QUALITY CONTROL IN MANUAL AND COMPUTERIZED UNIT-DOSE DISPENSING SYSTEMS (UDDS)

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Introduction. We compare the quality of filling of unit-dose carts by manual and computerized systems in a private, acute-care, 358-bed hospital with the following characteristics: average length of stay of 5.3 days; 1,600 patients per month; 1,140 operations per month; and an 87.7% occupancy rate. Classic studies in this field (1) have considered analysis of the percent of errors to be appropriate measure of the quality of dispensing of unit-dose medications, and have reported results that range from 5-20%, depending on the study. The purpose of this study is to perform this evaluation in our hospital before and after the introduction of a computerized system, in order to evaluate the results of such a system.

Material and Methods. The hospital has a Model 190 IBM 9121 central computer with the following characteristics: 64 Mb, 25 Mb disk space with 110 screens, 30 personal computers and 75 printers. This computer serves 904 users (244 physicians); the Pharmacy Service, which is open 24 hours a day, has 6 terminals and 6 printers. We analyzed two one-month periods (the first, when the manual system was still in use, and the second, when the computerized system was operating) on three hospital floors (Cardiology, Surgery and Internal Medicine) that comprise 28% of the beds in the hospital. The first phase did not include a pharmacist's evaluation of the prescriptions, since the carts were filled directly from the prescriptions. In the second phase, 100% of the prescriptions were validated by a pharmacist, and 11% were entered by physicians directly into the computer, with the medication administration sheet prepared in the Pharmacy for the nursing staff along with the labels for i.v. additives and work lists. All the errors detected were corrected.

Results.

	Manual UDDS	Computerized UDDS
Patients	2,440	2,075
Medications	8,472	8,450
Units	18,370	19,297
% Errors	6.7	2.2

Conclusions. The errors in filling carts were reduced by 4.5%. The quality of the system was improved and transcriptions were avoided by printing out medication administration sheets for the nursing staff directly from the database; medical prescriptions by computer (22% of the total number of prescriptions) are safer.

Bibliography

1. Barker KN, Harris JA, Webster DD. Consultant evaluation of a hospital medication system. Implementation and evaluation of the new system. Am J H Pharm 1984, 41: 2022-9.