HOSPITAL DATA PROCESSING SYSTEM

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a system for automatically handling and processing hospital patient and pathological test data in a programmed data processing machine, and in one of its aspects to methods employed by the system for handling such data in the data processing machine.

2. Prior Art

Hospital administrators, nurses and laboratory technicians in a hospital or clinic of any size today must daily handle large volumes of data concerning patients in the hospital, and the various pathalogical tests performed on such patients. Although data processing machines which can handle, store and act on large volumes of information in relatively short periods of time have been suggested in the past for use in hospitals, satisfactory systems for the larger hospitals have not been provided because the storage arrangement of the data in the data processing machine has been broken down into relatively large numbers of separately addressed files, arranged so as to severely limit the useful storage capability of the computer, and the flexibility of the system. Since storage capability is a function of dollars to be spent, this factor alone can cause the data processing system to be too expensive for many hospitals. Also, in those computer systems designed for a particular institution, the systems used have not been such that they could accommodate rapid changes in pathology practices and rapid changes in computer equipment and technology.

BRIEF SUMMARY OF THE INVENTION

It is thus an object of this invention to provide an automatic data processing system for hospital use which overcomes the above noted shortcomings, to provide a practical and economical system for handling large volumes of routine hospital patient and pathological data.

Another object of this invention is to provide such a system which can readily accommodate changes in requirements for data storage and handling and changes in the type of peripheral equipment employed with the system.

These and other objects of this invention, which will be apparent upon consideration of the appended claims and drawings, and the following detailed description are accomplished according to the preferred embodiment illustrated by providing a central processing unit having a relatively small number of separately addressed data files, handling a large majority of information storage in the system, such as four main files and a plurality of remote stations. The system storage is essentially provided by four expandable files, three of which provide for permanent storage, and one of which is a daily transaction file. The remote stations include at least one administrative or patient entry station where the data concerning a particular patient can be entered and stored permanently or for a relatively long period of time in a Patient Description File (PDF) in the central processing unit, at least one test request station where a test request and patient information can be stored in a relatively short term Transaction File (TF) in the central processing unit, and read out at the test request station, and at least one data collection station, generally associated with one or more pathological laboratories, where test data and results may be inputed into the Transaction File from one or more analytical devices, or from a manual input by the operator. The remote stations may also include a high volume collection station where high volume inquiries and readouts may be performed, for example, of all tranactions in the Transaction File for a particular date.

Also a Test Library File (TLF) may be provided for relatively long term storage of information concerning each test available at the hospital. A Past Results File (PRF) may also be provided in the central processing unit and at the end of each day, or other suitable period, all completed tests during the day can be transferred into the Past Results File for permanent or long term storage.

By reference to a particular file, it is meant that a group of related information is stored in the storage area of the computer so that by a common request or address, generally of but a few characters, one can cause the computer to act on or scan the group of information. For example, all patient description information is stored with a patient number so that when the computer receives a request for information on a particular patient by this number, it is only necessary to scan the Patient Description File to find the appropriate patient number in the file, and then the information associated with that number can be printed out. Also, each type of test can be assigned a different number and the information concerning the various tests stored in the Test Library File can be accessed by the use of a single number. The specific files can also be broken down into a series of logical records (i.e., one logical record being all patients with last names starting with an A, a second logical record being all patients with last names starting with B, etc.) stored in a geographical record (a particular storage disk or a particular section of a storage disk wherein both the referenced first and second logical records would be located) and pointers provided in the program to the appropriate geographical record, so that when a particular logical record is being hunted it will only be necessary to scan the one geographical record containing it.

An important feature of the above described arrangement of the files in the central computer is that they are easily accessed by different departments or stations in the hospital to obtain the information that particular department requires. For example, a hospital administrator by using a particular test number may obtain cost information on that test from the Test Library File, while a technologist using the same test number may obtain a listing of the sample quantity for that test. As hospital and pathological requirements change it is a relatively simple matter to update the appropriate file without altering substantially the basic system or its underlying programs.

While reference has been made to four basic data files for use in the present system, a number of other files may be provided for facilitating handling of the data into and out of the basic files, as described below. By way of example, a group of pathological tests may form a test battery and some means (as to be described) may be provided for determining if a particular test is a battery test, and what tests are in a particular battery.