

Computer and Medicine

Magar A¹

¹Intern, Kathmandu Medical College

"Just altering the Bard's famous line to the dilemma that you are probably facing. Should you buy a computer or not? This Section focuses on the advantages of this tool to the medical profession and how it would change your life. But only for the better..."

For a long time now, you have probably been hearing about the advantage of using computers in your medical practice, but haven't made that crucial decision yet. Have you ever wondered why? Why this paranoia? Why this dislike for a tool touted as the future of every industry, the medical field included? Is it because it is prohibitively expensive? Or are you put off by difficult and unfriendly commands? Is the idea of typing unappealing? Or is it that the current medical teaching and practice does not expose doctors to computers?

Computers that are available today are not what they used to be a decade ago. Machines are affordable now and you can avail of any of the financing schemes in purchasing one of your choices. Today, software is user friendly, operated through icons on screens that don't require one to know typing. Using computers to communicate and to manage day to day affairs is as simple as child's play. In fact, computers have already found a place for themselves in laboratories and testing centers. CT Scan and Magnetic Resonance Imaging are tools without which specialists almost cannot make a diagnosis; with a computer, a doctor can make his clinic more efficient and effective in the business of health and patient management. How is that done? Read On.

Practice Management

In private medical practice, a lot of time is taken up by paper work with accounts, billing and writing down appointments, messages and prescriptions. Consider the present scenario. A patient calls the doctor for an appointment. He puts him on hold to check with the receptionist about a free slot. The receptionist is busy billing another patient. She keeps that person waiting to

check the fat appointment schedule book. The doctor has wasted his own time as well as his patient's his receptionist's and the client's time. Apart from all this inconvenience, he has tied up his telephone line, the vital lifeline to another patient.

Cut to a sleeker, efficient clinic after a computerized network environment is in place. In response to his patient's request, the doctor looks up the computer on his desk to check his appointment schedule, and fit him into a free slot. He enters the new appointment into his computer immediately so that his receptionist can keep track of the record on the office network.

In the waiting room, on the computer display mounted on the wall, there is a presentation running about the myths and facts of diabetes. There is another terminal from where patients or staff can access their personal records. Since information access is so easy, it inspires confidence in the patient about his doctor's professionalism and the loyalty factor in the doctor's practice increases manifold.

When the doctor actually meets the patient, he keys in his records as he examines and talks to him. He writes out an electronic prescription to ensure speed and accuracy. He compares the suggested medication to the patient's drug history to ensure total compatibility. Software available helps in better decision making as it can suggest both generic drugs as well as particular brands. The pharmacist is also happy to find a computer generated prescription more legible compared to the famous doctor's scrawl!

Correspondence

Dr. Angel Magar, Intern,
Kathmandu Medical College, Sinamangal.
E-mail: Ang1el@hotmail.com

Available Software

How and where can one find tools to achieve this level of sophistication and efficiency? There is plenty of software available on the market shelves to aid the doctor in computerizing his work. The software range from pharmacology to diagnostic tools to clinic management and come with training manuals and a computer based tutor. Though the software is also updated with new features on a regular basis, the buyer is allowed upgrades at a nominal cost. There is a little something for all the modern demands of medicine.

Diagnostic software of today has extensive differential diagnosis database, search through every possible diagnosis and print results immediately, with high accuracy. They allow you to enter the most important attributes like symptoms, laboratory finding, X-Ray and ECG results, then list out all the diseases for you to review and rule out.

Available pharmacology software allows keeping a check on interactions of up to 20 drugs at a time. They provide you the spell check feature and search by generic as well as brand names. Some of this software gives drug information on IV admixtures and nutritional products too. They also have a tool for writing prescriptions electronically and for storing patient profile with records of drug allergies.

The clinic management software of today help you maintain patient particulars and history, print patient statements on plain paper or pre printed forms, have appointment schedulers to keep track of appointments in a simple manner, and keep track of the payments that the patient owes you.

Educational software for employees can help educate clinical support staff and they can pace their learning according to their schedules. For example the laboratory technicians can use software to educate themselves on how to avoid infection spread through contact with body fluids. The software also does the testing and evaluation of the course. There is software for medical students, which contain a huge database of test questions and help clear doubts easily, without having to sift through huge medical volumes for the right answer.

The Internet Factor

You might want to buy software right away, but are unsure if it would match the work culture in your clinic. What do you do? Well, the Internet comes to your rescue. You can go to the company website and download a free trial version of the software, no strings attached. If you like what you see, you can place on order. That's only one of the many facilities that the Internet offers.

With the advent of the Internet, you could take advantage of technology and improved communication prospects. You can share patient records with your colleagues for case studies, expert opinions, learning and teaching. You can keep in touch with your peers through e-mails a fast, cost-effective means of communications by which you can send information with attachments of medical records and patient summaries.

On the Internet, there are mailing lists that send out common message to their member's everyday. They also send replies to these messages to their members. This process goes on through the day and a healthy e-mail discussion takes place on the topic of the day. There are also newsgroups and Web rings of which you can become a member to gain access to path-breaking information immediately. At interactive patient Websites, you can simulate a patient encounter – that is you can meet a virtual patient. Based on the medical history available to you of the case at the site, you can make a diagnosis, formulate a treatment plan and submit it. After evaluation of the answers, you get a feedback about the accuracy of your medical skills. This is especially enlightening for medical students.

Medical books are also now available in their full glory in modern, online versions. You can search for any term in the Web site on which the books are present, and get instantaneous answers to your query. The latest medical journals are also available in online versions are extremely useful in preparing for thesis, refreshing memory and answering tough patient queries.

You can post your resume online and might just get that dream research position that you would give your right arm for or else, you could chat with fellow medical practitioners and consult on that rare case which you came across in your clinic today. You can join online discussions on

particular topics on the Internet, hear what others have to say and impart your own views, just as you would at a seminar. Your own views, just as you would at a seminar. You can also place yourself on the Internet and carve a niche for yourself on the booming cyber-world. Just get a Website designed and host information about your health-care service on it.

Fields of Medicine

New that you are getting familiar with how computers can help you out on a personal and professional level, lets discuss the use of computers for the common good of medicine in general. Computers have already revolutionized some of the traditional fields of medicine, such as radiology, and there is lot of research being done to use computers in various other specializations of medicine. Computer-aided diagnosis is a developing area - here the machine analyses images and records in more ways than what meets the human eye and offers an automated second opinion. Computer aided surgery enhance the possibilities of remote surgery- operations on patients lying elsewhere where form the expert doctor. By creating and virtual model of the organ to be operated upon, it is useful in planning an operation to be performed on a particular patient. Hospital systems are being designed so that there is a computer in every nook and corner of the hospital and these replace human beings in daily tasks, operating at higher levels of accuracy and these replace human beings in daily tasks, operating at higher levels of accuracy and efficiency. But it is too early to reveal all this to you.

How do you gain?

In spite of all the extraordinary things that a computer can do, it will help to keep in mind that the computer is a tool and not a religion. Nothing can replace a doctor's intuition and decision-making. Computers can only support and help the doctor can concentrate on taking his profession of managing health many notches upwards. A computerized environment helps a doctor work efficiently and effectively and enables him to give consistent care and advice, thus increasing the patient's confidence in his abilities.

This is the era of professional care management where cost-effectiveness and time management is of utmost importance. After all, a doctor or caregiver's job is to manage health and not paper. With all the new computerized tools available today, one can give anticipatory guidance to the patient in a timely fashion and enhance patient knowledge to a level where the practice becomes efficient in terms of term and money.

With networked computers firmly in place many applications of life, it is only a matter of time before hospitals and clinics totally embrace this technology, The Internet has the ability to break down the conventionally old barriers to information access, communication and human interaction.

So, now you have got enough reason to make up your mind about a question that you'd been putting off for long - to be computerized or not?