建立架構於資訊藥車上之輔助性給藥安全資訊系統

A Drug Information System Constructed on a Computerized Drug Cart to Help Medication Administrating

中文摘要

前言：

近年來在台灣，臨床藥學的重要性越趨提昇，然而在現行的制度之下，藥師的人力遠不足以去執行藥師法於民國九十六年所增訂的「藥事照顧相關業務」，而爲因應現實狀況的限制，許多醫院均運用資訊科技的方式來輔助用藥安全，本研究即是此方面的應用之一，並從不同的關節下手，期望不僅僅是達成「給藥零錯誤」的目標，更能輔助並部份取代目前少有臨床藥師巡房的缺憾，達成近似的功能，並提升病患用藥安全。

系統設計與方法：

本系統主要收集彙整行政院衛生署「藥物辨識資料庫」與「藥事服務整合資料庫」建構藥物資訊資料庫，並收集藥物交互作用資料以及注射用藥相容性資料，計畫在給藥介面中加入住院病患與用藥查詢、藥物資訊查詢與藥物交互作用查詢三項主要功能，用藥查詢功能主要爲自所在醫院取得住院病患資訊與處方資訊，藥物資訊與藥物交互作用查詢則爲護理人員於發藥時，可立即查詢所交付藥物之藥物資訊與此筆處方是否有藥物交互作用，此功能於注射用藥給藥介面則是查詢此筆處方中注射用藥是否有不相容的問題。本系統主要運用 Delphi 程式撰寫。

研究結果：

本研究基於建立一個架構於資訊化護理藥車上之輔助性用藥安全資訊系統之研究目的，並依照上述之系統設計與實作，完成此「輔助性給藥安全資訊系統」，其中包涵藥物資訊資料庫內含 4,408 筆藥物資訊，並在進行藥物資訊資料庫整理時，定立藥物資訊初步標準，我們也完成了注射用藥相容性資料庫內含 1,452 筆不相容性資訊，以及整合藥物交互作用稽核功能，並在系統建置完成後將醫院病患資料實際帶入，驗證系統及其效益，發現能夠找出約 16.3%的住院病患藥物交互作用。

討論與結論：

根據病患資料帶入驗證的結果，我們確立了用藥安全決策支援系統在不同給藥環節之必要性，而藥物交互作用稽核在給藥端的呈現方式及內容與醫囑端之差別，則是日後可繼續研究的方向，另外，注射用藥相容性稽核功能的結果呈現如產生調劑建議表，將可更有利於臨床人員減低工作負擔，對其資料庫之持續建置也是日後可努力的方向。

英文摘要

INTRUDUCTION

In Taiwan, clinical pharmacy has become more and more important these years, and the pharmacy law had revised that medication care should be pharmacists' obligation in 2007. However, pharmacists could barely practice medication care for patients, especially inpatients in the present system. Therefore, many hospitals use information technology to fix the situation, so as this thesis. In this study, we designed a system constructed on the computerized drug deliver cart to prevent medication errors in many ways, expecting to reach not only "zero omission", but also play the clinical pharmacists' role, and raise patient safety.

METHODS

Two databases were created to complete the system. The first data source is called "The Integrated Pharmacy Care Database" which was released by the Department of Health (DOH) of Taiwan. The second data source is an "Intravenous Drug Compatibility Database", the compatibility information were mainly sorted from a textbook called "Handbook on Injectable Drugs" published by American Society of Health-System Pharmacists (ASHP). This database stored information for incompatible drug-drug or drug-solution results. In this study, we constructed three drug-safety information modules, they are drug information module, drug interaction module, and intravenous drug incompatibility module. Delphi language was applied to code the programs of this system.

RESULTS

We completely constructed three drug-safety information modules including drug information module, drug interaction module, and intravenous drug incompatibility module. We completed a drug information database including 4,408 drug information, and a intravenous drug compatibility database including 1,452 incompatible drug combinations. After the system is completed, we used real patients' drug data to analyze drug interaction rates, and found that 16.3% of inpatients had drug-drug interaction issues.

DISSCUSIONS AND CONCLUSIONS

According to the results, we found that it's necessary to apply decision support functions in different stage of medication therapy to improve patient safety. In this case, a decision support function could play its role on computerized drug deliver cart, as well as administrating stage. However, the drug alert content should be different from stages to fit the present workflow, and the incompatible drug alert function

would be more useful if it could also suggest a proper route or dispensing method. These are issues that could be continuously focused in the future.