The objective of this study was to develop a computerized information system and to evaluate its effectiveness to fit the users' needs and enhance performance of drug inventory control system of the pharmacy department at Police General Hospital. This study was an operational research. It was conducted between August 1998 and September 1999. The study was divided into two parts: 1) system development, and 2) system evaluation. For initial step, the old system was analyzed and the users' requirements were determined. Then the new inventory control system was designed and MS-Access 2.0 was used to develop the new software application. Afterwards, the new system was tested. Finally, the developed system was implemented. After system implementation, four criteria: out-of-stock situations, borrowing situations, time spent to make request orders, and inventory turnover rate, were used to compare effectiveness of the old and the new inventory control system. Moreover, pharmacy users' satisfaction was investigated by questionnaires.

The new inventory control system was developed in order to efficiently process information of receiving and issuing drug inventory, input all borrowing data, provide accurate and timely inventory information to pharmacy users via a floppy disk, and improve reorder report to be suitable for making request orders. Computerized recording error in physical stock count was reduced from 3.89% to 2.68% during system implementation. The new computerized drug inventory control system showed a significant decrease in out-of-stock incidences (from 25.65% to 13.75%) and request orders processing time (0.91 to 0.61 minutes per item). Inventory turnover rate was also increased from 7.43 to 8.43. However, the borrowing situations were not significantly different for the two systems. For user satisfaction, the pharmacy users were more satisfied with the new inventory control system than the old inventory control system. Pharmacists had significantly higher satisfaction in time, information, method, and efficiency than pharmacy technicians.

This study will be useful for pharmacy administrators to develop other systems for comprehensive pharmacy services at Police General Hospital. Also, the study will be useful for other hospitals that have similar problems to use as a prototype for developing drug inventory control system.