

Computers in Nursing

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WE live in an age which might well be called the "Computer Revolution" like the Industrial Revolution. This has a profound effect on our way of life. This computer revolution is helping man to extend his mental capabilities.

In recent years, there has been a tremendous impetus towards computerisation in nursing. As the largest group of employees in hospitals, the nurses are in a position to significantly influence the future use of hospital computerisations. It is, therefore, essential that the understanding of the new tools which are causing this revolution is acquired by the up and coming younger generation.

Need for Computerisation

As we are all aware, most of the hospitals in India have far too many patients than they can efficiently cater to. Their facilities are over-burdened and their resources are strained to their limits. To add to the problems of overcrowding, there is a voluminous amount of paper work to be handled which often means non-availability of patient-related data, on time. This leaves little time for patient care and chances of error increase due to manual computation thereby making the system inefficient and inaccurate. However, with computerization, they could resolve these problems and derive certain benefits including:

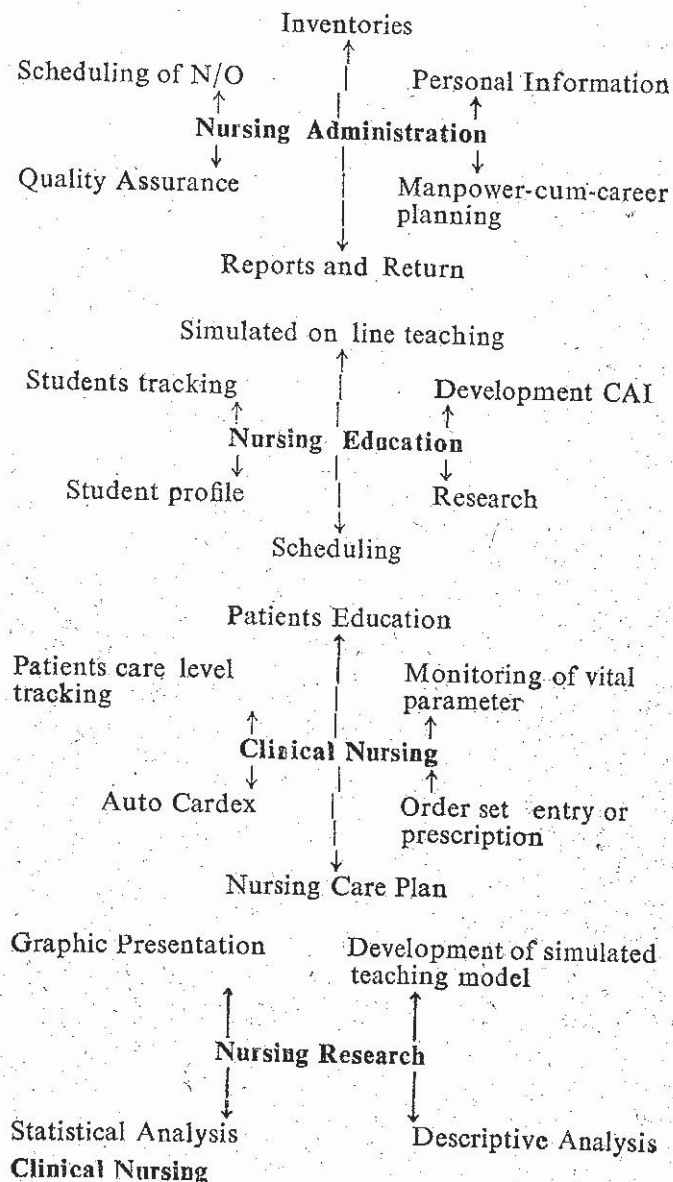
- Reduction in clerical work required of professionals;
- Reduction in printed forms;
- Centralized patient care data;
- Instantaneous input and retrieval of clerical information from numerous remote sites;
- Improved accountability and accuracy of information;
- Reduction in lost charges;
- Improved cost accounting;
- Possible reduction in length of patient stay;
- Dietary planning;
- Inventory control for drugs and other supplies and so on.

Prominent Areas of Computer Application

Computerization can be adopted, adapted and absorbed into virtually every area of nursing services. Computer can assist us in the areas of:

- (a) Clinical nursing;
- (b) Nursing administration;
- (c) Nursing education; and
- (d) Nursing research.

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Computer plays an important part in nursing care, saves time and removes a considerable workload on nurses, by taking over the routine documentation and other clerical functions such as records of treatment book, controlled drug book, investigation book, diet sheet, inventories of wards, medical and dispensary indent book and so on. These are time consuming activities which a nurse has to perform besides giving direct patient care. The time saved due to reduction in paper work allows the professionals to spend more time with the direct patient care such as

feeding, sponging, meeting needs of the patients and giving psychological support to patients. etc.

Computer is equally more productive in monitoring the vital parameters in the care of critically ill patients (ECG, Systemic Arterial Pressure, Pulmonary Arterial Pressure, CVP, Heart Rate, BP, Automated computer-assisted fluid and metabolic balance and TPR) and such a system could be built in the computer to alarm the nurses when parameter lies below the safe/normal range to take appropriate action in time.

Information entered in computer regarding patient care is not lost and easily available to physician and nurses through the use of remotely located terminals thus helping in maintaining the continuity of patient care. Use of telephone is also minimized as the laboratory investigation values/reports are entered directly into the computer if the local area network is used.

Nursing Administration

Because of its high speed processing and error-free transmission of data, computer can improve many routine functions of nursing service administration system by identifying those management tools that will improve efficiency while reducing cost and errors besides maintaining quality and effectiveness. The application of computer technology in nursing administration activities helps in assessing the patient needs and translating these needs into staffing requirements and policy-making, estimating workload, maintaining personnel record, medical record, career development, promotions and superannuation and resettlement.

All these information which are prepared manually for every promotion board, selection for deputation, courses, specialist training can easily be retrieved once computer is in use.

Research and Development

With the availability of highly sophisticated and versatile graphic system, both in terms of software and hardware, the design and development process has found a facility, "Computer-aided-design", which was unheard of a few years ago. Such developments of a computer simulation to evaluate the clinical performance, a large cluster of data processing applications that directly or indirectly support basic and clinical nursing research, complex statistical analysis, and colour graphic system are like dream tools for research in nursing. It removes inaccuracies from mathematical calculations thus providing accuracy of statistics. Years of work can now be performed

with relative ease, compressed into a few days or weeks with the help of this advancement in computer technology.

Education and Training

Computer-aided instruction and education (CAI & CAE) is yet another major development in the field of computer technology.

As the demand for improvement in the delivery of health care grow louder, the need for expanded and innovative training programme is increasing. How are these challenges to be met? Clearly one answer lies in improved programme by way of computer aided instruction and education. Educational software consists of programme designed to teach a skill. The skill may be a general improvement in analytic abilities or can cover a specific body of knowledge. Use of this technology ensures that proper training is imparted to each individual to develop her skill required for the job. Since training is imparted through a video screen, where the trainee remains in physical contact with a computer system, the learning is more effective. Teachers' capabilities, personal moods and attitudes are no longer a constraint. This does not mean that classroom and clinical experiences are no longer required, but these get supplemented by CAI & CAE.

Conclusion

By virtue of today's socio-economic environment, the institutional needs are continually growing as well as changing and computer technology advances the result of this dynamic situations. Appropriate use of computer technology provides a very high level of effectiveness, reliability and accuracy. Moreover, computer and informatics are playing an increasingly important role in improving the overall health care. The nursing personnel need to think in terms of taking advantage of the new development in computerization after a systematic study of the operations in the hospitals.

References

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