

## HISTORICAL PERSPECTIVE

# Hospital Universiti Sains Malaysia (HUSM): 25 Years Of Excellent Service

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### Abstract

Our Hospital University Sains Malaysia (HUSM) was given the Cabinet approval to exist under the Ministry of Education on 23 November 1982. The Deputy Prime Minister during that period, Yang Berhormat Tun Musa Hitam announced this after the cabinet meeting was held together with the presence of the Yang Berhormat Ministers of Health; and Education, Director of the Public Works Department and the Implementation and Coordinating Unit, Prime Minister's Department. The first patients moved in on 14 March 1983 and the inauguration of HUSM was done on 26 August 1984 by the Duli Yang Maha Mulia Tuanku Ismail Petra Ibni Al-Marhum Sultan Yahya Petra, the Sultan of Kelantan Darul Naim. HUSM celebrated its 25th anniversary at the Dewan Utama, USM Health Campus on the 15th December 2008 which was inaugurated by Yang Berhormat, Minister of Higher Education Dato' Seri Mohamed Khaled Nordin. USM's Vice Chancellor Professor Tan Sri Dato' Dzulkifli Abdul Razak, Chairman of the USM Board of Directors Tan Sri Dato' Haji Dr. Ani bin Arope, Health Campus Director Professor Dato' Dr. Mafauzy Mohamed, former Campus Director, Dato' Prof Mohd Roslani Abdul Majid, the current and previous Hospital Directors and Deputy Directors since 1983 were present. The achievements of HUSM since its establishment and its vision to fulfil the University's Accelerated Programme for Excellence (APEX) are elaborated.

Kelantan Darul Naim is one of the 14 states of Malaysia. It is located on the East Coast of Peninsular Malaysia, facing the South China Sea, with an area of 14,922 square kilometres, representing 4.4% of the total area of the entire Peninsular Malaysia (Figure 1).

Historically, the state of Kelantan devoted itself to cultivating Islamic knowledge. Huge numbers of 'Pondok' institutions which were nearly similar to the madrasah established in certain areas of the state.

This phenomenon led to the foundation of famous religious teachers or ulama that actively promoted Islamic education. Because of the importance of Islamic learning there, Kelantan was nicknamed Malaysia's "Serambi Mekah" (Figure 2).

During that period, one Haji Mohd. Yusoff Ahmad, better known as "Tok Kenali" by many, was born in Kampong Kenali, Kubang Kerian Kota Bharu in 1870 (1287H). Kubang Kerian, then a small village located six kilometres from Kota Bharu, started to grow in 1983 when a federal government project established a health campus there.



**Figure 1:** Kelantan Darul Naim on the map of Peninsular Malaysia.



**Figure 2:** The centre of Kota Bharu, Kelantan, or better know as the Istana Balai Besar square



**Figure 4:** First director of HUSM (1983-1992) Prof. Dr. Kamaruzaman Wan Su

Kubang Kerian became known when the Health Campus of Universiti Sains Malaysia (USM) was developed in 1983 on 72.84 hectares of paddy land that had been previously owned by poor farmers. This led to the beginning of a new era of health sciences in Kelantan. It gradually came to be a reality over a period of twenty-five years.

The Health Campus of Universiti Sains Malaysia (USM), an establishment of higher learning in medical science, became known as the Hospital Universiti Sains Malaysia (HUSM) in 1983 (Figure 3). HUSM has been headed by several directors, named as follows (Figure 4 to 6) :

- Dr. i. Kamaruzaman Wan Su (1983 to 1992)
- Dr. ii. Haji Ramli Saad (1992 to 2005)
- Dr. iii. Zaidun Kamari (2005 to present)

The director is assisted by three deputy directors and the heads of the various departments and units. At present, 2,672 staff members work at HUSM in management and clinical disciplines. A record of excellent community service has made



**Figure 3:** The centre of Kota Bharu, Kelantan, or better know as the Istana Balai Besar square



**Figure 5:** Second director of HUSM (1992-2005) Dr. Haji Ramli Saad

the name of HUSM better recognised in the local community. Based on this fact, HUSM is regarded as one of the best teaching hospitals in Kelantan and the East Coast. Furthermore, with new approaches to improve services, new specialist clinics have been developed to provide better treatment to the East Coast community.

The mission of Hospital University Science Malaysia, “to provide new patient services and thus become a full-fledged medical centre that provides only excellent services using the latest medical technology breakthroughs”, will become a reality soon.

To achieve this goal, HUSM (Figure 7) has taken proactive steps in order to be known as:

- 1) A referral hospital that provides a higher level of medical science, dentistry and general health services to the public.
- 2) A teaching hospital that provides learning and research facilities in the fields of medical science, dentistry and general health.



**Figure 6:** Director of HUSM (2005-present) Dr. Zaidun Kamari

HUSM provides treatment services to its patients based on dedicated administration and management approaches using high quality services, a commitment to teaching and research, optimal financial strategies, core human resources values, and sensitivity to the social needs of the East Coast community.

In order to compete at the international level, HUSM has initiated a few centre of excellence projects, such as Cardiology and Cardiothoracic Surgery, Burn and Reconstructive Surgery, Neurosciences, and Tissue Banking.

The Cardiothoracic services were established to help the patients who needed heart and lung surgery, as well as to function as a cardiothoracic surgical resource centre on the East Coast of West Malaysia. It also provides an invaluable learning exposure to heart and lung surgery to the medical fraternity (undergraduates and post graduates students in biomedical sciences) and the nursing students in line with HUSM's functions as a teaching hospital.

The services that are available in this unit are open-heart surgery (such as closure of septal defects), valve replacement and coronary artery bypass grafting, closed-heart surgery with ligation of patent ductus arteriosus, pericardectomy, lung surgery, and mediastinum growth removal. HUSM provides invasive and non-invasive cardiology services such as echo cardiogram and cardiac+angiogram in the Invasive Cardiology Laboratory where cardiologists are able to perform invasive procedures like coronary angiogram and coronary angioplasty (Figure 8). HUSM has also established special units to cater patients with heart problems: the Cardiac Intensive Care unit (CICU), providing intensive care post surgery, and the Cardiac High Dependency Unit. The CICU



**Figure 7:** Officiation of the Hospital Universiti Sains Malaysia on 26th of August 1984 by the Duli Yang Maha Mulia Tuanku Ismail Petra Ibni Al-Marhum Sultan Yahya Petra.



**Figure 8:** Officiation of the Hospital Universiti Sains Malaysia on 26th of August 1984 by the Duli Yang Maha Mulia Tuanku Ismail Petra Ibni Al-Marhum Sultan Yahya Petra.

is headed by both cardiac medical and surgical specialists and is supported by paramedical staff. At this moment there are 2 perfusionists, 5 surgical nurses and 21 CICU nurses (10 cardiac-trained nurses and 11 nurses undergoing in-house training). In addition, HUSM had a Memorandum of Understanding (MoU) with the National Cardiology Institute (IJN) regarding technical equipment as well as progressive paramedical training and expertise training.

The first three patients who underwent successful cardiothoracic operations were:

- 1) Aten Gemok, 19 years old, and Puan Hamidah Mat, 37 years old, for closure of arterial septal defects
- 2) Encik Azahari Zakaria, 47 years old, for coronary artery bypass surgery.

The operations were headed by a cardiac surgeon from IJN and HUSM'S cardiothoracic surgeon, Prof Madya Dr Mohamad Ziyadi Haji Ghazali. These success stories started a new era of surgery for local patients from the East Coast. The current types of surgery performed are:

- i. Coronary artery bypass grafting
- ii. Valve replacement
- iii. Closure of septal defect
- iv. Closed-heart surgery
- v. Open-heart surgery
- vi. Thoracic and mediastinal surgery
- vii. Trauma (Heart/Lung)
- viii. Ligation of patent ductus arteriosus

HUSM hopes that these services will make their mark and that HUSM will thus become a referral centre for those who need expert help in heart and lung surgery, as well as being one of the training centres for cardiothoracic surgeons in Malaysia.

## Neurosciences

This project was initiated in early 1984 and became a second project with the following objectives for HUSM:

- 1) To be the centre of academic excellence in the field of Neurosciences.
- 2) To be a resource centre offering high-level, neuroscience-based medical and surgical services.
- 3) To be a leader in neuroscience research and innovations at the national and international levels.
- 4) To be a training centre in various biohealth science fields such as basic, applied and clinical neurosciences including pain and spinal surgery (neurology, neurosurgery, neuropsychology and neurosciences) (Figure 9 to 10).

With the establishment of the Neuroscience Unit in 2001, which became a department in 2004, HUSM has made history by becoming the first local university to offer a Masters in Surgery (Neurosurgery) program in 2001 and an Advanced Masters of Internal Medicine (Neurology) in 2007 with the cooperation of the Ministry of Health of Malaysia and other local universities. It has also



**Figure 9:** Neurosciences patients being managed by multimodality monitoring



**Figure 10:** Neurosciences Intensive Care Unit

offered MSc and PhD programs in Neurosciences since 2004. This department has been recognised as the most active unit in research, especially in the field of Traumatic Brain Injury, Haemorrhagic Stroke and Neuroncology in Southeast Asia.

As an active department in international research, it has contributed to studies such as CRASH, STICH, VITATOPS, ENOS, HAMLET, PERFORM, PROFESS and Rescue ICP study.

Majlis Kanser Negara (MAKNA) has chosen the Department of Neuroscience as a place to conduct research for a new brain cancer vaccine with the collaboration of University Putra Malaysia. In addition, the Department of Neuroscience was assigned as consultants for the Dewan Bahasa dan Pustaka, a body responsible and advancement of the Malay language in Malaysia, regarding neurosciences terminology.

Another project that proves HUSM to be an excellent hospital is the development of the Burn Injury Treatment Unit, under the Reconstructive Science Unit (Figure 11). This



**Figure 11:** Reconstructive procedure done in HUSM



**Figure 12:** Burn Ward

service was established with the objective to create a comprehensive healing program for burn victims and to return these victims to their communities in the highest possible physically, psychologically and socially functional state.

These services were incorporated into the Burn Unit.

- 1) Treatment for burn victims from the early stages of injury.
- 2) Continuous treatment by developing a network of long-term support, including rehabilitation.
- 3) A training centre for burn victim treatment procedures.
- 4) Preparing training and education for paramedics and the community in various aspects such as prevention, first aid, treatment, and recovery procedures.
- 5) Research into medical technology related to the management of burn cases.
- 6) Supporting activities for burn victims and their close relatives such as "Burn Camp" and "Burn Support Group".
- 7) Establishment of outreach services program and education for the community through fire prevention programs, fire treatment programs and fire awareness programs in schools.

The actions of PETRONAS have made HUSM proud. They sponsored the travel of patient Zawardy Abdul Latiff, who had serious third degree burn injuries, from Texas in the United States for follow-up treatments.

In its effort to create a successful unit, the staff has been sent to various other institutions to improve their skills and knowledge regarding burn victims' treatment and management (Figure 12).

These initiatives include:

- 1) Requests for fire treatment protocols from Hospital Universiti Kebangsaan Malaysia
- 2) Attachment of HUSM staff at the Fire Burn Treatment Centre in HKL
- 3) A study-visit program to Beverwijk Burn Centre, Amsterdam
- 4) Learning from the experienced staff at the Centre of Fire Burn and Reconstructive Surgery in Singapore General Hospital.

Stereotactic Radiosurgery is another strength of HUSM, and it has a multimodality treatment group which make it one of the better cancer treatment centres in the country today.

In May 2002, HUSM made history again when it successfully performed radiosurgery on "Head and Neck Cancer" using a mini multileaf collimator for the first time in Malaysia.

This excellent work by the HUSM units allows us to look forward to new level of service on par with other international medical centres throughout the world.

HUSM also offers an Out-Patient Service which consists of:

- 1) A Community Medicine Clinic that is open on all working days from 8:30 a.m. until 4:30 p.m.
- 2) A Specialist Clinic open from Saturday to Wednesday where patients are seen by referrals and appointments
- 3) An Accident and Emergency Unit that is open around the clock to attend to all kinds of urgent cases

As a teaching hospital and a referral centre, HUSM has undertaken the challenge to provide the best in-patient services possible. Relevant specialists who are also lecturers in the School of Medical Sciences, Dental Sciences and Health Sciences are appointed as consultants on all cases being treated in HUSM (Figure 13).



**Figure 13:** Hospital Universiti Sains Malaysia in 2009

HUSM has numerous important support services such as the Department of Radiology, the Department of Nuclear Medicine, and the different Diagnostic Laboratories and Clinical Departments. The Blood Bank supplies blood and blood components as well as other haematological tests and screening. The Physiotherapy Unit and the Haemodialysis Unit provide necessary therapies for certain patients. The Dietetics Unit prepares food for all in-patients and offers diet counselling services. The Laundry Unit ensures a constant supply of linen to the wards while the Housekeeping Unit is responsible for the cleanliness of all general areas in the hospital.

The Department of Pharmacy at HUSM is one-of-a-kind in Malaysia (Figure 14). Its services go beyond dispensing and therapeutic drug monitoring services. The department is also involved in the clinical pharmacy training of the pharmacy students in their final year at the university.

The Medical Records Unit handles the registration of all patients that seek treatment. (Figure 15). It also provides research facilities where access to patients' medical records for the doctors and medical undergraduates is provided. This unit is authorised by the National Registration Department to issue birth certificates for babies born in HUSM as well as death certificates. Moreover, medical reports for legal proceedings



**Figure 14:** Out-patient Pharmacy



**Figure 15:** Medical Records Unit

are also dealt with by this unit.

In addition, there are several facilities for patients and their families, (Figure 16 and 17) such as:

- 1) Desa Rakyat -Accommodation for patients' relatives/families at reasonable rates
- 2) A sports complex especially for the campus community, but available to the public on request
- 3) A bank and post office that provide both counter and automated services.
- 4) A golf course where membership is open to all health campus staff.



Figure 16: Desa Rakyat



Figure 16: Sports Complex

- 5) Town bus and taxi service – town buses service the campus while a taxi station is situated outside the HUSM main gate.

## Conclusion

Hospital USM began with a 36-bed in 1983 and now provides a 747-bed service. Over the past 25 years, it has achieved excellence despite being situated in the East Coast of Peninsular Malaysia. Over the course of the past few Malaysian Plans, HUSM has managed to be both a service and clinical research centre of excellence with the establishment of new buildings, services and units in the 9th Malaysian Plan. USM was selected as an APEX University on September 3, 2008, thus giving HUSM more responsibility for the health campus and USM as a whole to increase its impact and presence in the national and international fields of research and publication.

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