具有語音回饋機制的護理備藥資訊系統之建置與評估

Implementation and Evaluation of a Nursing Medicine Information system with Voice Response

中文摘要

健保自 84 年 3 月開辦迄今，健保支出逐年的增加，面對醫療費用上漲的壓力，爲了有效控制醫療費用成長，醫療保險陸續實施醫院自主管理及人事精簡[1]，加上醫療的進展，使得醫療照顧本質上複雜性增加，現行以量取勝的醫療環境所造成「給錯藥」的情況已成爲一種警訊與危機，備藥的護理人員未必是給藥的主護護士執行，管制藥品抽藥時用雙重檢查 Double check 耗費人力，在在反映出醫療過失發生的可能性大增。1995 年美國 ASHP(American Society Health System of Pharmacists)定義醫療過失是指在由疏忽所造成醫療行爲下錯誤之危險事件，其中包括了藥物治療錯誤、藥物不良反應等等[10]。用藥疏失的嚴重性，會造成疾病的惡化、身體的傷害，更會造成醫療資源浪費及社會成本的增加。

隨著資訊科技的日新月異，資訊系統在醫療照護品質上逐漸扮演重要的角色[13]，護理資訊電腦化亦爲醫院健康照護系統中重要的一環。有鑑於此，本研究設計一個具有語音回饋監督機制的護理備藥資訊系統，以輔助護理人員的給藥流程上進行「三讀」、「五對」之監測[14]，本研究之步驟爲: (1) 先現況分析確認電腦資訊系統的需求(2)發展能處理護理實務面的資訊與知識模型(3)針對護理實務做資訊系統的評估、設計和應用(4)評量該系統對於護理實務和提供病患照護的成效。

而本研究主要目的爲期望在加護病房工作量繁重的壓力下，設計的護理備藥資訊系統，乃運用條碼的辨識技術來增加藥物及病人的辨識，以微軟作業系統 windows XP 爲應用平台，APACHE 爲網站伺服器，使用 PHP 程式語言來開發設計，以 MySQL DB 資料庫，期間將備藥過程稀釋步驟透過微軟播放音訊功能的啓動，讓語音能即時的播放，以替代現行所花費的兩位人力需求核對藥物稀釋流程，訂定完善護理標準及其模式以改善護理工作，預防、分析以及追蹤醫療疏失及不良事件之發生，進而提供病患用藥之安全，達到有效且良好的服務品質。

英文摘要

Because of the fast progress of medical treatment, the medication procedure becomes more and more complicated. Especially in the present national health insurance environment, the probability of “giving wrong medicine” has increased. The nursing staffs who prepare the medicine may not be the same person who gives the medication. It needs manpower for the double-checking when preparing control medicines. Therefore, medical mistakes may happen. According to the definition from ASHP (American Society Health System of Pharmacists), medical mistakes are the

incidents result from medical treatments including medication mistakes and medicine interactions.

The objective of this project is to develop a nursing medication information system with voice response monitoring. The main procedures include: (1) Identification of the requirement of the information system, (2) Designing a knowledge model for the nursing medication information system, (3) Designing and evaluating the practical nursing medication information system,(4) Reviewing the system according to the performance of taking-care of patients.

We designed the nursing medication information system by using a "one-Dimensional Bar-Code" scanner to identify the medicine. The operation system was Microsoft Windows XP. The web-based system was implemented in the Apache web server environment using PHP. The MySQL DB will be used to build the relational database. The voice responses were controlled by the windows media player engine. After identifying the contents of the responses, the system draws the waveform files from database and plays back the voices according to the results of the bar-code scanner from medicine container.

The system helped the nursing personnel to monitor the double-checking procedure of preparing medication. We expect that by using this system especially in the intensive care unit, the working environment can be improved, the nursing workload can be reduced, and the efficiency can be enhanced to reach a better quality of medical service.