

ABSTRACT

The Bangkok Christian Hospital is one of the hospitals that is studying technology to decrease the working lead time and also prevent medical error in giving medical treatment to the wrong patient. There are two technologies that they are considering. Those technologies are RFID and Barcode.

In this paper, the analytic hierarchy process (AHP) is used as technique for analyzing information systems implementation decisions. Expert Choice is used to implement the AHP. There are 10 main factors with 26 criteria to be considered. Sourcing of the factors is from expert comments and published articles. Explanation of each calculation step of Expert Choice is also provided.

The study results show that implementation of Barcode seems to be the best option. Barcode is stronger than RFID on the following points; Limitation of the system, Uncertainty of the system, Compatibility of software, Compatibility of hardware, Resource requirement, Easy to implement, Reliability, Number of vendors available for installation, System maintenance, Number of vendors available in term of back-up service, Cost of Tag, Cost of Reader, Cost of Implementation and Cost of Application. These factors are considered as the direct factors which mostly affect the result of the decision to identify the better identification technology.

Within two years, barcode is the better technology to use and implement. In the long term, RFID experts believe that RFID will replace barcode technology. So, the hospital should prepare their system to support expansion of RFID in the future.

The result of this study could be an example for other hospitals interested in implementing RFID or Bar code and also using the Analytical Hierarchy Process (AHP) in identification technology selection.