Design and Implementation of Mobile Emergency Call Schemes Based on RFID for Patient Safety

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ABSTRACT

RFID is praised as one of the top ten technologies that will influence our life in the future. The application of RFID has been extended to many fields such as Logistics, Healthcare, transportation and production management, etc. Especially, in 2004 the rapid spread of SARS disease further promotes the application of RFID techniques. The best time to rescue a patient after accident is suggested to within 4 minutes. Accident that happened at corner such as a bathroom, balcony, elevator, and staircase are most dangerous to patients, and they must be saved within 4 minutes. Currently, the alarm system used in more hospital is electronic one which is located at some specific location in hospitals. However, accidents may not occur nearby the electronic alarm system, and therefore, patients who have an accident may not be found and saved within 4 minutes. The sixth item of 14 goals proposed by US JACHO in 2006 is to improve the effectiveness of clinical alarm system. i.e. it emphasizes the importance of clinical alarm system. In this thesis, we developed a mobile alarm system beads on the RFID technique. This proposed system can help patients send call-for-help message from RFID at any place within the hospital, and thus the administrator will receive an alarm message from the system to save the patient. The system is especially useful when patients are stay alone and encounter an accident. In summary, the mobile RFID-based alarm system can improve the quality of hospital services, and further minimize the medical malpractice by human being. This thesis finally also simulates the proposed patient alarm system to validate its feasibility and superiority.

Keywords : RFID ; Healthcare quality ; Patient alarm system ; Mobility

Table of Contents

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