

Introduction

The sixties proved in many ways to be the decade of computer techniques. Within certain fields, for example industrial administration, the advantages of computer techniques were obvious, while in other fields, for example the medical, it was not as easy to define where and how the new technique could be used. Computer techniques attracted the attention of many, and endeavours were made in many different medical connections, at a number of places at home and abroad. Uniform standards regarding applications and methods were not available, and both the user and the manufacturer had no option but to use their own judgement when solving problems; guided to a certain extent by the results from other fields of application, which were already more advanced.

The possibilities of computer techniques were appraised quite differently in different quarters. In some quarters, it was held that the solution to most data problems would be the installation of a Central Computer, to which all functions, i.e. clinics, laboratories and administrative organs would be connected via terminals. In other quarters, a computer for each clinic was proposed — at least at one's own clinic.

One of the most urgent questions, regarding the complex problem of the possibilities of computer techniques within the medical field, was where the technique could rapidly be employed in a useful manner. The medical specialists mainly searched for solutions within the clinical field, while principals primarily sought an improvement in the efficiency of the health sector as such. It was, however, typical that everybody overestimated the immediately accessible possibilities of computer techniques and at the same time underestimated its true future potential. The main reason for this was that the real computer specialists, i.e. research workers in information processing, were not consulted in this connection.

The present situation within the health sector is that more and more patient data is being produced. The number of patients flowing through the machinery of the health sector per time-unit is increasing. The amount of information about these patients increases as the methods for examination and treatment become more sophisticated and are further developed.

The amount of patient data is increasing rapidly, much faster than the number of physicians/principals. The foremost advantage afforded by computer techniques, namely the processing of information, is exactly what the physician requires. The information must be presented in a manner that allows a physician to make a quicker decision, thus

providing better patient safety than in the past. The demands on framing include the factors that deal with selected and quality controlled information, presented in an explicit manner and at the right time. One of the main advantages of computer techniques is that it permits a number of checks, which are otherwise difficult to perform. Comparable data is received and by means of checks an information of high quality is attained.

Medical data processing is still in its initial phase. During the past years, it has been possible — by trial and error — to arrive at a generally accepted motivation for the introduction of data processing within the health sector. These motives are, e.g.:

- Higher quality of information with controlled quality features
- A higher utilization degree of existing information
- A more rapid flow of information
- A better basis for the control of cost development

Development must proceed stepwise

Almost over the whole world, there is at present a struggle to cope with the ever increasing demands upon medical care. The economical resources for medical care are limited, and it is evident that costs for medical care cannot much longer continue to increase at the present rate.

A leading factor in the effort to counteract this increase is a better utilization of personnel and resources. Applied to the data processing field, this means that basic planning must be considered in a nation-wide aspect. Employing modern communication technique, it is possible to design an interlinked co-operating data system in a country, see fig 1. In this way, a double investment is avoided regarding machine installation and research work.

There is no one to-day who can say how a nation-wide system should be constructed, when it is complete. Neither is there anyone who can say what this completed system will be able to accomplish. One of the reasons for this is that the system will never be complete. The telephone network is an example with similar prevailing conditions. Each new subscriber increases the value of the network, as each new service facility also does.

A national data system must be built up at a rate determined by a number of factors, e.g. economic and personnel resources, necessity, knowledge, data maturity and economic demands. These factors also determine within which fields computer techniques should first be employed. The rate of development