

Knowledge Based Software Model for the Management and Treatment of Malaria Patients: A Case of Kalisizo General Hospital

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Abstract : Malaria is an infection or disease caused by parasites (*Plasmodium Falciparum* — causes severe Malaria, *plasmodium Vivax*, *Plasmodium Ovale*, and *Plasmodium Malariae*), transmitted by bites of infected anopheles (female) mosquitoes to humans. These vectors comprise of two types in Africa, particularly in Uganda, i.e. anopheles fenestus and Anopheles gambiae ('example Anopheles arabiensis,'); feeds on man inside the house mainly at dusk, mid-night and dawn and rests indoors and makes them effective transmitters (vectors) of the disease. People in both urban and rural areas have consistently become prone to repetitive attacks of malaria, causing a lot of deaths and significantly increasing the poverty levels of the rural poor. Malaria is a national problem; it causes a lot of maternal pre-natal and antenatal disorders, anemia in pregnant mothers, low birth weights for the newly born, convulsions and epilepsy among the infants. Cumulatively, it kills about one million children every year in sub-Saharan Africa. It has been estimated to account for 25-35% of all outpatient visits, 20-45% of acute hospital admissions and 15-35% of hospital deaths. Uganda is the leading victim country, for which Rakai and Masaka districts are the most affected. So, it is not clear whether these abhorrent situations and episodes of recurrences and failure to cure from the disease are a result of poor diagnosis, prescription and dosing, treatment habits and compliance of the patients to the drugs or the ethical domain of the stake holders in relation to the main stream methodology of malaria management. The research is aimed at offering an alternative approach to manage and deal absolutely with problem by using a knowledge based software model of Artificial Intelligence (AI) that is capable of performing common-sense and cognitive reasoning so as to take decisions like the human brain would do to provide instantaneous expert solutions so as to avoid speculative simulation of the problem during differential diagnosis in the most accurate and literal inferential aspect. This system will assist physicians in many kinds of medical diagnosis, prescribing treatments and doses, and in monitoring patient responses, basing on the body weight and age group of the patient, it will be able to provide instantaneous and timely information options, alternative ways and approaches to influence decision making during case analysis. The computerized system approach, a new model in Uganda termed as "Software Aided Treatment" (SAT) will try to change the moral and ethical approach and influence conduct so as to improve the skills, experience and values (social and ethical) in the administration and management of the disease and drugs (combination therapy and generics) by both the patient and the health worker.

Keywords : knowledge based software, management, treatment, diagnosis

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