# Trends in health information systems and applications

Trends in Health Information Systems and Applications ID Number: of School Word Count: Trends in Health Information Systems and Applications Executive Summary New information technology is increasingly being used in the medical field to provide a better, faster and more accurate service to patients, payers and practitioners. The trends today are pointing towards the use of wireless technology to provide anytime-and-anywhere access to vital medical information pertaining to patient records, medications, electronic health records, etc. It is the purpose of this paper to give a short overview of these emerging technologies which could be of great help in improving the delivery of health care services in a multiple of settings. Overview – today's medical professionals work in an increasingly hurried environment; it is important to them they can access the right information at the right time when it is needed. The main problems identified in a medical practice which bother a lot are delays in obtaining patient information, misplaced laboratory test results, delays in updating of medical records and a host of other valid concerns such as incorrect vital physical details of a patient. Problem - the problem is really a question of properly managing the flow of information from those who obtained those records to giving the same information to those who need it the most – the medical practitioners. Present information systems used by hospitals, clinics and other medical institutions are often overwhelmed by a deluge of data. If not properly managed through the right information technologies, there is always the danger of mistakes being committed with a possibility of being sued for medical malpractice. The identified need is to use technology that can provide the information in a proximate manner in terms of both time and space. Solution – the proposed solution is to use wireless technologies provided by the same networks as

that utilized by cellular phone networks. The most promising of new technologies is the active radio frequency identification system (active RFID). This allows for tags to be placed on patients, their medical records, recommended medications and dosages, allergies, Medicare, attending physician and a host of other information normally kept in the hospital record system. The use of active RFID provides several advantages over current systems being used such as the bar code and passive RFID (Hagland, 2005, p. 1). An active RFID refers to RFID tags that have been installed with small batteries that broadcast a signal which can then be read by a portable RFID reader. Active RFID provides a decided edge in that the signal can be detected and read without the need for a line-of-sight reading as used in the present bar codes of today. Significance - this ability allows for much greater efficiency and convenience. Further, it can easily be meshed with existing wireless technologies at minimal cost through an upgrade of an existing information system. The information contained in the RFID tags are updated always as the tags can be re-programmed to accept new information or change old information in them. RFID technology can easily be merged to provide the information contained in the tags through a variety of portable devices like RFID readers, laptops, notebooks, netbooks, PC tablets, personal digital assistants and even through cellular phones. The idea is to deliver the needed information to the medical practitioner at the bedside of the patient, that is, at the point of care itself. Benefits and Risks – patient medical information can now be delivered with the anytime, anywhere context to whoever has authorized access to the information system and archives. The risks are minimal as long as proper authentication of password is implemented for each user. Application – the RFID tags are quite small and

can be implanted under the skin so as not to lose the tag if it wrapped around a wrist or worn as a tag on the neck (Healthcare Informatics, 2004, p. 1). It has already been tried successfully in Mexican patients. Active RFID had been pilot-tested also in St. Vincent's Hospital in Birmingham, Alabama (Hagland, 2005, p. 1). Cost Considerations – the cost of active RFID systems has been dropping significantly over the years as manufacturers recovered their fixed costs and aim for marginal revenues. This had previously been the main drawback but the cost is no longer a factor in the very near future. Future Uses – FRID tags can be used to expand medical services rendered beyond what is provided by the doctor or nurse at the hospital bed. Examples of corollary or extended utility will be in managing chronic diseases such as hypertension, cancer, asthma and diabetes (LeGrow & Metzger, 2001, p. 7); the tags can be used also in filling out electronic prescriptions which can greatly help in preventing medication errors or wrong dosages by achieving big improvements in accuracy, efficiency and appropriateness (Kilbridge & Gladysheva, 2001, p. 9). References Hagland, M. (2005, February). Nine Tech Trends: Healthcare IT Advances are Pulling Together to Manage an Expanding Universe. Healthcare Informatics Online. Retrieved from http://web. archive. org/web/20060427023654/http:/www. healthcare-informatics. com/issues/2005/02_05/cover. htm Healthcare Informatics Online (2004, January). Cover Story: Emerging Technologies. Healthcare Informatics Online. Retrieved from http://web. archive. org/web/20060427024631/http:/www. healthcare-informatics. com/issues/2004/01_04/cover. htm Kilbridge, P. & Gladysheva, K. (2001, November). E-Prescribing. iHealth Reports. Retrieved from http://primarycareforall. org/wp-content/uploads/2011/04/EPrescribing. pdf

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