COMPUTERISATION : NEED OF THE HOUR

Brig SV VATVE*

ABSTRACT

Medical branches at formation headquarter and certain hospitals have taken into use Personal Computers (PCs) for data entry. Military Hospital Secunderabad has been progressing Project DHANWANTARI which is an on line medical information system. The type of network is host based to be developed into a Local Area Network (LAN). This article deals with concept of area networks and future scenario pertaining to computerisation of Armed Forces Medical Services (AFMS) hospitals.

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Introduction

Computers have been in use for last 20 years in various spheres of human activity. Today computers have almost taken over the tasks on which human beings were required to spend hours. Any big organization improves its performance by dedicating repetitive jobs to the machines like computers, thereby saving the manpower for intellectual activity, as well as for shedding the non essential manpower; improving the efficiency as well as the economy of the organization. The manpower of AFMS is highly trained for carrying out the technical functions related to the role of the organization. It is also true that same manpower is perforce spending huge number of man hours in documentation of routine and repetitive nature. This clearly brings out that there is a scope for introduction of machines like computer to take over the mundane and repetitive tasks from human beings so as to improve the efficiency of the organization as a whole.

Present Status

Awareness regarding capabilities of a computer is existing in AFMS. Individual organizations like hospitals and training centres have acquired PCs of varying capacity to suit their requirements. The computers today are being used for generating nominal rolls, preparing pay bills, loading

inventories and more commonly as an upgraded version of an electronic typewriter. In hospital atmosphere it is necessary to store patient related data in computers and to make it available by retrieval to clinicians on real time basis to improve patient care. This aspect is sadly lacking so far.

Project "DHANWANTARI"

Military Hospital Secunderabad is the first Armed Forces Hospital to have addressed the needs of data storage pertaining to patients, its retrieval and availability of the data to clinicians on real time basis. Project "Dhanwantari" was started in Oct 94 with a view to establish a LAN and to develop its own software based on felt needs. The over all composition of the project and its progress are worth examination.

Hardware

Hardware in Project Dhanwantari is comprised of a central server with a backup server and 18 terminals. The number of terminals is expected to be increased to 60 so as to ensure availability of terminals at each place of work including stores and administrative area.

Software

Software comprises of two types: The basic software is the operating platform comprised of

*Commandant, Military Hospital Secunderabad 500015

operating system and RDBMS. In project Dhanwantari operating system is SCO UNIX and the RDBMS is Oracle 7.1, Forms 3.0. Other softwares loaded over the operating platform are the application software for the users and are being developed in house.

Application softwares

So far 11 modules integrated in one application software has been taken into use. The response of users to these softwares is gratifying. Number of additional modules dealing with some clinical areas and administration are still to be developed. Existing software can be made available for trial by other hospitals if they are in possession of a PC of adequate capacity and operating platform.

Skinware

Skinware, refers to the technically qualified manpower, generally comprises of software experts, hardware experts and communication experts. Generally software team is largest and comprises of analysts and programmers. These categories are generally not available in Medical Corps and hence this requirement has to be met out of trained manpower available from other Corps. There are small number of medical officers who have had basic training pertaining to computers and some of them have acquired advanced knowledge in the subject with capability to develop small and simple programmes. These personnel are required to be inducted into LANs already in use and under development. It is also necessary to assess performance of these trained personnel over last few years to earmark them for suitable employment commensurate with their skills.

Training

Training is required to be imparted to all the technical categories of Medical Corps so that they can function as data entry operators in LANs to be established in hospitals as well as other establishments. It is necessary therefore, to establish a faculty of computer application in training institutes like Armed Forces Medical College. Training facilities created within the Corps will ensure availability of large number of trained personnel who will use the terminals in the LANs without need for having a category as Data Entry Operator.

Saving in manpower resources

Introduction of computers will result into saving of manhours in repetitive tasks in documentation which will result in availability of existing manpower for increasing work load.

Infrastructure requirement

For maintaining a computerised network the infrastructure is required to be created; requirements are as under :

- a) Stabilised uninterrupted power supply.
- b) In house availability of key personnel to run the generator sets and maintain the power supply.
- c) Provision of uninterruptible power supply for essential installations.
- d) Air conditioners to be provided to all server rooms and other nodes/hubs where subsidiary servers are located.
- e) Availability of trained manpower specially for hardware and communication to cater for failure of terminals/printers and cable faults on day-to-day basis.

Local Area Network (LAN)

The term "LAN" indicates existence of a network in a geographically limited area like an organization within few kilometres distance.

Wide Area Network (WAN)

Wide Area Network implies communication between different networks/PCs over a large geographical area like State or Nation. Armed Forces Hospitals are spread out all over the country and in case they are networked the network will be known as WAN. Communication in WAN can be established by making use of existing communication channels.

Policy Formulating Cell

Directorate General of Armed Forces Medical Services have established the policy planning cell designated as "Health Care Networking Committee" for important policy decisions on matters such as improvements/changes in available softwares, and coordination of software development in areas such as administration, accounts, statistics, medical stores etc. This cell has also undertaken the task of phased computerization of hospitals of Armed Forces.