

Rfid in health care industry

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Radio Frequency

Identification is one of the technological advancement that has made its way into almost all the industries. It serves the purpose of identifying and tracking the objects by transferring the data. Healthcare sector is one of the industries in which RFID is being used to enhance clinical practice, patient care and access the medical records of patients. RFID also helps in improving the operational efficiency and also patient safety. This paper gives a basic overview of the use of RFID in health care industry and the standards associated with it.

Identification is the process of identifying a person or an object or a thing using the RF-transmitted identification code. Over the years, the technology has played a vital role in improving the efficiency and effectiveness of health care systems. Today the health care systems are using a wide range of RFID applications to enhance the overall performance of their industry. A few applications include; RFID tracking system, RFID bracelets, RFID under the skin, RFID for patient management system and RFID for resource management system (Banks, 2007).

Hand Hygiene

Monitoring in Hospitals According to (Symonds, 2011) “ RFID can also be used to ensure that proper hygiene (and other) procedures are followed” (p. 10). Hand hygiene monitoring is an important step to be taken by healthcare industry. The RFID system can keep a track of the employees washing their hands and also the cycle time of their hand washing process using an RFID card or a bracelet. This system utilizes the simple concept of washing hands

and aids in reducing the number of infections passed on by the staff in the hospitals (Symonds, 2011).

According to Centers for Disease Control and Prevention, healthcare associated infections are one of the major causes for the death of hospitalized patients. Humans or the healthcare workers are one of the major means of transmission of viruses and infections. Infections can spread either through direct contact or through the equipment used by these health care workers. Hand hygiene is therefore the fundamental measure in reducing the number of healthcare associated infections. The main aim of RFID systems here is to improve the hand hygiene in hospitals by building an automated monitoring system (Bennett, Jarvis, & Brachman, 2007).

The hand hygiene system comprises of the following measures to be taken to prevent the transmission of diseases: * Cleaning hands with soap * Hygienic hand rubs The main objective here is to kill the bacteria that live on the surface of the skin to avoid its transmission to other people when in contact. The hand rubs consist of alcohol that kills micro organisms from nails, hands and forearms. They prevent drying of skin and reduce the rapid re-growth of bacteria (Raftery, 2008). RFID Hand Hygiene Monitoring System

The RFID technology uses small “ tags” which emit radio signals. These signals are read by the RFID readers. One of the recent developed RFID enabled system is a IntelligentM’s wrist band system which functions as follows. * The RFID readers are placed on the hand washing and sanitizing stations and the RFID system know all the locations of these stations. The employees who wear the wrist band developed by IntelligentM consist of the

tags that can be read by the readers that are present on these sanitizing stations.

- The accelerometer that is present in the wrist band will identify the time spent by the wearer in washing the hand. The wrist band will not buzz once if the hands are washed correctly and thrice if they are not.
- The RFID tags are also placed on some of the equipment and outside the patient's rooms. Before carrying out any procedures that have higher risk of carrying infections, this system alerts the health care workers to properly clean their hands.
- The employees are monitored at the end of each shift by collecting the data from the wrist band through the micro USB.
- In this way the hand hygiene system is monitored by the use of RFID (Young, 2013). RFID World Regulatory Bodies The regulating bodies from the following countries have an influence over the advancements of the RFID related technologies.
- United States: FCC regulates electromagnetic spectrum.
- Japan: Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) * Europe: Both the FCC and MPHPT are related to European Conference of Postal and Telecommunications Administrations (CEPT). RFID Standards in Health Care Industry

International Standards Organization (ISO) ISO is a " non-governmental, international body based in Geneva, Switzerland" (McDonnell & Sheard, 2012). It provides standards for the tag data management and air interface protocols. European Committee for Standardization (CEN) European Committee for Standardization is a " European based non-profit organization <https://assignbuster.com/rfid-in-health-care-industry/>

located in Belgium". CEN works in collaboration with ISO to develop balanced international standards in healthcare (McDonnell & Sheard, 2012). British Standards Institute (BSI)

British Standards Institute " is a national standards body in the UK". It is concerned with the products that are used in Healthcare and standards of these products (McDonnell & Sheard, 2012). American National Standards Institute (ANSI) American National Standards Institute is a body that is based in USA. It provides guidelines to develop products and approves the products that have met the recommended practices set by Association for the Advancement of Medical Instrumentation (McDonnell & Sheard, 2012).