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A Wireless System for Continuous Monitoring of Dengue Patients : Wi-Mon

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The improvements in the wireless networking technologies and the integrated electronic circuits have allowed the advancement in the Wireless Body Area Network (WBAN). WBAN offers many applications in remote health monitoring. IEEE 802.15.4j and IEEE 802.15.6 are standards for the medical WBAN. It allows the integration of intelligent and miniaturized sensor nodes in or on a human body to monitor the human body functions. It has great potential to make a huge transformation in the future of the medical industry. The WBAN concept provides plenty of new innovative ideas to enhance the health care systems.

The paper presents a wireless monitoring system for patients who need continuous monitoring using the WBAN concept. This wireless monitoring system contains a sensor network and a remote monitoring application. It is used to collect the vital information of the patients, such as temperature, pulse rate, ECG (electrocardiogram), oxygen saturation and blood pressure. Moreover, the system also provides management of the information collected from the sensors and alert generated for the administration when the condition of the patient becomes severe. The design and implementation of the above WBAN system are discussed in this paper. The accuracy of measurements with Wi-Mon was simultaneously validated with an existing system (Lifescope Vismo PVM-2703) in the Clinical Management and Dengue Hemorrhagic Fever (DHF) Unit of Negombo Base Hospital.

Keywords: sensor nodes, wireless body area network, wireless monitoring, dengue hemorrhagic fever