

## Telehealth Flagship



# 'Prevention is better than cure'

That is the golden advice that the MSC Telehealth Flagship Application is following in its commitment to creating the system and environment that will promote a healthy lifestyle for Malaysians as well as allow the public more control over their health and treatment.

## A wellness effort

As one of the MSC Flagship Application projects, the Government of Malaysia has taken the initiative to incorporate Telehealth into the healthcare delivery system of the country. Through this vision, the Government is committing itself to develop a nation of healthy individuals, families, and communities, and enhancing the quality of life of all Malaysians.

Telehealth aims to maintain people in the 'wellness' programme and is not merely about technology. Instead technology is used as one of the critical tools in the healthcare processes, which focuses on the individual to achieve greater access to health information, education and advice. It also empowers individuals and their families together with the communities to manage their health in partnership with healthcare providers. It is anticipated that this flagship will maintain a significant role of developing the health system of the future that balances the importance of remaining well. This will be achieved by giving attention to the need to prevent and treat diseases and disabilities, which is focused on the wants of patients and families.

### A new paradigm

Telehealth aims to go beyond the traditional delivery modes of healthcare delivery and instead, provide greater access to better and higher quality healthcare to the people of Malaysia. This will be achieved by taking advantage of existing multimedia and information technologies and developing new technological solutions.

This Flagship Application will also support the development of Malaysia into becoming a global hub for Telehealth services, products and education.

Linkages made with other Flagship Applications like the Government Multipurpose Card (GMPC) and e-Government applications will certainly enhance the delivery of health services and lead to more effective use of resources throughout the country. Ultimately the future healthcare system will be supported and strengthened by Telehealth.



*The Telehealth Flagship aims to empower us to manage our health in partnership with healthcare providers.*

#### **The four pillars of Telehealth and their developments**

As with other flagship applications, Telehealth also has its own set of pilot applications that are to be implemented at a few selected healthcare centres in the country over a five-year period. The applications that have been developed so far are tested at several sites mainly outside the MSC.

The selected pilot project sites for end-user devices near the MSC area are Kuala Lumpur Hospital, Kajang Hospital, Seremban Hospital, the healthcare centres in the respective districts, and five additional primary healthcare centres existing within the MSC region. The selected pilot project sites further away from the MSC area are Ipoh Hospital and the healthcare centres in that respective district. The selected sites were used as a test bed not only for the applications that were developed, but also for infrastructure and other constraints, including behavioural.

The four pilot applications that are designed as an integrated whole to benefit the people through Telehealth are;

#### **1. Mass Customised/Personalized Health Information and Education (MCPHIE)**

MCPHIE's ultimate aim is to produce and deliver quality health information and education to the individuals by utilising the information technology especially multimedia and telecommunication. This application will provide health information, education and advise that is customised and even personalised for each individual. It involves the sourcing and development of information and educational materials followed by the construction of a database.

This component of the Telehealth flagship allows the public to obtain information and updates on areas of health of their specific needs. All they need to do is to register themselves on the site (<http://www.telehealth.com.my>). Initial topics include cardiovascular health, cancer, injury prevention, and antenatal/perinatal health. It is planned that four new topics will be introduced each year and existing topics will be updated regularly. The MCPHIE services will be available via the Internet interactively, and also via healthcare providers or call centres.

To date, both Phase I and II have been completed with more contents for MCPHIE and currently the portal set-up is hosting quite a number of health topics. This, according to Dr Muhammad Arif bin Mohd Hashim, the head of Telehealth Unit, Ministry of Health (MoH), is a repertoire of content available for public through the Web site. "In the long run, Malaysians will be able to take control of their own health through MCPHIE," he added.

The Ministry is expecting that by end of this year the health risk assessment will be available online and allow an individual to initiate his or her own self-assessment. Based on the outcome of the assessment, targeted or personalised information on individuals and education will be delivered.

"It is hoped that with this particular system, the public will be self empowered, carry out their own assessment and will be able to determine their illness. If it a simple ailment, then they would be able to take action on their own before visiting the healthcare providers," said Dr Muhammad Arif.

## 2. Continuing Medical Education (CME)

Through CME, the government intends to provide continuous up-to-date knowledge and skills to healthcare providers by keeping current on the latest medical advances, regardless of their geographic location. The sourcing and development of relevant training modules are followed by the construction of a database.

The CME pilot project also concerns the provision of CME through distance learning methods for healthcare professionals in Malaysia using appropriate multimedia information technology. It is envisioned that healthcare professionals can access training modules, lectures via videoconferencing, formal distance learning programs, online journals and textbooks, and databases containing international knowledge, explained Dr Muhammad Arif. "With this available, the healthcare professionals no longer need to leave their current positions to attend the full time courses available at universities and training colleges."

Another one of the services of the CME application is to provide virtual resources for the healthcare providers as it is critical for them to continuously upgrade their knowledge and skills. To this end, the portal site, [www.telehealth.com.my](http://www.telehealth.com.my) have to date contained about 48 journals. Registration at portal site for online is also on.

Furthermore, through CME, the modular distance learning (MDL) is targeted to be ready and offered to the healthcare provider before the third quarter this year, revealed Dr Muhammad Arif. "It is one of the CME application to provide opportunities for all healthcare providers irrespective of where they serve to acquire and update their knowledge in healthcare."

In addition to that, the Formal Distance Learning Programme (FDL) will also be offered to the healthcare providers who intend to do their Masters or specialised programme. To be delivered by 2003, this programme will help shorten the duration of institution-based training for formal courses.

"The portal will provide a packaged knowledge content of reasonable depth and breathe of topics on any courses offered by MOH or any related training colleges as well as programmes offered by universities. However, the healthcare providers will still need to attend their classes for practical sessions as the information provided will only be on the theoretical components," Dr Muhammad Arif explained.

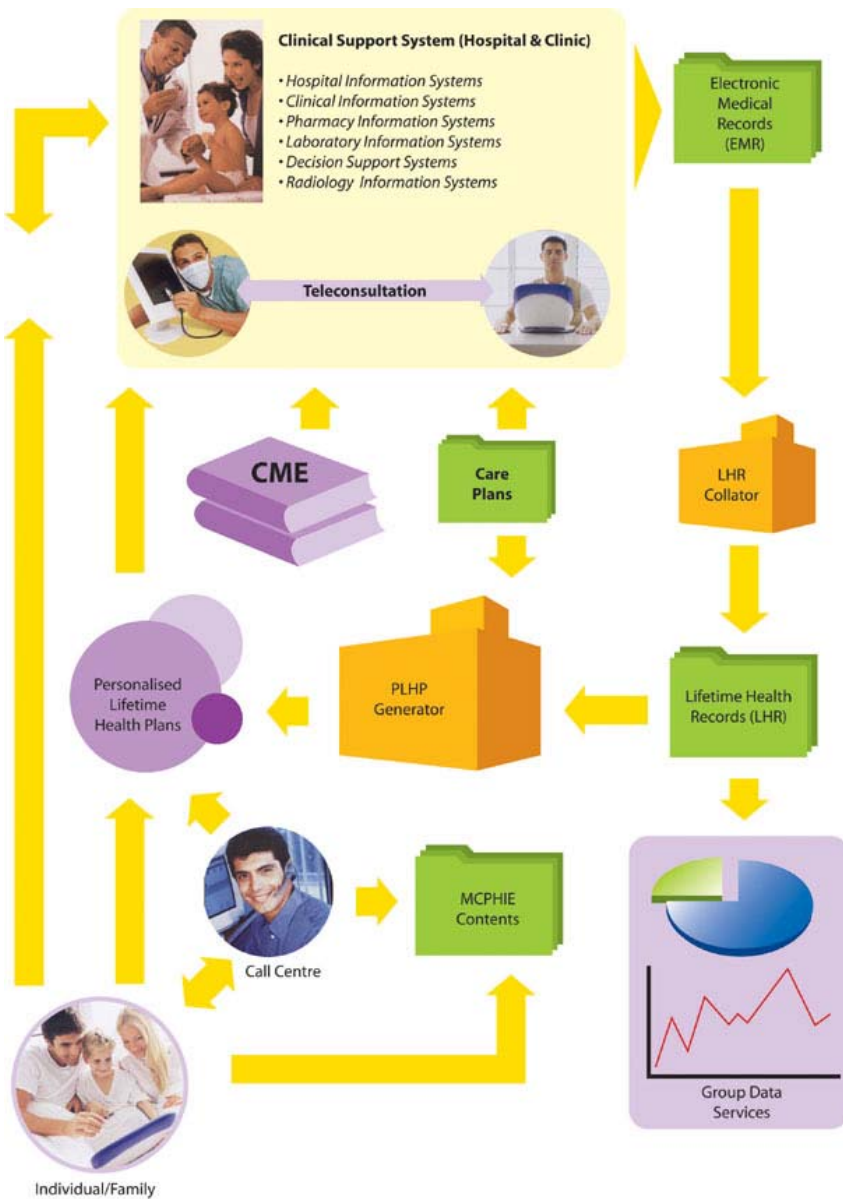
CME will also provide a virtual environment for the community of healthcare professionals with common interest to interact and conduct professional discussions electronically by utilising collaborative tools like whiteboard, e-mail services and also electronic discussion groups or chat programmes.

## 3. Teleconsultation

The Teleconsultation application's primary objective is to provide specialist care to remote health clinics and health centres where there are lack of specialists. This is done by connecting a combination of healthcare providers and patients in a multipoint manner (teleconsultation links) to share opinions, provide support, and deliver care to patients at home or close to their homes.

Patient records (Lifetime Health Plan) will be available on demand by any authorised caregiver, from any location, any time of the day and this will go

Diagram copyright of Dr Muhammad Arif Mohd Hashim, Telehealth Unit head, Ministry of Health.



**INTEGRATED TELEHEALTH SERVICES**



*The latest developments in medicine can be easily shared among health practitioners regardless of geographical barriers.*

beyond videoconferencing, as it will integrate the transmission of digitised patient records including diagnostic images in real-time or in store-and-forward mode.

"It is hoped that this will help to improve the equity of access to quality care, especially to under-served areas and realise the goal of care closer to the home," said Dr Muhammad Arif.

To date, the developer and implementer of this application, World Care Health has linked 41 healthcare facilities, which are now fully commissioned across the country. These sites are currently forwarding live cases across Malaysia, 24 hours a day, delivering precise and cost effective healthcare solutions.

Furthermore, there are already about 800 Teleconsultation referrals that were recorded through this system for various disciplines for live cases, which include teleradiology, teledermatology and telecardiology.

"In addition, the Change Management - Administrative Protocol Workshop are also currently conducted regionally and according to specific subject matters to allow a smooth and seamless transition for the healthcare providers involved," he added.

#### **4. Lifetime Health Plan (LHP)**

Of the four applications in Telehealth, LHP is the most complex and comprehensive. This application will provide a personalised proactive and prospective lifetime health plan to achieve a continuum of care to keep the individuals and in

the highest possible state of health by trying to reduce premature diseases and disabilities.

The LHP is a healthcare guide based on the lifetime health record (LHR), a summary of an individual's lifetime health record that is built during the times that the individual visits his healthcare provider.

It is anticipated that the creation and integration of a lifetime health record will develop a personalised lifetime health plan for each and everyone of the country's population. This interactive plan is suppose to maintain updated medical files for each individual and remind them when routine treatments, such as immunisations or regular checkups, should be scheduled and conducted. This move, said Dr Muhammad Arif, would eliminate the time required to redo patient records whenever they meet different doctors or medical facilities.

There will be three phases involved in implementing the LHP application starting from 2001 for Phase 1 and completed by 2005 with Phase 3. At present, the implementation progress is at the 2A moving into 2B phase. "Majority of the implementation processes that are taking place involve the enhancing of the current system with additional information as requested by the users."

To date, LHP has most of the sites installed with equipment - currently online at Kajang Hospital and seven health clinics in the Ulu Langat District; the Seremban Hospital and four of its health clinics; and the Kuala Lumpur Hospital and its 13 health clinics. As for the Ipoh site, the implementation is expected to start end of September 2002.



*Gayah Gulam Haidar, senior manager of Telehealth Flagship, MDC.*

There are three sub applications in the LHP;

- Clinical Support System (CSS) - the effort required to compile Electronic Medical Records (EMR) for all patients. Among the components of the CSS are the hospital, clinical and pharmacy information systems that record specific health information about the patient. Eventually, all hospitals will use a standardised application to facilitate the sharing and transfer of information between hospitals and various health centres.
- Healthcare Information Management and Support Services (HIMSS) - the group to maintain the patient information database. Resulting statistical data can be used to formulate national health policies and plans, forecast outbreak and penetration of diseases, and provide data for medical research.
- Personalised Lifetime Health Plan (PLHP) - the application that creates the plan based on patient data. The antenatal, 0-7 months, 7-12 months programmes are targeted to start in Nov 2002 while the programme for adulthood will start by July 2003.

#### **What's next?**

According to MDC's senior manager for Telehealth Flagship Gayah Gulam Haidar, the latest development of the Telehealth project is the integration of the Telehealth applications with the other flagship applications. At present, the pilot site hospitals are using MyKad to register patients and the process of downloading health data on to the smart card is about to be implemented soon. Another integration work is with the Smart School project, where students'

health and dental data to be captured and used by the schools to maintain healthy individuals in the schools. For the civil servants whose data are in the HRMIS (Human Resource Management Information System - an Electronic Government project), discussions are ongoing to facilitate their visits to the hospitals and health centres, in terms of producing electronic Guarantee Letters (GL) or GL imbedded as part of the MyKad application.

She further explained that the applications and products that are

developed have to contribute to the users' Buy-in. As such, though many of the applications have been implemented, the 'versioning' of these applications have to be undertaken by taking into consideration the users' input.

"In the essence of time and fast-tracking of project, the challenge is for us to prove that the applications and products developed are available and can be used in the rollout plans of the Ministry of Health. In fact, early evaluation of the project is crucial to ensure sustainability and viability of the project," added Gayah. "An important factor in realising the Telehealth vision is that more hospitals should be installed with the applications and this again requires us to speed-up the rollout plans."

Whilst it is important that the Telehealth project be rolled out, new, enhanced technologies must be incorporated to make the Telehealth project more receptive to the current environment. Home monitoring devices, establishing Call Centres and new innovative solutions such as biotechnology solutions in providing continuous care to individuals and the families are being planned for the rollout.

With regards to promoting Telehealth to the public, Gayah elaborated that efforts are being carried out at the pilot sites. Awareness programmes such as talks and seminars are being conducted at the Kajang, Seremban and Kuala Lumpur hospitals since August 2002. Posters are hung in open areas at the sites for the public understanding.

"This is a part of the building-up awareness efforts towards the IAP meeting. More aggressive approach will be taken after the meeting to address the nation by using the mass media." ●