and consequently in the medicine. By 2000 and popularity of web 1.0, we started the new decade of web 2.0 and social web. All these evolutions in information technology have had inevitable effect on medical information systems. 2010 and the current decade is the time for web 3.0 and semantics. Effective pass through web 3.0 will, hopefully, guide us toward web 4.0; we can call it intelligent web and subsequently intelligent medical information systems.

The basic components of semantics are ontology and the knowledgebase that support the required interactions. Ontology includes lexicon and a wide variety of relationships between concepts. Internationally accepted standard ontology will be an important achievement in launching global semantics for information system. This is an ongoing project with a well-known product in medicine called "SNOMED-CT" from International Health Terminology Standards Development Organization. Around this ontological core there are different knowledgebase standards and technologies for implementation. Knowledge engineers and informaticians have different challenges in this area.

There's a wide held belief that almost all of medical data will be managed in medical information systems in less than a decade, as we can find it out in the health care provider centers around many developed and developing countries, but the next challenge will be optimum usage of this huge repository of information for the best health-care services, education and research. Although already semantics has been utilized in different levels in various electronic medical records, we have long way to use it as an applied part of our e-health system.

There is a need for a generalized, computable way to achieve semantic knowledgebase supporting standard medical ontology as a naturally dynamic and relational library. Combination of semantic ontology (web 3.0), web 2.0 facilities and medical information systems (web 1.0) will give us a holistic and complete representation of a coherent body of knowledge on medical science in our foreseeable future.