Application of an RFID tag to medical equipment management support - Construction of an operation manual system for medical equipment

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Abstract and Objective

Operation confirmation of medical equipments is indispensable for safe and accurate operation in medical care. In Japan, the standardization of information for medical equipments is in progress and some information such as operation manual one is offered. We already developed a medical equipment management system with an RFID. In the present study, a manual information referring system for operation was developed as one of the system by converting the manual information offered in SGML into an XML file and a PDF file. The manual information is able to be obtained on the bedside by using a PDA with an RFID reader. It was expected that the newly developed system contributes to safety operation of medical equipments.

Keywords:

medical equipment management system, manual information referring system for operation, XML file, PDF file, PDA

Introduction

It is important to manage medical equipments to prevent medical accidents because frequent accidents originated from inadequate management of equipments have occurred recently. Therefore, we intended to develop a safety management support system for medical equipments and started study on construction of the system by which the maintenance and inspection management and alibi management of the equipments can be supported by using an RFID tag. In this study, a manual information referring system for operation of medical equipments was constructed by using an RFID tag and a PDA with an RFID tag reader as operation confirmation is indispensable for safe and accurate use of equipments.

Methods

In Japan, the standardization of information for medical equipments is in progress and a manual information for operation of equipments can be offered by SGML. We converted the information to a PDF file via an XML file and the PDA terminal was used for convenience. In designing a form in the PDF file, opinions of nurses and clinical engineers were adopted, considering that they are major users of equipments. We made the file by calling the form from the browser software on a PC. The XML files for the manual information with the illustration were made by entering the additional information to the form.

Results and Discussion

The safety of medical equipments could be executed by making it possible to grasp detailed information on operation and control by the medical equipment management system constructed by us. In this study, attached document information besides essential information was included in the created PDF file for the operation manual. We could make the input work for the manual efficient by taking the information included an RFID such as ID information to access a medical equipment database, lending and inspection records etc. into the manual. The PDA terminal with small screen size became possible easy to obtain the necessary information by adopting the PDF file with the tab for the tap operation. In addition, it was considered that the efficiency of the reorganization work of the manual has been improved by preserving former information that made the manual as an XML file. The constructed system enabled medical personnel to refer to the operation information, the history of use, repair and check of medical equipments on the bedside by adopting the PDA.

Conclusion

In this study, a manual referring system for operation as one of the safety management system for medical equipment was successfully developed by applying an RFID and the system was thought to be useful from the result of a trial. In the next place, we have a plan to build the system on a full scale and confirm the utility of the system by installing it in a hospital.