醫療物件導向式安全存取控制

Medical Object Oriented Access Control

中文摘要

資訊科技技術的提昇，增進了人們對於資訊工具的廣泛使用，爲了提高醫療品質、完成管理決策與提高效率的競爭優勢，對於如何快速且確實並確保醫院資訊中各種臨床資訊中「醫療記錄」的保護，醫療資訊系統(Healthcare information systems)中之「安全存取控制」已成爲醫院組織活動中不可或缺的存取管理控制工具。在資訊的擷取、交換與儲存的過程中，設計一套安全存取控管(Access control)機制，以防止在存取的過程中，發生危害病患或醫院組織之行爲的進行、防制弊端的發生，並進而提昇組織運作的安全防護能力。

傳統上以「醫療資料」(Medical Item)爲基礎單元存取控制或以「角色爲基礎」(Role based)之方法已無法滿足對於醫療機構資料以群體性之不可分割的特殊需求，本研究首創以「醫療記錄」(Medical Record)爲基礎的存取控制，醫療使用者皆以就醫過程的「醫療活動」(Medical Activity)中，以醫療記錄爲基礎的存取控制(Medical Record Based Access Control)之下，存取權限則是經由所屬之醫療活動來決定。而就目前各醫療院所之電子病歷及診間醫令系統中，大都著重於數位化的過程，故本研究中提出以 Medical Record Based 以及 Medical Activity Oriented 的觀念應用於安全存取控制中，利用 Medical Record 及 Medical Activity 爲基礎，Medical Record 及 Medical Activity 分別扮演 Member Data 及 Member Function，將 Medical Object Oriented 之觀念實際運用於工作的需求，同時亦改善了「以角色爲基礎」(Role-Based Access Control Model)的缺點，以便與更爲符合實際醫療之行爲模式。

英文摘要

The elevation of Information techniques increases the usage of Information tools broadly. For the purposes of elevation of medical quality, make management policy decision and higher the efficiency of competition advantage, it should be ensured that the protection of Medical Record of hospital information indeed and rapidly. The safety access control of the Healthcare information system has been the necessary access control management tool for the activity of hospital organization. In the process of information grab (access), exchange and storage, should be designate a safety mechanism for access control, prevent the damage behavior to the hospital and patient in the process of access, and elevate the safety protect capability of organization.

In convention, it can not satisfy the special requirement of colonial data to the medical organization, that use the method of access control to the unit of medical

item or role based. This study creates a method of access control that base on the medical record. The limitation of access control for the medical user, under the base of medical record, is decided by the medical activity.

For the system of Electronic Patient Record (EPR) and Doctor Entry (DRE) in the most of hospital, is mentioned the procedure of digitalization. This study supplies the concepts of Medical Record Based and Medical Activity Oriented to safety access control. The Medical Record and Medical Activity are as the Medical Data and Medical Function, use the concept of Medical Object Oriented to the requirement in practical. In the mean time, abate the defect of Role-based Access Control Model, and mach the real medical behavior model.