

## EDITORIAL

## THE PROMISE OF TELEMEDICINE

**Pathmanathan R and Anuar Zaini Md Zain**

*Dean's Office, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur*

Telemedicine is the use of telecommunications technology to provide care through the use of interactive audio, video and data communications. It is not a new concept and indeed, health care professionals have been using the telephone for years to carry out these services. The technology has been put to good use since the late 50s in the Nebraska Psychiatric Institute, where patients and doctors were able to interact over a closed-circuit television link. Since then, although there have been several telemedicine pioneering efforts all over the world, its impact and far-reaching uses are only recently being recognised locally. Today, this eclectic field is rapidly pushing the forefront of medical technology and changing the way health care will be provided into the next century.

The twin key applications of telemedicine are in the provision of various medical services/ applications and in education. Current medical applications may range from clinical consultation via videoconferencing to aid in surgical procedures, to psychiatric evaluation or interpretation of an NMR image. Innovative yet practical applications are being developed everyday; for instance, a cardiac patient can be monitored by wireless credit-card sized sensors; still photos of skin lesions may be sent by a family doctor to specialists by simply plugging a portable camera into a phone line. The list goes on.

Services such as the Pennsylvania HealthNet allow subscribers into surgical theaters and other informational sessions. Health education programmes could take knowledge right into schools. Health care professionals can receive specialised training via teleconferencing, or even the Internet. Although current bandwidth constraints on the Internet render real-time videoconferencing inadequate for any kind of meaningful remote diagnostic facility, advanced image compression and streaming video techniques may make this a reality sooner than one might expect. Potentially therefore, a medical practitioner might receive advice and training

from anywhere in the world, right there on his desktop.

State-of-the-art telemedicine means live, full color, two-way video, two-way audio communication of information in diverse medical specialties (radiology, pathology, dermatology, cardiology, psychiatry) as well as for miscellaneous other purposes (consultations of all forms; research; credentialling; even administration, medical records and billing). Telemedicine moves information instead of people.

There is increasing demand for health care reforms worldwide and locally, to provide quality service to underserved populations and reduce health care costs. Telemedicine has found wide acceptance as being cost-effective in the dissemination of medical information as part of continuing medical education (CME). With suitable infrastructure in place, physicians and family practitioners in isolated and rural settings can interact with experts, and through discussion of actual cases, benefit by upgrading knowledge and skills; subscribers to a telemedicine service may also avail themselves of the most comprehensive medical facilities and experts, regardless of geographic location; access to the highest possible quality of medical diagnosis is available, sometimes within a matter of hours; the technology allows a rural hospital to enlarge and enhance its coverage; and finally, it is reasonable to assume that in the long term, health care costs may be reduced by diminishing or even eliminating the need for patients to travel over great distances ~ early and precise diagnosis can lead to better treatment planning and eventually, to reduced hospital stays.

The development of an efficient communication network and decreasing costs in the enabling technology has prompted the Faculty to embark into this exciting area. The need to cater for an increasing population of off-campus postgraduate students enrolled in the clinical Masters' programmes, and the drive to market Faculty ex-

expertise have been powerful motivating forces.

A telemedicine pilot project with Syarikat Telekom Malaysia will commence shortly, establishing initial links via a leased 2-megabit connection with our satellite campuses, initially with Hospital Tengku Ampuan Rahimah in Kelang and shortly thereafter with Banting Hospital. The project timeline incorporates initiatives for offering consultancy and remote diagnostic services, provision of CME programmes and distance-learning programmes.

Telemedicine brings with it unique issues ~ interacting via computer seems impersonal to many. The questionable issue of the privacy of patient records and possible threats to the sac-

rosanct doctor-patient relationship creates an environment of uneasiness and caution in society, and particularly so in the medical community. Even in the US, issues of accountability and guidelines for avoiding "telemedical malpractice" are still being worked out, and legal precedents have not been established. Needless to say, all practitioners must be vigilant and be constantly mindful of these problems so that confidentiality of patient records is safeguarded.

We are optimistic that the Faculty foray into this promising area will prove to be enlightening and successful, and are hopeful that beneficiaries will include consultants, rural health physicians, medical personnel, students, educators and of course, patients.