Health Web Science: Formulating Healthcare for the 21st Century – A Health Web Metadata Curation Framework to Evolve a Behavioral Model for Preferable Health Outcomes

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Abstract. To address the complex societal challenges or solve the current problems facing health care delivery, whether caused by ageing populations, globalisation and long term/chronic conditions, a shift from the traditional reactive model to a proactive health care model has begun. Furthermore, as knowledge about individual variation, in particular genetic variation, epigenetics and drug response increases, there is an evolution from a one size fits all to personalised treatment protocols. In addition, "gender-specific medicine" and a "life course approach to health" are emerging areas of study, to further tailor treatment plans to the patient. Thus the future of medicine is shifting to a patient-centric model, that is: personalised, preventative, participatory and predictive. This new approach utilizes the Internet and is underpinned by the academic disciplines of Health Web Science and Medicine 2.0. where the utilization of digital interventions play a significant role. Health Care information therefore provided through the conduit of the Internet that employs an effective behavioural model may have a pivotal role in changing health behaviours. However current evaluation and impact of of healthcare on health outcomes via the Internet is limited in its scope in terms of feedback and throughput between the Web, healthcare providers and patients. The curation of metadata of and about the Health Web is a potential tool to be able to analyse health outcomes. Metadata curation from websites and Web data increases the utility of social networks, social machines, and documentation. Web Observatories work by the insertion of metadata into a web site and using a crawler to associate these sites. Health Web Observatories will be required to enable the triangulation of data to identify new integrated strategies for preferable health outcomes. This position paper presents an integrated behavioural model, the need for Health Web Observatories, the minimum necessary components for a Health Web Observatory, and a challenge to the community to develop the necessary software tools.

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