

A MICROCOMPUTER-BASED SYSTEM FOR THE RAPID IDENTIFICATION OF SOLID DOSE FORMS

J. Kotecha & R.M. Morgan, Department of Pharmacology, Faculty of Pharmaceutical Sciences, Sunderland Polytechnic, Tyne and Wear, SR1 3SD.

In recent years the increase in the use of solid dose medication has made rapid identification of tablets and capsules important in a number of situations. A variety of identification systems have been developed using charts, or trays of specimens, for comparison. However, these are often found to be extremely complicated or bulky, and consequently are of limited value to the pharmacist.

The increasing use of microcomputers in retail and hospital pharmacy means that these machines may now be used to store tablet and capsule identification data for rapid retrieval. We have developed such a system based on a Commodore 4032 microcomputer, with associated disk drive, which may be used with ease by both pharmacists and their assistants.

The ability of the microcomputer to search a database rapidly is exploited by first searching for any identifiable tablet or capsule markings (identification code). If the dose form is not identified by this first search the computer then moves to a routine to ask a series of questions concerning the physical characteristics of the tablet or capsule. The answers to these questions are then used to produce a unique code (generated code) which is used to search the database. The database currently contains information on some 830 commonly used generic drugs, thus enabling the identification of a wide range of proprietary forms with the minimum use of storage space.

On program run the "identification code" or "generated code" is searched in a series of sequential files. When the required code is found the computer also finds a complex code which points to a random access file containing details of generic drugs. The contents of the tablet or capsule are collected by successive calls to this file until all active ingredients are displayed on the screen.

In 40 trials with volunteers the computer system was found to be faster than the chart-based Chemist and Druggist system (see Table 1).

Table 1. Time (s) for successful identification of solid dose form.

| Dose Form | Computer | Chemist & Druggist |
|-----------|----------|--------------------|
| Marked | 40 ± 4 | 190 ± 31 |
| Unmarked | 153 ± 20 | 194 ± 32 |
| Both | 63 ± 9 | 191 ± 26 |

We believe that this system would provide a basis for a pharmacy based identification system which may be easily extended to include more drugs and rapidly updated for new products.