Malaysian Oncological Society

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Malaysia's Journey in Cancer Therapy

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Content

PREFACE

In 2016, the Malaysian Oncological Society celebrated its 50th anniversary. Its founding date, 6 January 1976, passed with little fanfare but it wasn't long before the realisation dawned that this event warranted some form of public record.

Not long after, an idea took root. Having come so far, as a society and as a medical speciality, it seemed appropriate to commemorate the milestone in a permanent way.

It was decided that a book be created to capture the contributions of pioneers, celebrate the achievements of past and present oncologists, and acknowledge the many allied health professionals and NGOs that walk this long and difficult journey against cancer.

After three years and the support and input of many individuals, combined with oversight from the Book Committee, this commemorative book is a small glimmer, a few drops in an ocean, that provides a glimpse into the many steps, decisions, collaborations, and successes that have led us to where we are now.

As we move forward into the next 50 years, we look forward to the promise of bigger and better things to come.

SYNOPSIS

The Malaysian Oncological Society marks its 50th anniversary with a commemorative selection of historical anecdotes, testimonials from pioneers and insights from academics, NGOs and many more. From the founding of Malaysia's first dedicated department of oncology to the nation's premier facility, the National Cancer Institute in Putrajaya, this book offers a small glimpse into how far the field of oncology has progressed while paying tribute to the many individuals, past and present, who have played a part in driving this highly specialised field ever-onward.

LETTER FROM MOS PRESIDENT

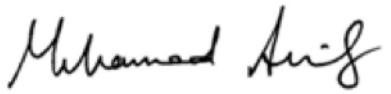
Greetings dear readers. Thank you for being part of our journey – the Malaysian Oncological Society recently celebrated its 50th anniversary hence we were presented with the perfect opportunity to look back and reflect on how far we've come.

Our reflection takes its form in this commemorative book you now hold in your hands. Just as Malaysia has seen many developments in the last five decades, we recognise milestones which have greatly impacted the way cancer is detected and treated in this country, from the setting up of Malaysia's first Institute of Radiotherapy, Oncology and Nuclear Medicine in 1968 to the formation of the National Cancer Registry and our state-of-the-art National Cancer Institute in Putrajaya.

As a society dedicated to enhancing knowledge and thus raising the bar on the treatment and management of cancer, we are privileged to work with an ever-growing membership and many respected allied health professionals. These peers stand with us as the medical line of defence against the scourge of cancer that is prevalent in Malaysia and across the globe.

We also take this opportunity to highlight the valuable experiences and many challenges faced by the nation's pioneers in this field, who worked tirelessly to lay the foundation of the services and infrastructure we enjoy today. We share some of their recollections in this book, and rededicate ourselves to make a difference in ensuring the wellbeing of our patients in every capacity.

In closing, we are immensely grateful for the support of our members and peers of various specialisations both in Malaysia and abroad. We now look to the future for more achievements such as the formation of a Chapter of Oncology in the College of Radiology, under the Academy of Medicine Malaysia. We hope that, in the years to come, a College of Oncology will be formed, enabling the training of more oncologists.



Dr Muhammad Azrif
President (2019-2021)
Malaysian Oncological Society

LETTER FROM THE BOOK COMMITTEE

The idea of a commemorative book was initially mooted by the late Dr Ahmad Kamal Mohamed when he was the president of MOS to document the development of oncology in Malaysia. Discussion to embark on this book was initiated whilst he was in office until his untimely demise. However, the rest of the committee of the MOS was equally keen to see this project through. When we embarked on this project to capture significant milestones and achievements impacting our profession, it was our hope to provide a glimpse of our humble beginnings in order for us to appreciate our collective accomplishments more deeply.

This commemorative book was conceptualised a few years ago and the journey has seen many bumps in the road, many of which relating to the necessary but overlooked importance of maintaining a central archive of materials.

As oncologists, our days are filled with clinical concerns, leaving little time to record events for posterity. This shortcoming became increasingly apparent as the book progressed, with most records from the early years of the Society being unavailable. In some instances, personal mementos and scrapbooks, together with oral recollections, were the only resources we had to call upon and we are privileged to have captured these precious bits of history within these pages.

From academicians and professors, to cancer NGOs and medical organisations, we are deeply grateful to every individual who spent time and effort in supporting our team by granting interviews and providing information, photographs, news articles and more.

We sincerely hope we have captured the pioneering spirit, dedication, sacrifice and camaraderie that embody our profession, and humbly ask forgiveness for any errors or details that may have been overlooked.

To our fellow MOS members, allied health professionals and NGO partners, here's to another 50 years of exciting developments.

On behalf of the MOS Commemorative Book Committee (2017-2020),

Dr Matin Mellor Abdullah
Former President (2015-2018)
Malaysian Oncological Society

The official launch of Mount Miriam Hospital on 21 February 1976, one of Malaysia's first specialist cancer hospitals.

Chapter 1:

Humble Beginnings

In the past century, the field of medicine has advanced in leaps and bounds, with techniques, procedures and equipment being improved upon at a tremendous rate. Today, in an era of medical marvels, it's easy to forget that it all had to start somewhere, and every area of expertise had humble beginnings, limited resources and the most basic of facilities.

The Early Years

As a discipline, Clinical Oncology, previously known as Radiotherapy and Oncology, found its first home in the Kuala Lumpur General Hospital (KLGH). The department was a single, unassuming building located between the Maternity Hospital and Neurosurgical Unit. At the time, there were no dedicated beds for patients, and radiotherapy services were conducted by Dr Lal from Singapore and Dr Lynch, an Irish radiotherapist who shuttled between Singapore and Kuala Lumpur. They, in turn, were supported by two radiographers, a staff nurse, a secretary/receptionist and an attendant.

A period of rapid growth for the discipline began in 1960 when Malaysia welcomed its first radiotherapist, Dato' Dr SK Dharmalingam, and the first physicist, Mr George Phang, in the Department of Radiotherapy & Oncology, KLGH. Over time, with the addition of two radiographers and a physicist, the department grew to comprise four local consultants, eight sisters, 28 staff nurses, 40 assistant nurses and approximately 70 attendants. In addition, several specialists from the United Kingdom, Korea, Pakistan and Austria were attached to the department, including Professor Roberts of Middlesex Hospital and Professor K Brittan from St Bartholomew's Hospital.

The Radiotherapy Building in KLGH circa 1964, prior to the construction of the Institute of Radiotherapy, Oncology and Nuclear Medicine in 1968.

The newly-built Institute of Radiotherapy, Oncology and Nuclear Medicine at KLGH which housed all relevant equipment for cancer diagnosis and therapy under one roof.

The first batch of radiation therapy students trained locally at KLGH, taken in 1968. In the front row are Mr T Yogaratnam (second from left); Professor Roberts (third from left), a radiation protection expert from the United Kingdom; ER Hutchinson (centre), advisor to the Ministry of Health Malaysia from the United Kingdom; and Dato' Dr SK Dharmalingam (fifth from left), Malaysia's first clinical oncologist and Head of Department at KLGH.

In 1962, Mr Anthony Ng became the first nuclear medicine technician after receiving training at the Royal Melbourne Institute of Technology. Soon after, in 1967, the Radioisotope Laboratory was established at University Hospital, Kuala Lumpur.

The discipline received a further boost with the allocation of RM3 million for the establishment of the Institute of Radiotherapy, Oncology and Nuclear Medicine at KLGH. Construction commenced in August 1967 and was completed in November 1968 with 180 beds, an operation theatre for brachytherapy, its own laboratory, pharmacy and an outpatient department. A Cancer Ambulant Ward was also established to provide for patients from other states, who did not need to be admitted to a ward, yet required accommodation for the duration of their treatment.

With such growth, supporting roles also sprang up – in 1974, the engineering division in the Ministry of Health created a new physicist post and a fully-equipped physics workshop was installed in the institute expressly for the preparation of specialised equipment such as lead shielding devices.

In tandem with these developments, the establishment of the National Cancer Society of Malaysia (NCSM) in 1966 contributed to greater awareness among all levels of society. Public talks, educational activities and news articles with leading experts were instrumental in establishing the need for more doctors specialising in cancer care and better facilities to meet the demand for treatment.

Dato' Dr SK Dharmalingam, Malaysia's first consultant radiotherapist and clinical oncologist, founded NCSM to help raise visibility for cancer awareness and treatment among influential people in society, from philanthropists to government officials, as well as the public.

News articles and notices from the 1970s

The 90's and Beyond

In 1995, the Institute of Radiotherapy, Oncology and Nuclear Medicine at KLGH underwent its second phase of development which saw the establishment of a Day Care Centre and renovation of its outdated operation theatre. Between 1997 and 2001, two new linear accelerators (LINAC), a high dose rate (HDR) remote afterloading brachytherapy system, a three-dimensional treatment planning system and a digital imaging simulator were added. With this comprehensive array of equipment, services such as total body irradiation (TBI) for patients requiring bone marrow transplants could now be carried out at KLGH and at University Hospital Kuala Lumpur (now known as University Malaya Medical Centre, UMMC).

The 1990s also saw radiotherapy and oncology departments established in several universities, including what's now known as Universiti Kebangsaan Malaysia Medical Centre (UKMMC). In 1997, a department was set up in UMMC under the supervision of clinical oncologists Dato' Dr Mohd Ibrahim Abdul Wahid and Dr Matin Mellor Abdullah, together with physicists Ms N Whylde, Mr BH Khoo, Ms P Rassiah and therapy radiographer Mr T Yogaratnam. The department was equipped with a linear accelerator with multileaf collimators, stereotactic radiotherapy, high dose rate and low dose rate remote afterloading brachytherapy, and virtual simulation.

Soon after, in 1999, collaboration with the International Atomic Energy Agency (IAEA) made the high dose rate brachytherapy service possible, making it one of the few departments to offer high dose rate brachytherapy services in Malaysia. Subsequently, state-of-the-art radiotherapy techniques like three-dimensional conformal radiotherapy and x-knife radiosurgery services were added in 2001.

In Kelantan, Universiti Sains Hospital Malaysia in Kubang Kerian started the first radiotherapy service in the east coast of Peninsular Malaysia. Originally known as the Nuclear Medicine department, the Radiotherapy and Oncology division was added in December 1995 and was led by Professor Dato' Dr. Mustaffa Embong, who was then Dean of the Medical School, and Associate Professor Ahmad Zakaria, a specialist in Medical Physics. The Ministry of Health also seconded Dr D Jayendran, a clinical oncologist, to assist in the department, together with two therapy radiographers, Ms A Shaari and Mr K Hassan.

Development in Other States

In addition to its development in Kuala Lumpur, the discipline saw positive growth in Sabah, Sarawak and Penang.

Northern Malaysia

From the moment it first opened its doors on 21 February 1976, Mount Miriam Hospital in Penang has been dedicated to caring for cancer patients. Its first patient was admitted on 1 June 1976; in 1979, they had 333 patients and by 1982 this number had increased to over 500. In keeping with its original objective, it was renamed Mount Miriam Cancer Hospital on 31 October 2008.

In 1996, Penang welcomed Dr D Jayendran, a senior clinical oncologist from the Ministry of Health. At the time, chemotherapy and palliative care was provided at Penang Hospital while government patients requiring radiotherapy were referred to Mount Miriam Hospital (as it was known then) and Pantai Mutiara Medical Centre. To improve access to cancer therapy for Malaysians in the northern states, oncology clinics were also set up in Alor Setar, Kedah; Seberang Perai, Penang; and Taiping, Perak.

East Malaysia

Sarawak General Hospital's Department of Radiotherapy and Oncology was officially opened on 15 August 1985, with Dato' Dr Jaswant Singh serving as the department's first clinical oncologist. Soon after, a nuclear medicine section was opened and daycare chemotherapy services were first offered in 1993. The department had two linear accelerators, a conventional simulator and a Buchler medium dose rate remote afterloading brachytherapy machine using caesium-137. With ongoing advancements in technology, the department installed a new cobalt unit in 1996 and replaced a linear accelerator in 1997. In June 2001, a new high dose rate brachytherapy unit made it possible for patients with nasopharyngeal cancer to be treated with intracavitary brachytherapy at Sarawak General Hospital.

** Prior to the new acquisition, brachytherapy was not an available option for patients with nasopharyngeal cancer as the older brachytherapy machine could only treat patients with gynaecological cancers.*

The 1990s also saw radiotherapy and oncology departments established in several universities, including what's now known as Universiti Kebangsaan Malaysia Medical Centre (UKMMC) and University Malaya Medical Centre (UMMC).

From 1995, the Department of Radiotherapy and Oncology achieved several noteworthy milestones which helped to propel the development of cancer therapy in East Malaysia:

- Hospice home care service was made available for residents in Kuching; as more nurses from all over Sarawak were trained, the service was expanded to the entire state of Sarawak.
- Training in palliative care for doctors, nurses and paramedics commenced. Initially conducted in Sarawak General Hospital, training was extended to Sibu in 1996 and Miri in 1997.
- Early Cancer Surveillance Training was initiated as more than 70% of patients presented themselves at advanced stages of cancer. At the time, nasopharyngeal cancer, as well as cancer of the breast and cervix, were common. Nurses and medical assistants from various hospitals and peripheral clinics were trained using both theory and practical sessions.

Since 2003, the department has had a dedicated Palliative Care Ward with beds for acute and continuing care. The ward oversees the development of palliative care services for the entire state, including a drug delivery system which ensures patients – even those in remote areas – are able to receive treatment for symptomatic relief.

In addition to hospital-led initiatives, a Breast [Cancer] Support Group was started in 1993 with monthly meetings, annual dinners and regular parties for patients; in 1997, separate Cancer Patient Support Groups for male and female patients were formed at the request of the patients.

More recently, Sabah welcomed its first dedicated cancer therapy centre in 2014, the Nuclear and Radiotherapy Medical Centre in Likas. It provides much-needed care for patients in East Malaysia, many of whom would have needed to travel to the peninsular for therapy. The need for more facilities is underscored by the increasing numbers of cancer patients, which by some estimates have doubled in just two years, based on the number of patients on follow-up treatment at the Sabah Women and Children's Hospital.

Tools of the Trade: An On-going Evolution

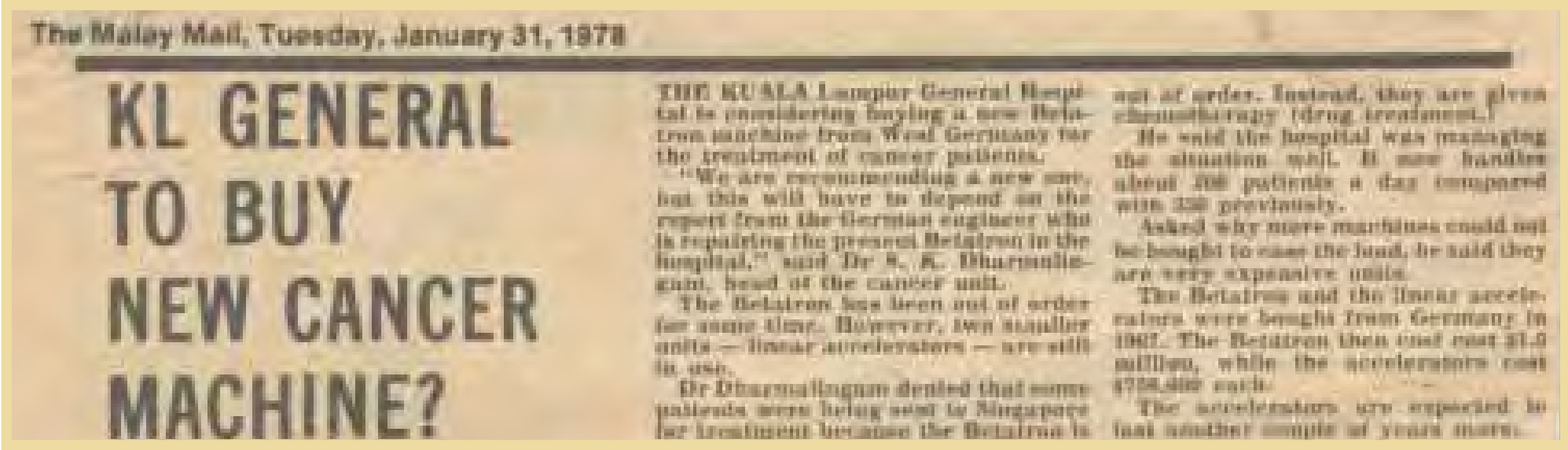
The earliest available record of x-ray therapy in Malaya was of a Crookes x-ray tube acquired in Singapore in 1914. This was followed in 1920 by a Coolidge tube, and in 1933 a deep x-ray therapy unit was installed in Singapore General Hospital. During the 1950s, external beam radiotherapy was first made available in Kuala Lumpur; the decade also marked the installation of various x-ray machines.

Over the years, KLGH would acquire more equipment and replace older equipment with improved models for better results:

- A radium safe and a 300 kV orthovoltage treatment machine were purchased for the Radiotherapy Department in KLGH in 1965; in 1977 and 1978 respectively, a single energy linear accelerator and a telecaesium unit were installed to replace the old orthovoltage machines.
- Two analogue dosimeters from Germany, used for dose calibration and measurement of the megavoltage machines were acquired. Now digital dosimeters are used for better dosimetry.
- Manual summation of isodose planning was replaced with a computerised treatment planner in 1987 and 1988.
- Radium-226 was the earliest radioisotope used in brachytherapy; in 1993, it was replaced by caesium-137. Since 2004, iridium-192 has been in use.
- The manual afterloading system for brachytherapy was replaced by a remote system in October 2003.

These few examples only serve to highlight how far and how quickly the field of oncology has developed since the 1960s; in turn, every improvement in knowledge and technology has allowed oncologists to provide better care and treatment to patients.

Today, cancer diagnosis, staging and treatment is aided through the use of imaging technology, namely x-ray including computerised tomography (CT), ultrasound, magnetic resonance imaging (MRI), single-photon emission computed tomography (SPECT), positron emission tomography (PET), and optical imaging. Of these, CT, MRI, SPECT, and PET allow three-dimensional detection of cancer.



The Malay Mail, Tuesday, January 31, 1978

KL GENERAL TO BUY NEW CANCER MACHINE?

THE KUALA Lumpur General Hospital is considering buying a new Betatron machine from West Germany for the treatment of cancer patients.

"We are recommending a new one, but this will have to depend on the report from the German engineer who is repairing the present Betatron in the hospital," said Dr S. K. Dharmalingam, head of the cancer unit.

The Betatron has been out of order for some time. However, two smaller units — linear accelerators — are still in use.

Dr Dharmalingam denied that some patients were being sent to Singapore for treatment because the Betatron is out of order. Instead, they are given chemotherapy (drug treatment).

He said the hospital was managing the situation well. It now handles about 200 patients a day compared with 250 previously.

Asked why more machines could not be bought to ease the load, he said they are very expensive units.

The Betatron and the linear accelerators were bought from Germany in 1967. The Betatron then cost cost $1.5 million, while the accelerators cost $750,000 each.

The accelerators are expected to last another couple of years more.

With few cancer centres in the 1970s, equipment availability – and the corresponding ability to treat patients – was a cause for concern.

Chapter 2:

Oncology Services and Infrastructure in Malaysia

Medical services across Asia are gaining more recognition around the world, and Malaysia serves as a positive role model – many local hospitals and medical centres feature state-of-the-art equipment and offer exceptional care in many disciplines and areas of treatment. This is an important aspect for comprehensive care as oncology encompasses many disciplines – after screening and diagnosis, treatment includes radiotherapy, chemotherapy, hormonal therapy, immunotherapy, and surgery, among others. In addition, patients require symptomatic and supportive therapy which range from counselling and nutrition to physiotherapy, pain management and palliative care.

While all these are essential, radiology and oncology have a symbiotic relationship – in Malaysia, as practised in the United Kingdom, clinical oncologists are responsible for administering and overseeing both radiotherapy and chemotherapy hence they are also trained radiation oncologists.

Cancer Treatment Resources in Malaysia

History has shown that close cooperation between various disciplines is essential to provide quality cancer treatment and care for patients. For the past 40 years and more, the interdisciplinary nature of cancer treatment and care has led to increased collaboration such as combined clinics which are jointly run by oncologists and specialists from various disciplines.

Overall management of cancer in Malaysia is an ongoing evolution as knowledge and understanding grows, thanks in part to continuous learning, ongoing advancements and relevant data from local sources such as the National Cancer Registry. Based on an ever-growing body of knowledge and expertise, decisions can be made, policies implemented and resources invested to improve cancer care, ranging from setting up the state-of-the-art *Institut Kanser Negara* (IKN) or National Cancer Institute in Putrajaya and the adoption of Palliative Medicine as an independent discipline.

The services and facilities currently available fall under several categories:

Radiology

Radiology services are available at all government hospitals and most health clinics, ranging from basic radiographic examination at smaller hospitals and health clinics, to general radiography and special radiological examinations such as Ultrasound, CT, MRI, Mammography, Fluoroscopy, and Angiography in tertiary and larger hospitals.

As of 2015, there are 250 resident radiologists stationed at 50 hospitals who provide basic Interventional Radiology (IR) services while advanced IR services are available in KLGH, Selayang Hospital, Sungai Buloh Hospital, National Cancer Institute, Sultanah Bahiyah Hospital, Alor Setar, Sultanah Aminah Hospital, Johor Bahru, Sarawak General Hospital and Serdang Hospital by specially trained radiologists. Selayang Hospital and KLGH function as centres for IR training; consultants from these two hospitals make scheduled visits to other hospitals.

Pathology

Pathology services are widely available across Malaysia, from a variety of state and specialist hospitals, as well as health laboratories.

Nuclear Medicine

Nuclear medicine is categorised as Level 1 for Diagnostics & Outpatient Therapy and Level 2 which incorporates Level 1 as well as Inpatient Therapy. Nuclear medicine centres are further identified with a subset based on the availability of equipment, with the subset 's' which denotes SPECT service, subset 'p' which denotes PET service and subset 'sp' which indicates both services are available.

In Peninsular Malaysia, nuclear medicine services are available across five regions, namely:

- Northern: Penang General Hospital (Level 2sp) and Sungai Petani Cancer Specialist Centre in Kedah (under construction)
- Central: KLGH (Level 2s) and National Cancer Institute (Level 2s)
- Southern Region: Sultanah Aminah Hospital (Level 1s)
- Sarawak: Sarawak General Hospital (Level 2s)
- Sabah: Sabah Women and Children Hospital (Level 2s)

To support the planned increase in nuclear medicine centres, since 2008, a post-graduate and training programme started by Universiti Sains Malaysia has produced over 20 graduates in the Master of Medicine in Nuclear Medicine.

Radiotherapy & Oncology

Radiotherapy and oncology services are available in both government and private hospitals mainly found in Klang Valley, Johor Bahru, Kuching, Kota Kinabalu, Malacca and Penang. Government facilities with radiotherapy facilities are:

- KLGH
- Sarawak General Hospital
- Sultan Ismail Hospital, Johor Bahru
- Sabah Women and Children's Hospital
- National Cancer Institute, Putrajaya

There are presently no government radiotherapy centres in the Northern region as Penang General Hospital is an oncology centre without radiotherapy facilities. To improve access, Clinical Oncology Units are planned for tertiary government hospitals in Muar, Kuantan, Alor Setar and Sandakan/Tawau while regional oncologists will run visiting clinics.

Clinical Haematology

Clinical Haematology is available in 24 government, university and private hospitals. There are 25 haematologists in the country, with more in training.

Breast and Endocrine Surgery

Diagnosis and treatment of breast cancer is available in most major public hospitals. While largely managed by general surgeons, the number of trained breast and endocrine surgeons is increasing. There are presently 20 specialised surgeons based in eight government hospitals which are equipped with all the facilities and treatment services to treat and manage patients with breast cancer:

- KLGH
- Putrajaya Hospital
- Sultan Ismail Hospital, Johor Bahru
- Raja Perempuan Zainab II Hospital, Kota Bahru
- Sultanah Nur Zahirah Hospital, Kuala Terengganu
- Penang General Hospital
- Queen Elizabeth Hospital, Kota Kinabalu
- Raja Permaisuri Bainun Hospital, Ipoh

Although the number of oncologists and facilities continue to grow, there are only 110 oncologists in Malaysia to meet the needs of the population, which stands at 31 million as of 1 January 2016. This equates to a ratio of four oncologists to one million Malaysians, falling short of the targeted eight to ten oncologists per one million citizens. The National Strategic Plan for Cancer Control Programme (NSPCCP) reports that, while the National Cancer Institute has been able to meet the needs of many patients, Malaysia is still critically short of oncologists.

"I like most of the senior oncologists, some of whom have retired, did my training in the UK. In the early 1990's, few people were interested in oncology as it was deemed morbid and without hope. Training was mostly on-the-job and you need to find your own place of training in the UK. When I joined the Institute of Radiotherapy and Oncology KLGH, there were only 8 oncologists there. Everyone was busy as there was only KLGH and PPUM then. Each specialist would see 10-15 new cases per clinic which is about 500 new cases a year compared to the Royal College of Radiologists recommendation of 350 new patients per consultant. It was a busy time for us hence the need to conduct our own training programme."

~ Professor Dato' Dr Fuad bin Ismail, Head, Radiotherapy & Oncology Department, Universiti Kebangsaan Malaysia Medical Centre (UKMMC)

Hospital kerajaan perlu pakar onkologi klinikal

News report highlighting the urgent need for more clinical oncologists in Malaysia.

To help address this issue, efforts to train more oncologists were implemented. In 2002, University of Malaya started its Master of Clinical Oncology programme, which was modelled after the programme offered at The Royal College of Radiologists in the United Kingdom. Prior to this, postgraduate training in clinical oncology was carried out in the United Kingdom or Ireland, a financial investment which limited the number of trainees every year. Thus far, the local programme has produced 28 graduates, with another 37 undergoing the training programme.

In addition, initiatives are also in place to bring oncologists back to Malaysia, gradually increasing the number of qualified oncologists in the country.

While these efforts, coupled with ongoing advancements in technology, allow for more successful treatment and better patient care, there remain significant disparities in terms of access to these services. As a result, innovations such as telemedicine and teleconsultation are being introduced that will help improve access to expert advice for cancer patients in remote areas. However, there is still an overall need for more specialists and allied health professionals, as well as oncology and radiology centres, to meet the need for treatment.

To help relieve the great burden on government centres, the Ministry of Health also purchases radiotherapy services from selected private hospitals and medical centres.

Partners in Cancer Care

In addition to hospitals and medical centres, institutions such as universities and professional organisations play an important role in driving progress within the field of oncology in Malaysia.

Working hand in hand, university hospitals such as University Malaya Medical Centre (UMMC) and Universiti Kebangsaan Malaysia Medical Centre (UKMMC), coupled with professional organisations such as the College of Radiology and the Malaysian Oncological Society (MOS), act as advocates to continually advance cancer-related education, raise the bar for better treatment and improve patient care and outcomes.

Hospice care is offered and provided for patients during their last phase of an incurable illness or near the end of life, such as for some people with advanced or metastatic cancer.

The inclusion of palliative care has also helped those who are nearing end of life as a result of various conditions; this includes cancer patients with advanced or metastatic cancer who face poor chances for remission or cure. A milestone was achieved in 1995 with the first dedicated Palliative Care Unit established in Queen Elizabeth Hospital in Kota Kinabalu, Sabah. Following this, the Ministry of Health issued a directive that all government Hospitals should develop palliative care units or palliative care teams by 2000. Today, palliative medicine is a recognised medical subspecialty.

Then: Mount Miriam Cancer Hospital

One of Malaysia's first specialist cancer hospitals, Mount Miriam Cancer Hospital (MMCH) had its beginnings in 1963 with the encouragement of the first Catholic Bishop of Penang, Bishop Francis Chan. Terminally ill with cancer, he was grateful for his care at the hands of the French Sisters of the Foreign Missions (known then as 'Grey Sisters'). In 1969, his successor, Bishop Gregory Yong, requested for the Sisters of the Franciscan Missionaries of the Divine Motherhood (FMDM) to build a cancer hospital.

FMDM Sisters in consultation with the architect during the construction of Mount Miriam Hospital

The official launch of Mount Miriam Hospital on 21 February 1976, with Mother Baptista Hennessy, Administrator and Matron; Hon. Dato' Teh Ewe Lim, acting Chief Minister; Bishop Gregory Yong; and Dr. Peter Tan Ewe Aik, first Honorary Doctor and Medical Superintendent

A cancer care pioneer in the northern region of Malaysia, the hospital was constructed in 1974 using funds personally gathered by the sisters. Donations collected from door-to-door efforts and generous benefactors made it possible for the Mount Miriam Hospital to officially open on 21 February 1976, with its first patient admitted on 1 June.

While the initial intent was to care for patients in the last stages of cancer, the sisters responded to the pressing need and increased demand for treatment and opened a Radiotherapy Unit in 1979, under the leadership of Dr Attar Deo Singh from Christian Medical College & Hospital in India and Dr Chia Kim Boon, Senior Consultant Radiotherapist and Oncologist from Singapore General Hospital. They were succeeded by Dr Daniel O'Connell from Charing Cross Hospital in London, followed by Dr GC Pant, Professor of Varanasi Hospital in India. In 1985, Dato' Dr Mohamed Adel Mohamed Zaatar from the United Kingdom joined the ranks.

Mount Miriam Cancer Hospital continued to forge ahead – in 1988 it was the first hospital in the region to acquire the Ximatron Simulator and new extensions to the Radiotherapy Unit opened in 1989; which was extended once again in 1993.

The extension to the Radiotherapy Unit was officially opened by the Governor of Penang, Tun Dato' Dr. Haji Awang Bin Hassan, SMN, DUPN, SPMJ, on 2 April 1989

By 1996 the number of patients had exceeded 1000; to cope, the hospital opened its Day Chemotherapy Unit in December 1999, which could accommodate 16 patients a day, and a twice-weekly Palliative Outpatient Clinic with house visits was introduced in 2001.

The following year, the first Mount Miriam Hospital Survivors' Day was organised, celebrating the resilience of cancer survivors, together with 700 communities from around the world; the event is now celebrated every year. Soon after, the hospital celebrated a milestone achievement, achieving MS ISO 9001:2000 certification by SIRIM QAS International in 2004.

Despite being a not-for-profit institution, MMCH remains dedicated to offering the most updated technology, expanding its services with new oncology clinics in 2010, a dedicated Cancer Screening Centre in 2012, and was the first hospital in the northern region of Malaysia to offer precise, non-invasive radiation therapy.

Now: Malaysia's Institut Kanser Negara

Malaysia has come a long way since the establishment of the Institute of Radiotherapy, Oncology and Nuclear Medicine in Kuala Lumpur General Hospital (KLGH) in 1968.

Today *Institut Kanser Negara* (IKN) or National Cancer Institute is one of Malaysia's premier cancer centres which was established as one of the nation's responses to the burden of cancer.

This state-of-the-art facility is a multidisciplinary, national referral centre for cancer which promotes better access to safe and efficient treatment. Its core clinical services are radiotherapy and oncology, nuclear medicine, surgical oncology, palliative care and supportive treatment. Other departments include the Cancer Registry and Traditional & Complementary Medicine.

As one of Malaysia's leading facilities in cancer management, IKN provides services such as Stereotactic Radiosurgery (SRS) and Stereotactic Radiation Therapy (SRT) treatment. IKN has provided training in SRS and SRT for other cancer facilities in other parts of the country. This decentralisation improves access so that cancer patients across Malaysia can receive treatment closer to where they live.

Linear Accelerator

Tomotherapy

Single-Photon Emission Computed Tomography - Computed Tomography (SPECT-CT)

Angiography Biplane

In addition to managing cancer therapy using state-of-the-art equipment and techniques, IKN fulfils many other roles, which include:

- *Establishing and reviewing national policies, guidelines and standard operating procedures.*
  For example, IKN contributed towards the formulation of the Clinical Practice Guidelines for Nasopharyngeal Carcinoma, Clinical Practice Guidelines for Colorectal Carcinoma and the Clinical Practice Guidelines for Traditional & Complementary Medicine.

- *Providing training for doctors and allied health professionals.*
  As a training centre for the Masters in Clinical Oncology programme, IKN receives trainees who will one day be clinical oncologists. IKN has also provided training for doctors in other disciplines such as Nuclear Medicine, Radiology and Palliative Care. Many allied health staff have also undergone part of their training in IKN.

- *Conducting research in collaboration with other agencies, both local and international.*
  Overall, IKN employees participated in more than 50 research projects and 16 published manuscripts between 2017 and 2018. IKN was recognised as a Top Recruiter and Clinical Trial Site of the Year 2018 in the Industry Sponsored Research Award. Among its recent endeavours is a collaboration with Cancer Research Malaysia (CRM) on the MAGIC (Mainstreaming Genetic Counselling for Genetic Testing of BRCA1 and BRCA2 in Malaysian Ovarian Cancer Patients) study.

While all these achievements demonstrate the full-fledged capabilities and talents at IKN, the main focus is patient care. At present, it has the highest number of beds among cancer centres in Malaysia and the number of inpatients between 2014 and 2018 more than tripled. In its role as a referral centre, IKN also receives a large number of patients. To meet the future needs for cancer management, IKN was designed with growth in mind, with space allocated for additional wards, radiotherapy equipment and other functions.

Chapter 3:

Oncologists in Malaysia

Just as in every profession, oncologists come from different backgrounds and philosophies. They may gain their training and medical experience from clinical centres of excellence around the world but each one brings something special to the table, a unique combination of medical skills, technical expertise, keen clinical insights, passion and compassion.

Some of them are inspired by childhood or personal experiences; others are inspired by events during their early days of training or find themselves drawn to the specialisation by a unique mix of circumstance, opportunity and random chance. In some instances, it may be some strange combination of all-of-the-above.

From the viewpoint of an oncologist, cancer is a medically challenging specialisation, one that is filled with new developments and treatments that are constantly evolving and being improved upon.

On the other hand, the layperson views cancer as the most dreadful diagnosis a patient can receive. Misconceptions abound, and many view a cancer diagnosis as a virtual death sentence.

Even though many cancers, when detected early, have good survival rates, the fact remains that oncologists are frequently faced with the unenviable task of delivering devastating news to their patients and receiving the brunt of their grief, anger and disbelief.

What kind of individual takes on such a burden and chooses to specialise in oncology?

Presenting this question to both practicing and retired oncologists, many responded that the sheer scope of oncology was the most compelling reason. In this dynamic discipline, learning never stops.

"I like to deal with cutting-edge technology; it's forever changing. The challenge [is] to keep up-to-date with the latest development, research, technology, drugs... [all the] ways of treating cancer. Keeping up with technology and treatment updates is most interesting – if you miss out on one year of developments, you are left far behind."

~ Dato' Dr. Mohd Ibrahim Abdul Wahid

Meeting the Need for Cancer Therapy in Malaysia

Since 1968, when the first national cancer centre was opened at Kuala Lumpur General Hospital, the number of both government and private centres has grown to address the increasing need for cancer detection and treatment among Malaysians.

According to Globocan, the cancer agency of the World Health Organization (WHO), the incidence of cancer in Malaysia was 37,000 in 2012 and is predicted to rise to almost 57,000 in 2025. The increase can be attributed to several factors, namely population growth, longer lifespans and earlier detection, as well as lifestyle factors which include tobacco and alcohol consumption, among others.

In response to the ever-increasing need for qualified oncologists, University Malaya offers a Master's in Oncology Programme. Prof Dr Anita Zarina Binti Bustam @ Mainudin, Head of the Master of Clinical Oncology Programme at Universiti Malaya (2002-2013) offers a clearer picture of the path travelled by doctors wishing to specialise in oncology.

"In the 1980s, clinicians were sent to the United Kingdom for post-graduate training in clinical oncology. This provided greater opportunities for exposure to treatment facilities and techniques but the training, in addition to being costly, also occurred outside the context of local culture and pattern of malignancies," explained Prof Anita.

"In 2000, there were only 30 practicing oncologists in Malaysia to serve a population of 20 million. With the rising incidence of cancer in the country, the decision was made to initiate a local university-based programme that could train oncologists within Malaysia, who could provide the necessary non-surgical services."

The following year, she explains, a steering committee was set up to develop a structured training programme for a Master of Clinical Oncology degree under the auspices of the University of Malaya. The aim was to produce 'generalist' clinical oncologists who are able to safely and competently manage a broad range of malignancies with both chemotherapy and radiotherapy. Thereafter, the Faculty of Medicine University of Malaya launched the Master of Clinical Oncology programme with its first intake in November 2002.

The Road to Specialisation

There's no simple answer to the question 'what makes a good oncologist?' but some traits certainly stand out. Above and beyond medical training and specialisation, an oncologist exhibits an inquisitive mind, a constant desire to learn more about the latest and best in cancer research, and the ability to communicate and work as a team as cancer is a collaborative effort involving multiple disciplines and specialities.

In essence, a clinical oncologist is specially trained to diagnose and prescribe the necessary range of chemotherapy and/or radiotherapy needed by a cancer patient.

The Master of Clinical Oncology degree in Malaysia is a four-year programme which covers basic oncological sciences, clinical training in all aspects of non-surgical management of cancers with emphasis on radiation oncology and use of systemic therapy, and research. The syllabus is based largely on the United Kingdom's Royal College of Radiologists higher specialist training programme for Clinical Oncology. It includes both summative and formative assessments, plus a dissertation in the final year of training.

"Oncology is the only specialisation that encompasses every part of the body. It's challenging, always topical and broad-based. Only in oncology do you need to speak to specialists in all other disciplines!"

~ Professor Dato' Dr Md Tahir bin Md Azhar, Former President, Malaysian Oncological Society

To qualify for the programme, a candidate must have a recognised basic medical degree, a minimum of two years post-registration clinical experience in specified disciplines and satisfactory performance in an entrance evaluation set by the department concerned.

In order to graduate, trainees must pass all exams and assessments specified within the programme, based on the examination structure:

- Part 1 Examination: a knowledge-based summative assessment comprising of written papers and viva voce (oral examination) of the following subjects: Pathology, Radiotherapy Physics, Molecular Biology, Pharmacology, Radiobiology and Medical Statistics.
- Part 2 Examination: a summative assessment and test of knowledge and clinical skills reflecting daily clinical practice. It comprises clinical-based papers, clinical short cases involving real patients and viva voce.
- Final Examination: a formative assessment based on the Research Report and Continuous Log Book Assessment.

As of June 2017, there have been 16 intakes with a total of 40 graduates, said Prof Anita.

While the programme fulfils its primary objective of increasing the number of clinical oncologists in Malaysia, challenges remain such as:

- the need to retain oncologists in public hospitals
- the need to recruit more supervisors and teaching staff for training
- the need for new centres to train future oncologists
- the need to ensure graduates meet both local needs and international standards

Presently, national curriculums (including revisions of existing curriculums) are being developed for all clinical specialties in Malaysia. Under this national curriculum, training programmes will no longer remain under the auspices of specific universities. Instead, accredited oncology centres or departments will be able to train their own oncologists; theoretically, this will keep the trainer to trainee ratio small for closer supervision.

Clinical oncologists can also choose to focus on specific areas such as paediatric oncology or gynaecological oncology, allowing them greater insights into treating cancers affecting these areas.

In addition to the long and arduous route to earn a specialisation in oncology, the role is particularly challenging as it goes beyond merely treating a disease. The practice of oncology requires a great deal of patience and compassion as it also involves educating patients and their family members, dispelling myths about treatment, addressing the high cost of treatment and its impact on the patient, and much more.

When Good Intentions Are Not Enough

Having to inform a patient that their chances are slim or that they are dying despite every effort to eradicate the cancer is understandably difficult, and clinical oncologists have more than their share of such moments.

As they strive to achieve the best possible outcome for their patients, relationships are formed over the duration of therapy. In the course of their profession, clinical oncologists may even successfully cure a patient only to see the patient again, with cancer affecting a different organ. No matter what the circumstances, losing a patient can take its toll. However, even when the possibility of death is always looming, this doesn't mean all oncologists take a morbid perspective on their work. A study in 2013 involving 22,000 doctors across 25 specialities revealed that 57% of the oncologists who participated reported that, given a choice, they would choose the same speciality again.

Ultimately, coping with the realities of cancer means coming face-to-face with one's own mortality and being at peace with the knowledge that their role is to help their patients fight the disease until the end, using the best of their abilities and resources available.

In the words of...

Dato' Dr Mohd Ibrahim Abdul Wahid, Consultant Clinical Oncologist and Medical Director at Beacon International Specialist Centre, who shares his thoughts on receiving his calling as an oncologist:

"I did a 6-month attachment in oncology as a junior doctor and the experience changed my whole perspective. As an oncologist, not even one day goes by that we don't see a challenging case because a lot of patients present with advanced cancer. To me, every single case is a challenge – cancer is a nasty disease that takes a toll on everyone and if you manage it wrongly, the outcome will be poor. We've had patients who have been told they only had 3 months but eventually survived 3-5 years. It's very satisfying – they come here expecting that they are going to die soon but outlive other family members. That changes your perspective, when you see patients close to dying and you pull them back for a little longer. You make a difference as a doctor."

Allied Health Professionals in Oncology

Treating a person afflicted with cancer involves more than just one specialist. As cancer can affect any part of the body, an oncologist often works with doctors in other fields such as ENT specialists, orthopaedic surgeons and urologists, among others.

Skilled medical staff are also essential; these include oncology nurses, medical physicists, radiographers and many others. Together, their combined efforts form an interconnected web of care that is essential to provide the needed cancer therapy, rehabilitation and palliative care.

Among those who interact most with patients are oncology nurses who, in addition to providing clinical services, also offer emotional support for patients and their family members. Over the long course of treatment, a compassionate oncology nurse plays a vital role in alleviating a patient's physical and emotional pain during their cancer journey.

Radiation therapists are responsible for the simulation, planning and delivery of radiation therapy. They work hand-in-hand with clinical oncologists to ensure that the necessary treatment is delivered to the tumour without affecting the surrounding tissues and organs. A highly technical position which requires knowledge of specialised equipment and radioactive substances, radiation therapists also see patients repeatedly until the course of treatment is over, often forming relationships with them. In this way, the importance of positive interaction between patients and radiation therapists cannot be underestimated as they continually counsel, encourage and guide patients throughout the duration of radiation therapy.

For patients approaching the end of their cancer journey, the next step comes in the form of palliative care. This medical discipline sees little publicity as many people – laypeople as well as healthcare professionals – are uncomfortable dealing with the suffering that accompanies advanced cancer and the emotional toll of preparing for a person's eventual death. However, it is an essential part of a cancer management plan and encompasses a wide scope, from easing symptoms like pain, nausea and breathing difficulties to managing emotions like fear, anger, denial and depression. Ultimately, palliative care offers patients and their families both physical and emotional support. This can come in many forms, from information and counselling to pain management, to enable patients to cope with their situation and come to terms with their mortality more effectively.

Treating the Patient, Not Just Fighting Cancer

Advancements in science and technology have made cancer detection and treatment far more efficient and accurate. Ongoing research and development continue to enhance doctors' understanding of the disease they face, but at the end of the day, what matters to the patient is to have an oncologist who is also kind, patient, and understanding.

Numerous blogs and testimonials by cancer patients show that they want to be acknowledged as individuals, and have doctors treat them as human beings with a right and need to be informed about their disease and the options available to them. Most importantly, they desire to be treated with respect and empathy.

The Role of Empathy

A US-based study examining 398 conversations between oncologists and their patients found that only 22% of oncologists responded with empathic statements when their patients shared their emotions. The study also pointed out that patients experienced less anxiety and depression, and improved adherence to therapy, when their doctors responded empathically when they shared their emotions.

A pioneer in oncology with over 40 years' experience, Professor Dato' Dr Md Tahir bin Md Azhar emphasises that it's important to be realistic without taking away a patient's hope. His approach is simple: "If it's curable, you should go all out [to treat the cancer] if the chance of cure is high. On the other hand, if the prospect of the cure is not there, and the cancer has spread everywhere, then cure is a silly proposition. But still, you must help! You must alleviate the symptoms."

He firmly believes in the science and art of communicating so that patients don't go home unnecessarily depressed. In his extensive experience, he considers it unwise for a doctor to destroy a patient's hope and cause misery because "You know from statistics that 99 out of 100 patients with advanced, stage 4 cancers will succumb. This means one in a hundred will not! One or two will defy the usual odds; there are cases where, even in the most dire circumstances, the patient gets better! So you should say 'statistics say this, but for you, nobody knows.'"

Chapter 4:

Pioneers in Oncology

Today's wealth of medical knowledge, advanced technology and the availability of cancer centres throughout Malaysia is a stark contrast to what Malaysia's early oncologists had to work with when they first embarked on their chosen career path.

Furthermore, as pioneers and trailblazers in the field, many of Malaysia's early oncologists recorded a steady string of 'firsts' in their accomplishments, such as Dr Perdamen Singh. A recipient of the Colombo Plan Scholarship, Dr Perdamen pursued a course in Medicine in Gwalinor, India, completed his housemanship and obtained a Diploma in Radiology and Electrology before returning to Malaysia.

"I had wanted to become a surgeon but I got my entry into radiotherapy because Dato' [Dr SK] Dharmalingam was looking for a Medical Officer to help him [at the Radiotherapy Department]. When I went to the Ministry, having done my diploma in radiology, he wanted someone who had experience treating patients. He wanted me posted immediately to KLGH but local housemanship regulations required a rural posting first so he said to me, 'You go now. I will get you back.'"

True to his word, Dr Perdamen served only 3 months at Taiping Hospital and 7 months in the Sungai Bakap District Hospital in Penang where he managed the needs of the 100-bed hospital while also overseeing two peripheral clinics and helping to set up a health centre. Thereafter, he was recalled to KLGH in 1962 as Dato' Dr Dharmalingam's first Medical Officer at the then-named Institute of Radiotherapy, Oncology and Nuclear Medicine.

To further his training, he was sent to Middlesex Hospital for a two-year Diploma in Radiotherapy, where he completed the course in one year and spent his second year gaining practical experience in High Energy Radiation and brachytherapy. Dato' Dr Dharmalingam further advised him to advance his knowledge in nuclear medicine, so as to enable the speciality to be set up in Kuala Lumpur. At the time, radioactive isotopes like Iodine 131 were used to treat thyroid disease as well as cancer.

During his time at KLGH, Dr Perdamen recalls Dr Gerald Lynch, Malaysia's last British radiotherapist, as well as a slew of fellow doctors recruited by Dato' Dr Dharmalingam such as Mr George Phang who was encouraged and guided to become Malaysia's first medical physicist. Over time, Dato' Dr Dharmalingam sent many others to Middlesex Hospital in London, England, for training as radiotherapy radiographers.

Meanwhile Dr Perdamen continued to delve into nuclear medicine - in 1977, he was offered a six-month fellowship by the International Atomic Energy Agency (IAEA) of Vienna and obtained a certificate in New Developments in Radiation Oncology and Nuclear Medicine.

That same year, he was also the first Malaysian to be accepted as Fellow of the Royal College of Radiology (FRCR London) by examination - out of 33 individuals from all over the world, he was one of the nine who passed. In time, Dr Perdamen succeeded his mentor and became Head of Department in 1983 until his retirement in 1987. Post-retirement, he assisted in setting up radiation services at Ipoh Specialist Centre (now known as KPJ Ipoh Specialist Centre). Dr Perdamen now serves as Medical Director at Kinta Medical Centre and continues to be involved in cancer research and palliative care in patients with advanced cancer.

A contemporary of Dr Perdamen, retired radiation therapist Mr T Yogaratnam remembers the vast difference between the facilities in the United Kingdom, where he obtained his qualifications as a radiation therapist, and Malaysia. When he returned in 1967 after completing his training, Mr Yoga recalled his dismay upon viewing the Radiotherapy Department – little more than a small, single-story building at the time – when he first reported to Dato' Dr Dharmalingam at KLGH. In fact, he felt his misgivings so intensely that he presented his letter promptly to resign.

However, he was convinced by Dato' Dr Dharmalingam's passion and vision for an ultra-modern, fully-equipped cancer facility.

"Prior to coming home, I had been offered a job in England, which was being held for me. I felt torn between the country that had trained me and my obligation to Malaysia but I decided to stay. I never regretted my decision, and my boss, Dato' Dr Dharmalingam, became my mentor," he said.

"I was based at KLGH for nearly 28 years. At the time, we were mainly working with linear accelerators – that was the thing at the time – but what made the cancer facilities at KLGH very special was that we had an Institute, one building with operating theatres and wards for patients, where all the most sophisticated equipment of that time was installed," said Mr Yoga. "We also had betatrons, orthovoltage, brachytherapy and even a mould room where we could make moulds and prosthesis for patients."

The moulds, made from Perspex, are essential for radiation therapy – they are customised to each individual patient for the best fit, and used to keep patients perfectly still. "In cancer therapy you need the beam of radiation to go straight into the cancer volume; if not, you'd cause damage [to the surrounding cells]. What's more, for patients with nasopharyngeal cancer, we use separate beams going in at different angles. During the 1960s, while I was in training, we didn't have accessories like these moulds but as the profession evolved, we came to realise that there was a need to immobilise patients during therapy for homogenous distribution of the radiation dose."

Also serving at the KLGH Radiotherapy Department at the time was Mr ER Hutchinson, Secretary General of the International Society Of Radiographers and Radiological Technologist (ISRRT) and advisor to the Malaysian Ministry of Health, who provided training for radiation therapists. Offering both technical and academic advice, Mr Hutchinson encouraged Mr Yoga to pursue further training and accreditation in London, which exposed him to the latest equipment and technology. Receiving his Fellowship in Radiation Therapy from the College of Radiographers UK, this accreditation led to his appointment as Head of Division (Treatment Section). To-date, Mr Yoga is one of the few radiation therapists with this honour and he credits Mr Hutchinson as another valuable mentor, who not only offered guidance and encouragement but also an appreciation of what radiation therapy was all about.

Mr Yoga eventually moved on to University Hospital in 1997 where he witnessed advancements such as the introduction of virtual simulation in the planning stage, the first hospital in the country to use this technology as well as intensity-modulated radiotherapy (IMRT) for precision delivery of radiation dose.

"With virtual simulation, we could now view the tumour volume in 3D and relate the tumour to all the critical structures around the tumour volume to avoid radiation damage to those areas," he explained. "Prior to this technology – involving diagnostic images such as computed tomography (CT) and PET scans and magnetic resonance imaging (MRI) – we only had X-rays which were in 2D, hence they don't give you depth or the involvement of other structures. With the use of CT Contrast (a non-radioactive substance injected into the patient) to define all the internal areas and organs, we were able to clearly see the tumour location and size."

In addition to virtual simulation, the cancer department at University Hospital, set up by Dato' Dr. Mohd Ibrahim Abdul Wahid, featured multi-leaf collimation which allowed radiation therapists to plan the treatment according to the unique shape of the tumour; in the past, older technology had only allowed square or round shapes.

With technology advancing in leaps and bounds Mr Yoga was constantly faced with the ongoing challenge of catching up. However, he was always encouraged to keep up with the changing times, and he considers his exposure to the latest innovations in oncology over the years to be extremely fulfilling.

Today, he credits men like Dato' Dr Dharmalingam and Dato' Dr Ibrahim for their vision and dedication which was instrumental in developing and advancing cancer therapy in Malaysia.

Another pioneer who served during Dato' Dr Dharmalingam's tenure was Dr Francis Lopez, a clinical oncologist who joined the Institute of Radiotherapy, Oncology and Nuclear Medicine at KLGH in 1973. Dr Francis spoke of him as a visionary who had clear goals and aspirations as to what had to be done to move the radiotherapy and oncology services in the country forward. To build oncology services in the country, he concentrated on training personnel so they could achieve the necessary qualifications and created the physical structures needed to achieve this.

Dato' Dr Dharmalingam used his considerable influence with the government, corporations as well as noteworthy individuals to seek funding and secure training programmes for future radiotherapists and oncologists. His connections ranged far and wide, from Guinness Breweries which sponsored world-renowned cancer specialists to deliver public lectures and hold training sessions for doctors, to international medical organisations such as the International Atomic Energy Agency (IAEA) to provide training positions with some of the leading hospitals in the UK including the Middlesex Hospital in London which he held in high regard.

He also had close personal relationships with the leading oncologists of the day, namely Prof Margaret Schnelling and Prof Keith Edward Halnan who in turn took a personal interest in "Dharma's boys". Thus he created a pool of well qualified radiotherapists and oncologists to ensure that his vision would see fruition. Dr Perdamen Singh, who succeeded Dato' Dr Dharmalingam as Head of Department and continued his predecessor's vision of expanding radiotherapy and oncology services in the country, and Dr S Ganesan, who went on to be the first radiotherapist in the private sector, are products of this endeavour. The other luminaries of Dato' Dr Dharmalingam's tutelage are Dr Tan Meng Kuan, who became Director of Oncological Services in Tung Shin Hospital, and Dr Felix Sundram, who changed his allegiance to nuclear medicine and excelled in that discipline in Singapore. Through it all, ancillary staff were not neglected as clinical radiographers and nuclear medicine technologists were all sent for training in UK as well.

Dato' Dr Dharmalingam also wanted the best equipment for the diagnosis and treatment of cancer patients, recalls Dr Lopez. He brushed aside arguments that Malaysia was not ready for sophisticated machines like Linear Accelerators and Betatrons and should instead settle for less sophisticated machines like the Cobalt-60 teletherapy machines. This was an act of faith, explained Dr Francis, as Dato' Dr Dharmalingam had studied the benefits the equipment would bring to his patients and made the bold move to purchase these machines, ensuring the suppliers would provide comprehensive maintenance to ensure the equipment performed optimally. He even persuaded the Ministry of Health Malaysia to employ an Electrical Engineer, Mr John Jayakar Subramaniam, to be the in-house trouble-shooter so that minor issues could be attended to immediately.

In 1978 the first CAT scan machine in the country was installed in the Radiotherapy Department at KLGH. This was a very controversial development at the time as the CAT scan is a diagnostic machine and should have been in the Diagnostic Radiology Department. Many feathers were ruffled, recalls Dr Lopez, but, as usual, Dato' was well ahead of his time; he had correctly anticipated that CAT Planning would soon be widely used in radiotherapy.

As oncology services grew, it became clear that it had to be de-centralised. "Initially, the only radiotherapy and oncology facility was located at Kuala Lumpur General Hospital (KLGH)," said Dr Francis. "While there were outlying clinics in Johor Bahru, Ipoh, Penang, Kota Kinabalu and Sarawak, all patients had to receive treatment in Kuala Lumpur." For better care, patients needed to be treated closer to home. This would ensure treatment compliance and also allow the family to be with the patient during the long and difficult treatment period. Towards this end, radiotherapy centres were established in various states in Peninsular Malaysia and in Sabah and Sarawak.

Over the years, chemotherapy has also improved, said Dr Francis. Targeted therapy and immunotherapy are now at the forefront of cancer treatment and in some cases have replaced chemotherapy as first-line treatment in some cancers.

A founding member of Hospis Malaysia, Dr Lopez also notes that palliative care now has a major role in the management of patients whose cancer has failed to respond to curative treatment. In the early days, such care was not available and patients who were terminally ill had to manage as best they could. To address this gap in cancer care, staff were sent to Australia for short courses in palliative care and today this service is available in all oncology centres.

A Family's Legacy, A National Service

These changes fondly recalled by Malaysia's pioneers in oncology are also reflected in the history of the National Cancer Society Malaysia (NCSM) and the family which made it possible. The Society, founded in 1960 by Dato' Dr Dharmalingam, Malaysia's first clinical oncologist, continues to fulfil its mission under the leadership of his daughter, Dr Saunthari Somasundaram.

"My journey with cancer started with my mother. Since I was five years old, mom had cancer. She had a spinal tumour to start with; then, when I was at medical school, she developed ovarian cancer. When I was doing my housemanship in the first year, she developed breast cancer. This is what really started my interest in cancer. It wasn't so much the therapeutic aspect of cancer but patient awareness and survivorship issues. My mother was privileged in the sense that she had a husband who was a radiation therapist, with the whole world at her feet in terms of treatment options and knowledge. And still, even with all that, it was difficult. It wasn't an easy journey. So you can imagine what it was like for people who had absolutely nothing, who had no knowledge, who didn't have the connections, etc. And that's what I saw, because when she was first treated at HKL, I was her [caregiver] at the time. That's when I really shifted from the idea that you're a doctor helping someone, to what a patient or carer might feel about their diagnosis. For me, that was a revelation," recalls Dr Saunthari.

Unsurprisingly, cancer and NCSM had always been a prominent part of Dr Saunthari's life, from exposure through her father's work and mother's illness, to discussions over dinner and helping out at the Society clinic after returning from the UK in 2000.

"Prior to 2000, NCSM was a very medical organisation – it set up the first Cytology Screening Centre with the Institute of Medical Research (IMR) in 1966 and started cervical cancer screening and opened the first Mammography Screening Centre in Southeast Asia in 1985. In 1998, NCSM operated the Nuclear Medicine Centre and a cancer treatment centre at Tung Shin Hospital. As an organisation, NCSM was very focussed on providing what was needed, working to augment services in Hospital Kuala Lumpur. If government facilities couldn't do it, NCSM would try to help," she explained.

Mammography Screening Centre and 3D Tomosynthesis Mammogram Facility

Bone Scan Machine at NCSM's Nuclear Medicine Centre

Cytology Screening Centre in collaboration with Institute of Medical Research (IMR)

"From 2003, we expanded our role to give more emphasis on education, awareness and public programmes. This change was partly influenced by my mother's experience, as many cancer patients had no idea why they were there. It's not just about the treatment aspect; they need to understand what is happening or going to happen to them. This is why we have a Resource Wellness Centre where people can go to get information, find support and talk to others, in a place which is not a hospital. It has grown organically and now it's more of a movement to make the cancer journey more holistic," said Dr Saunthari.

In 2008, NCSM streamlined its efforts, building on three pillars: Educate, to empower patients and assist healthcare professionals to address the disconnect between doctors and patients; Care, a gradual relinquishing of clinical work as more cancer facilities are now available; and Support, an area of growth to help break the stigma and allow patients to celebrate life with cancer. Under this new direction, the motto 'Giving Hope, Celebrating Life' is slowly encouraging more survivors to come forward to talk about their cancer experience.

Looking back on NCSM's 50-year history, Dr Saunthari said, "I feel we are going in the right direction but there is a lot more to do and many areas that need to be consolidated. The level of awareness and health literacy is low as the system is more oriented towards treatment, with less emphasis on the nurturing of health in a community setting. This needs to be driven and supported by many ministries and departments – it needs to be part of education and industry so it can seep into the fabric of society before change can occur. Sadly, ours is a culture of fatalism, of waiting to be told what to do. We are complacent until something happens, reactive with no future planning and only seeing things in the short term. Change will take decades of sustained action but all too often we want to see change quickly and if it doesn't happen, we give up."

Explaining further, she said, "We need to build the process and create stepping stones to develop a community that is empowered in the right way, build on the survivorship movement, and involve the people who have the right skills and expertise that can help. As a Society, NCSM is going back to our roots of training allied health professionals and general practitioners, capacity-building for screening and early detection to be available at primary healthcare services, advocacy for better cancer control in various areas, and driving youth programmes on cancer and non-communicable diseases as there are many shared risk factors. In essence we want to empower patients so they are knowledgeable and able to make the right decisions for themselves. We need to be honest – everyone has a different cancer journey and it's never 100% the same. But you can have a better cancer journey, and it shouldn't be measured by whether you live or die but how you lived that journey."

Starting from Scratch: The Story of University Hospital's first Oncology unit

Advancements in technology have made great inroads into the way cancer is treated. Today, one of Malaysia's most vocal advocates recalls how he started his career with a monumental task. Although it was 25 years ago, Dato' Dr. Mohd Ibrahim Abdul Wahid, who is now Medical Director at Beacon Hospital, recalls his early efforts clearly.

"When I came back in 1993, I was asked to set up the cancer unit in University Hospital (UH). From 1993 until 1997, I designed, planned and organised cancer services for University Hospital's first Oncology Unit. I was the first Head of Department of Clinical Oncology but when I came back here I was on my own – there was nobody else, no one senior who could mentor me. I had to develop a lot of things myself and there was nobody to help me."

With few resources initially, Dato' Dr Ibrahim gathered a core group who were instrumental in the early development of the unit. These included physicists Premavathy Rassiah and Khoo Boo Huat, who were soon joined by clinical oncologist Dr Matin Mellor Abdullah; together with Dato' Dr Ibrahim, they started from scratch to realise the formation of the Department of Clinical Oncology at UH.

Right from the onset, Dato' Dr Ibrahim made technology his friend, augmenting the skills and knowledge of the core team by connecting with experts around the world, whom he proudly calls his 'international advisors'.

"In the mid-1990s we had the Internet and email. You take these things for granted now but in 1990 it was 'Wow, we have email!' No one in Malaysia could give me any advice on machines so I was communicating with top physicists in US and Europe; I had a lot of help on how I should be developing the radiotherapy unit at UH," said Dato' Dr Ibrahim. "At the time, there was only the Cobalt machine and basic linear accelerator in Malaysia. We brought in cutting edge technology that was not available then – first we brought in the multileaf collimator, which did not exist in Southeast Asia yet, then CT simulation, which was something so new that very few people knew it."

Under his leadership, the Oncology Unit at UH became a pioneer in CT simulation and 3D planning. They also designed a filmless department, planning treatment without the need for X-ray films to determine the treatment field for each patient. With this filmless system, the department could verify a patient's treatment using a seamless online verification technique.

"We were the second department in the world to go completely filmless, after Austria. Everything was done on the computer. Not many people know we were the second filmless hospital in the world," he said proudly.

Today, Dato' Dr Ibrahim continues to cite significant improvements across different areas of cancer therapy thanks to the precision that technology offers.

All those who serve in the field of oncology today owe a debt of gratitude to the men and women who helped to drive the growth and progress of cancer therapy in Malaysia. The difficulties they faced and their hard-earned lessons laid the foundation for hundreds of individuals who have found their calling in this field, not to mention the thousands of patients whose lives have been touched throughout their cancer journey.

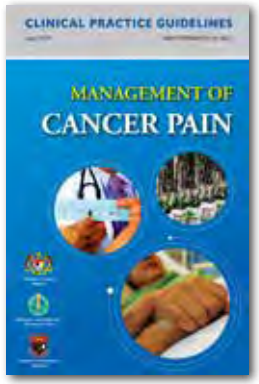
Chapter 5:

Partners in Driving Development of Oncology Education and Services

The advancement and evolution of the entire field of oncology involves many different parties, from medical and learning institutions to non-governmental organisations. With oversight from the Ministry of Health, the Malaysian Oncological Society (MOS), in tandem with learning facilities such as University Malaya Medical Centre (UMMC) and Universiti Kebangsaan Malaysia Medical Centre (UKMMC) work ceaselessly to enhance the practice of oncology in the country, while addressing the rising incidence of cancer in Malaysia and saving lives.

Across this broad front, oncologists (many of whom are MOS members) and other healthcare specialists from related fields make an effort to fight cancer in any way they can. This includes contributing their expertise through various Ministry steering committees, taskforces and training programmes relating to cancer care, such as the formulation of Clinical Practice Guidelines for treating cancer.

These guidelines, which are developed based on clinical evidence and approved by the Ministry of Health, are tailored to be relevant in local scenarios. They are essential tools for oncologists and other healthcare professionals to provide the best care possible for those affected by cancer.



Over the years, MOS has also been involved in many programmes and initiatives in collaboration with government organisations and ministries, academic institutions and clinical research facilities as well as healthcare companies and NGOs.

Non-Governmental Organisations

Prominent organisations dedicated to increasing awareness about cancer include the National Cancer Society of Malaysia (NCSM) and the National Cancer Council (Majlis Kanser Nasional; MAKNA). In addition, Hospis Malaysia, which offers valuable guidance to those who are terminally ill, works with many cancer patients.

These groups and many others regularly organise events to educate the public, providing information about cancer symptoms through talks, seminars, media interviews, newsletters and brochures. They are also tireless advocates for early detection and treatment, and often raise funds to support further research and activities, or to provide aid to patients who require financial assistance.

There are also many patient groups that range from small gatherings at hospitals to larger groups such as the Breast Cancer Welfare Association (BCWA) which provide counselling and support for those affected by cancer. Other NGOs such as Rotary Clubs and women's organisations – some of which are not specifically associated with cancer – are also known to carry out cancer education activities in the form of community events.

National Cancer Society Malaysia (NCSM)

NCSM is Malaysia's oldest cancer organisation, officially launched by YAB Tun Abdul Razak in 1966. It was founded to provide education, care and support services for people affected by cancer. Initially, NCSM sponsored medical training and education for medical professionals involved in cancer care and treatment. In 1971, the society started discussions to set up the National Cancer Registry, which was later handed over to the Ministry of Health Malaysia.

Today, NCSM runs the Cancer and Health Screening Clinic, Nuclear Medicine Centre, Resource and Wellness Centre, Quit Smoking Clinic and the Children's Home of Hope for underprivileged children from other states who are undergoing cancer treatment at KLGH. In addition, NCSM also has branches in six states namely Johor, Negeri Sembilan, Melaka, Perak, Penang and Sarawak.

Since 2000, NCSM has refocussed its efforts on prevention, early detection, advocacy, support, and reducing the stigma of cancer. Its current initiatives include reaching out to as many Malaysians as possible, offering public education, counselling and screening services in addition to providing comprehensive materials on its website and social media pages. In conjunction with its 50th year anniversary in 2016, NCSM launched its Cancer Information Service Helpline (CIS), the Young Cancer Survivors Group, as well as the 'Stronger than Cancer' Mobile Application to improve access to cancer support and information for Malaysians no matter where they are. NCSM also hosted the World Cancer Congress in 2018, is the steering committee of Non-Communicable Diseases (NCD) Malaysia, and active in various national tobacco control groups.

Picture from NCSM

Picture from NCSM

National Cancer Council (Majlis Kanser Nasional; MAKNA)
Since its launch in 1995, MAKNA has worked to provide financial assistance and counselling for cancer patients in need, promote screening for early cancer detection, support research and raise awareness among the public.

Among its initiatives are the PPUKM-MAKNA Cancer Centre which has seen 17,448 patients admitted between 1999 and 2017, and a Stem Cell Registry which now boasts 30,467 registered stem cell donors. MAKNA's Digital Mobile Mammogram Unit, which has performed a total of 22,844 mammograms to-date, will soon be available in Sabah and Sarawak to improve access and enable early detection of breast cancer.

The organisation also offers scholarships for cancer survivors. MAKNA's efforts are supported by fund-raising activities, public donations and corporate sponsors, and over 20 years has helped over 49,000 cases through various MAKNA Bursary Programmes. Apart from assisting underprivileged cancer patients with financial aid, appliances, prostheses, surgical equipment, milk supplements and non-formulary drugs, MAKNA also offers services for the community such as a Cancer Helpline for patients or caretakers to seek advice and temporary housing for patients undergoing treatment. In addition, MAKNA also organises exhibitions to raise awareness about cancer, and home visits to ensure the well-being of patients.

In order to promote cancer research among young scientists, the MAKNA Cancer Research Award was initiated in collaboration with the Academy of Sciences Malaysia; since 2017, RM1.4 million has been allocated to institutions of higher learning and research institutes.

Hospis Malaysia

Respect for life, compassion for its patients and knowledge of evidence-based palliative care are guiding principles for the staff and volunteers at Hospis Malaysia. Its services and facilities are free-of-charge to individuals with life-threatening illnesses, of whom more than 90% are cancer patients.

As palliative care is an important aspect within the framework of cancer care, the relationship between MOS and Hospis Malaysia goes back a long way - one of its founders was Dr Francis Lopez, a clinical oncologist. Its CEO, Dr Ednin Hamzah, served as a board member for MOS until 2012.

Since its establishment, Hospis Malaysia has been a strong advocate that every Malaysian should have access to palliative care. Founded in 1991 with only one nurse and two volunteer doctors, today the organisation has a full-time palliative care team comprising nurses, doctors, a pharmacist and an occupational therapist, making it the largest hospice in Malaysia based on the number of patients referred.

In addition to its many services, the organisation also provides education and training. Its milestones include its first workshop in 1999, the inaugural 'Voices for Hospices' event in 2005, and the introduction of a palliative care symbol to unite the cause in 2014. This symbol has since gained global recognition. Hospis Malaysia also participated in the design and implementation of the 'Palliative Medicine Specialist Training' curriculum for the Ministry of Health.

In recognition of its contributions, Hospis Malaysia was awarded a research grant from WHO, Altarum Institute and Diana Fund to conduct research on 'Decent Values in Palliative Care' in 2009-2010. In 2012, it was instrumental in the development of the National Paediatric Palliative Care Programme, which was launched in the presence of the Duke and Duchess of Cambridge and in 2016 published 'Palliative Care Needs Assessment: Malaysia's Report'. Hospis Malaysia continues to work with the Ministry of Health in developing palliative care services in Malaysia.

Cancer Research Malaysia

Founded in 2002, Cancer Research Malaysia (CRM; formerly Cancer Research Initiatives Foundation) is an independent, non-profit organisation dedicated to learning more about cancers which are prevalent in Asian populations, especially breast, ovarian, nasopharyngeal and oral cancers. In 18 years, it has grown dramatically from six researchers in 700sf of space to 40 researchers in over 7000sf of space and its Chief Scientific Officer Prof Datin Paduka Dr Teo Soo-Hwang recently received an honorary Order of the British Empire from Queen Elizabeth II in recognition for her contribution to cancer research.

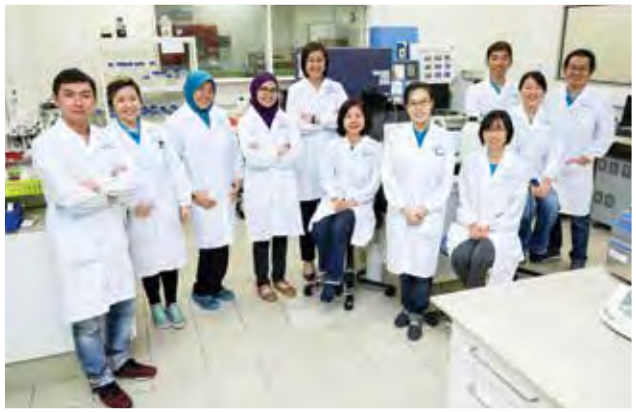
Prof Teo describes CRM's goal as 'building a future free of the fear of cancer', where therapy will be affordable and accessible, and doctors are 'able to give the right patient the right drug at the right dose, at the right time.'

This would only be possible with a 360-degree approach, encompassing better screening strategies; enabling access to genetic counselling and testing; enabling better prevention and treatment; and ensuring lives are not lost through inaction. Only a combined approach will make a difference in reducing the burden of cancer and improve survival, says Prof Teo.

Towards this end, CRM engages in breast cancer risk management programmes, customising treatments for Asian patients, innovations for early detection such as mobile phone apps, dietary intervention studies for cancer prevention, immunotherapy development programme, and a navigation programme. In the patient navigation programme, CRM partners with hospitals and community-based charitable organisations to provide financial, logistical and emotional support to newly diagnosed breast cancer patients in low income groups, helping them to navigate their complex journeys upon diagnosis with cancer.

To-date, CRM has conducted research on the links between diet, lifestyle and genetic factors affecting breast cancer risk among Malaysians; identified ways to stimulate immune systems and prevent pre-cancerous growths from progressing into cancer; and conducted research into hereditary gene markers BRCA1 and BRCA2, allowing those with high risk of developing breast cancer to intensify screening or undergo preventative surgery.

With its strong foundation in research, CRM also collaborates with top scientists around the world, making Malaysia a recognised centre for cancer research and grooming young scientists who are dedicated to finding newer, better ways to treat cancer.



Clinical Research Malaysia

Clinical Research Malaysia (CRM), founded in 2012, serves as a liaison between companies, regulatory bodies and investigators while serving as an advocate for Malaysia as a preferred destination for industry-sponsored research. In 2017 alone, CRM facilitated research in disease areas such as cardiology, oncology and gastroenterology across the country, with the help of over 120 CRM Study Coordinators. Its multi-disciplinary team offers training for investigators, to ensure high levels of patient monitoring and data collection, with stringent adherence to treatment protocols and ethical guidelines.

CRM's role in cancer research is significant - in 2017 alone, there were 19 oncology clinical trials, the second-highest after cardiovascular. Furthermore, from 2015 to 2017, out of all the therapeutic areas, clinical trials in oncology was among the top three, many of which comprised of non-small cell lung cancer, breast cancer, gastric/gastroesophageal junction carcinoma, colorectal cancer and liver cancer.

Clinical research is also a key focus area for the Ministry of Health, as clinical research brings many benefits to patients as well as the nation, and CRM made history in 2017 with the launch of the Malaysian Phase 1 Clinical Trial Guidelines, designed as a standardised reference for conducting the of first-in-human trials in the country.

"Clinical research is part of treatment access; having more clinical trials in Malaysia offers doctors more options to treat patients who have exhausted all other possibilities. Many Malaysians are fearful of being involved but clinical trials are highly regulated and for those who respond well, it can result in better quality of life. What's more, being part of a clinical trial is to contribute to scientific knowledge, which could lead to breakthroughs that help patients in the future," said Dr Akhmal Yusof, CEO of Clinical Research Malaysia.

Attracting more clinical trials to be conducted in the country also offers more Malaysian doctors the opportunity to be involved in the global scientific community. CRM actively builds stronger ties between researchers in different nations, with partnerships across the region. These include C&R Research Inc., Korea's largest research group; Intellim Corp of Japan, the third largest Japanese contract research organisation (CRO); Novotech the leading Asia Pacific CRO based out of Australia; Taipei Medical University Taiwan; and First Affiliate Hospital Zhejiang University China. These cross-country partnerships are inked to provide mutual support in areas like business development, clinical trial operations and training.

As part of its ongoing advocacy activities, CRM also raises awareness among the Malaysian public, which is largely untapped and offers companies a diverse ethnic pool. In 2017, CRM organised a series of 'I AM AWARE' nationwide roadshows, which encouraged over 3,000 patients and volunteers to register their interest in clinical trials, and the first-ever Clinical Trials Day which saw another successful celebration in 2018 at the National Cancer Institute in Putrajaya. This annual event appreciates all the individuals who play a role, from medical professionals and academia to patients and their loved ones.

Just as 'it takes a village to raise a child', the combined efforts of the Ministry of Health Malaysia, healthcare professionals across different fields of expertise, non-governmental organisations and private individuals all help to make a difference, each within their own sphere of influence, helping to raise the bar on cancer prevention, treatment and care.

Chapter 6:

Cancer in Malaysia

The impact of cancer is often seen through personal stories from patients or survivors, and the grief of family members. While the personal loss leaves a void that can't be filled, its impact is also significant for the nation, making it an important issue to address.

According to the Malaysian National Cancer Registry Report 2012-2016, 115, 238 new cases of cancer were diagnosed, an increase from the 103,507 recorded between 2007 and 2011.

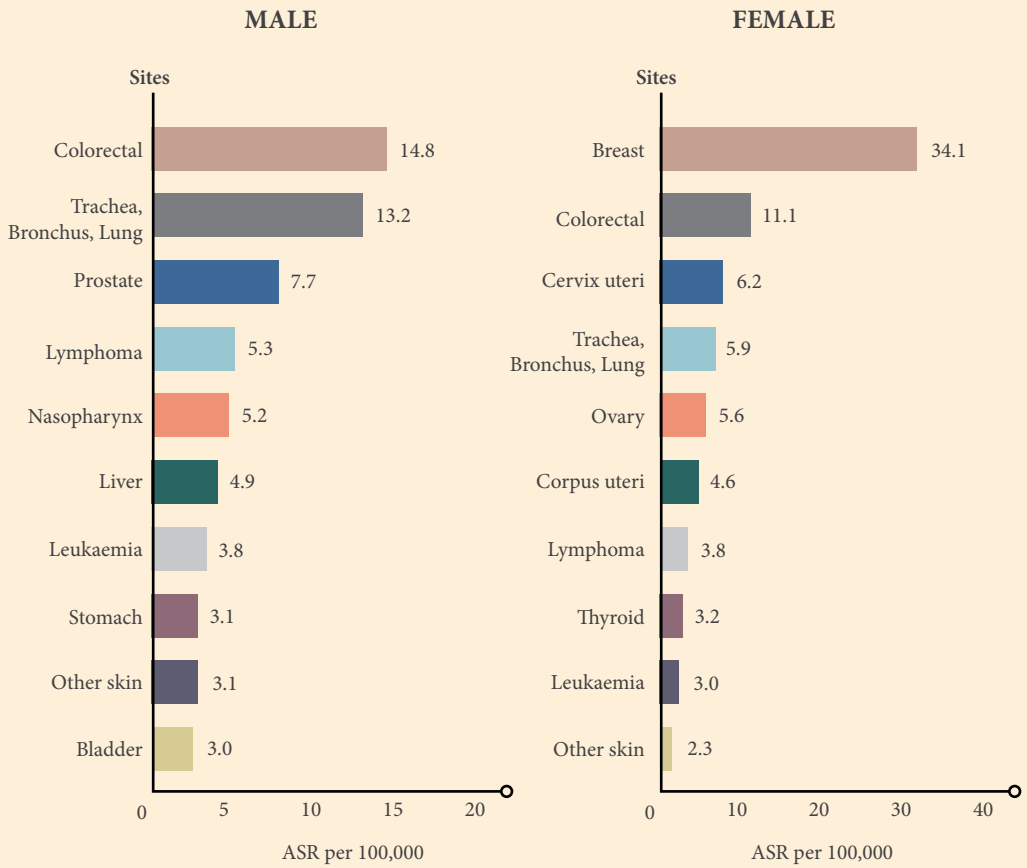
The report also noted that the number of patients presenting at stage 3 and 4 had increased from 58.7% to 63.7%, which affects survival rates.

The most common cancers among men were colorectal, lung and prostate cancers while the most common among women were breast, colorectal and cervical cancers.

Existing data also shows that, over the past 20 years there has been a steady increase in cancer deaths, accounting for 8.9% of all deaths in Ministry of Health hospitals in 1996, and the figure increased to 13.6% in 2015.

Based on global predictions, this trend is expected to continue, with the projected number of cancer patients in Malaysia increasing by more than 50% between 2012 and 2025.

Age-standardised incidence rate for ten common cancers by sex, Malaysia, 2012-2016



Globally, the main risk factors for cancer are tobacco use, alcohol consumption, unhealthy diet and physical inactivity but in many parts of the world, including Malaysia, chronic viral infections such as Hepatitis B (HBV) and Hepatitis C (HCV) and the human papilloma virus (HPV) which leads to liver cancer and cervical cancer respectively, are also significant contributors.

Age-standardised incidence rate for ten most common cancers by major ethnic groups, Malaysia, 2012-2016

	ASR per 100,000 population by ethnicity		
Sites	**Malay**	**Chinese**	**Indian**
Colorectal	21.6	34.8	19.5
Breast	31.5	40.7	38.1
Trachea, Bronchus, Lung	17.4	23.8	8.7
Prostate	6.3	10.1	6.8
Lymphoma	9.5	8	6.7
Nasopharynx	2.7	8.6	0.6
Liver	4.3	6.3	3.5
Leukaemia	6.8	6.7	5.4
Stomach	1.6	4.2	3.5
Bladder	3.3	3.0	2.4
Cervix uteri	4.6	6.8	5.5
Ovary	5.9	5.4	5.4
Corpus uteri	4.4	5.1	5.5
Thyroid	3.8	2.0	3.2
Other skin	3.9	7.5	3.4

To-date, many efforts have been initiated by the Ministry of Health to address rising cancer rates while assorted government bodies, non-government organisations and private companies also carry out numerous activities. These efforts are often run independently hence there is a need for better integration, collaboration and coordination across various groups in order to make the best use of available resources and expertise.

Tackling Cancer on a National Level

In 2015 the Ministry of Health Malaysia formulated the National Strategic Plan for Cancer Control Programme (NSPCCP) 2016-2020, replacing the earlier National Cancer Control Blueprint (NCCB) 2008-2015 with a newer and more comprehensive structure. The NSPCCP is the result of input from oncologists, clinicians, public health experts, pathologists, radiologists, academicians, scientists, researchers and policy makers with the objective of reducing morbidity and mortality from cancer while improving quality of life for cancer patients and their families.

The incidence and impact of cancer can be substantially reduced through better prevention, early detection and treatment hence the NSPCCP identifies eight areas of focus: primary prevention, screening, early detection, diagnosis, treatment, rehabilitation, palliative care, and traditional and complementary medicine.

Primary prevention

Education is the primary tool in prevention; armed with greater awareness and knowledge about cancer and its common risk factors, individuals can make a greater effort to practise healthier lifestyles, be more alert to warning signs and take appropriate action such as seeking a doctor's advice.

Approximately 30% of cancer deaths are linked to five lifestyle risks, which can be changed or modified. These are high Body Mass Index (BMI), low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use. Among these, tobacco use is the most significant risk factor, responsible for over 20% of global cancer deaths and 70% of global lung cancer deaths. This is followed by cancer-causing infections by viruses such as HBV, HCV and HPV, which cause up to 20% of cancer deaths in low- and middle-income countries.

Government-led efforts, mostly spearheaded via the Public Health Programme, include:

- health education and awareness activities on various risk factors
- action plans for smoking, alcohol, physical activity and diet which support the National Strategic Plan for Non-communicable Disease 2016-2025
- legislation to regulate tobacco, food safety, drugs and chemicals
- immunisation programmes

Screening

Screening involves checking for disease among those who may not be showing any noticeable symptoms. However it is an important aspect in prevention as screening allows early detection of cancer, helping doctors to observe any abnormality or early indication of disease before symptoms develop. When cancer is detected early, doctors can intervene quickly with appropriate treatment and prevent it from getting worse hence screening helps to reduce patient suffering (morbidity) and the likelihood of death (mortality).

In Malaysia, screening for breast, cervical and colorectal cancer is offered at government health clinics, as screening is most effective when it is accessible to large populations. These clinics are set up with the appropriate equipment, technology and trained individuals to conduct the necessary tests with follow-up for those whose results show abnormalities.

Early detection

While screening is conducted among those who have no symptoms, WHO defines early detection as awareness of the early signs and symptoms of cancer so that a diagnosis can be made early, when therapy is most effective. With early detection, there is a better chance to identify precancerous lesions or for cancer to be detected before it spreads to other organs. Unfortunately, statistics indicate that most cancers are only detected at late stages, due to low awareness about the signs and symptoms of cancer.

Diagnosis

An accurate diagnosis allows doctors to begin a cancer management plan; this may include several clinical and diagnostic tests.

Treatment

Effective cancer management begins with early detection and accurate diagnosis in order for treatment to be initiated promptly. Treatment often involves many modalities and should be individualised using evidence-based guidelines and protocols.

Rehabilitation

Effective rehabilitation aims to increase a patient's independence, reduce the length of hospital stay and improve their quality of life. It encompasses physical, psychological, social, vocational and educational aspects with active involvement from the patient, their families and caregivers as well as the multi-disciplinary rehabilitation team.

Palliative care

Palliative care, through pain management and other services which help to meet physical, psychosocial and spiritual needs, offers patients better quality of life, including those patients for whom cure is not a feasible goal. Since 1991, palliative care has been slowly growing, with the first Palliative Care Unit (PCU) established in 1995 at Queen Elizabeth Hospital in Kota Kinabalu, Sabah. Today, palliative care has been established as a medical subspecialty, with the public becoming increasingly aware of the need for this important service.

Traditional and complementary medicine

The country's multi-ethnic composition allows access to a rich heritage of traditional and complementary medicine. While there is some research indicating traditional and complementary medicine has benefits in improving the quality of life for patients undergoing treatment, its role in cancer treatment is difficult to define as the possibility of drug interactions and its diverse practices make it difficult to identify consistent methodology; this in turn leads to lack of integration within conventional cancer management teams.

"In Malaysia, more than half the patients come at a late stage. Cancer is horrible towards the end, if neglected, and there are four things that allow it to reach that level:

- ***Sheer ignorance***
- ***Lack of means and/or social restraints, such as having to care for their children and husband or having to work***
- ***Mistrust or total rejection of treatment***
- ***Hoping for the best while doing nothing***

But if [patients] come earlier, knowing that it's treatable at an early stage, it wouldn't go to that level and it wouldn't be horrible."

~ Professor Emeritus Dato' Dr Md Tahir bin Md Azhar

Malaysia's Cancer Registries

Rising cancer rates are an ongoing cause for concern and greater efforts are needed from all parties to rein in the disease. To enhance our understanding of how best to fight this upward trend, data-gathering is an essential tool in learning how cancer affects the nation and its people. Experts estimate that a third of cancers are preventable, and another third can be effectively treated with early detection and treatment.

In Malaysia, two primary registries play an important role, enabling academicians and researchers to evaluate the most pertinent findings so they can be used to formulate effective programmes for the prevention and treatment of cancer.

National Cancer Registry (NCR)

The National Cancer Society Malaysia (NCSM) set up Malaysia's National Cancer Registry (NCR) in 1971. It is a population-based registry that collects data on all cases of cancer within a geographical area, from all sources that treat cancer patients, allowing for calculation of cancer incidence within a defined population. Sources encompass public and private medical hospitals, universities, health clinics and even general practitioners. Since 1993, the Ministry of Health Malaysia has managed the NCR. It was first rolled out in Penang and thereafter in Sarawak, Kelantan, Pahang, Johor and Sabah. Reports were issued in 2002 and 2003, with the third report spanning cases from 2003 to 2005.

Since 2007, all Malaysian states have individual registries, with the National Cancer Institute serving as secretariat since 1 January 2015. Presently, the most current data available is the Malaysia National Cancer Registry Report 2012 – 2016, which is the second 5-year report since the registry was established in all states. Its objectives are to:

1. Determine the disease burden that can be attributed to cancer, by quantifying the magnitude of cancer morbidity and mortality, and its geographic and temporal trends in Malaysia
2. Identify subgroups in the population who are at high risk of cancer, which should be targeted for cancer prevention
3. Identify potential risk factors involved in cancer
4. Evaluate cancer treatment, control and prevention programmes
5. Stimulate and facilitate epidemiological research on cancer

For this labour-intensive effort, information is collected from three main sources: the Ministry of Health hospital information system, National Registration Department and, most importantly, from individual doctors involved in cancer diagnosis and treatment who voluntarily report cases to the NCR. In this way, policies for cancer prevention and management can be developed based on local data.

National Cancer Patient Registry (NCPR)

The National Cancer Patient Registry consists of patients treated in hospitals, detailing patient demography, treatment received and patient outcome. It functions as a clinical database to help clinicians evaluate the health outcomes of patients undergoing cancer treatment in Malaysia. Its objectives are to:

- Describe the natural history of cancers, from patient characteristics and management to patient outcome, survival and quality of life across various subgroups and sectors
- Determine the clinical effectiveness of treatments for cancer, including cost effectiveness
- Monitor the safety and harm of products used in the treatment of cancers by serving as an active surveillance system for unexpected or adverse events
- Evaluate access to and quality of cancer treatment services, assessing the differences between providers or patient populations, and assessing performance against comparative benchmarks to identify disparities in access to care while demonstrating opportunities for improvement

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(Pertubohan 3)

MALAYSIA

AKTA PERTUBOHAN, 1966

BORANG 3

PERATORAN[2] PERTUBOHAN, 1966

(Peraturan 5)

Perakuan Pendaftaran

Ada-lah dengan ini di-perakui bahawa

PERSATUAN ONKOLOJI MALAYSIA (THE MALAYSIAN ONCOLOGICAL SOCIETY);

Institute of Radiotherapy, Oncology and Nuclear Medicine,
Hospital Besar, Kuala Lumpur

telah pada hari ini di-daftarkan sa-bagai suatu pertubohan di-bawah sekshen 7 dalam Akta Pertubohan, 1966, dan bahawa nombor pendaftaran-nya ia-lah 1746 (Selangor)

Di-perbuat dengan di-tandatangani oleh saya pada 6 haribulan Januari, 1976.

(KAMSIN BIN HJ. [illegible])
Pendaftar Pertubohan,
Malaysia

SALINAN DIAKUI SAH

KAMISAH BT MOHD YUSOF
Penolong Pendaftar Pertubohan
Selangor

Chapter 7:

MOS through The Years

The Malaysian Oncological Society was officially born on 6 January 1976 as a professional, academic society with the purpose of enhancing the knowledge of its members. Original society members consisted of oncologists, physicians and surgeons but today its members include nurses and other allied health professionals involved in the field of oncology, numbering 200 professionals. Since its founding, the Society has been an advocate for continued learning, pushing the bar ever higher for all those who play a role in cancer management and treatment.

During its early years, the small number of oncologists, pressing demands of clinical work and limited resources compelled the newly-formed Society to remain dormant until 1996. Thereafter, beginning with the leadership of Prof Dr Tahir Azhar, Dr Albert Lim Kok Hooi and Dr Gurcharan Singh Khera, the Society took its first steps in fulfilling its objectives, organising its first Annual Scientific Meeting in 1997. MOS would also launch its website in 2004, now newly revamped at https://mymos.my, and go on to grow its members and widen its sphere of influence.

In recent years, the Society championed and accomplished the formation of a Chapter of Oncology in the College of Radiology, under the Academy of Medicine Malaysia, with the aim of supporting and growing this important speciality. In the coming years, with increased numbers, it is hoped that a College of Oncology will be formed, allowing for more oncologists to be trained.

MOS Committee Members

1996–1997

President : Prof Dr Tahir Azhar
Secretary : Dr Gurcharan Singh Khera
Treasurer : Dr Albert Lim Kok Hooi
Council Members : Dr Ahmad Radzi Badruddin
Dr Mohd Roslan Haron
Dato' Dr Mohamed Ibrahim A. Wahid
Dr Adel Zaatar

2001–2003

President : Dr Albert Lim Kok Hooi
Secretary : Dr Gurcharan Singh Khera
Treasurer : Dr Matin Mellor Abdullah
Council Members : Dato' Dr Mohamed Ibrahim A. Wahid
Dr Mohd Roslan Haron
Dr G Selvaratnam
Dr Anita Zarina Bustam
Dr Ednin Hamzah
Dr Fuad Ismail

2004–2006

President : Dr Gurcharan Singh Khera
Secretary : Dato' Dr Mohamed Ibrahim A. Wahid
Treasurer : Dr Ahmad Kamal Mohamed
Council Members : Dr Matin Mellor Abdullah
Dr Mohd Roslan Haron
Dr G Selvaratnam
Dr Ednin Hamzah
Dr J K Joseph
Dr Fuad Ismail

2007–2008

President : Dr Albert Lim Kok Hooi
Secretary : Dr Gurcharan Singh Khera
Treasurer : Dr Matin Mellor Abdullah
Council Members : Dr Fuad Ismail
Datuk Dr Nor Hisham Abdullah
Dr Foo Yoke Ching
Dr Lam Kai Seng
Dr Gerard Lim Chin Chye

2008–2009

President : Dato' Dr Mohamed Ibrahim A. Wahid
Secretary : Dr Matin Mellor Abdullah
Treasurer : Dr Ahmad Kamal Mohamed
Council Members : Dr Fuad Ismail
Dr Foo Yoke Ching
Dr Lam Kai Seng
Dr Muhammad Azrif bin Ahmad Annuar
Dr Gerard Lim Chin Chye

2010–2012

President : Dato' Dr Mohamed Ibrahim A. Wahid
Secretary : Dr Matin Mellor Abdullah
Treasurer : Dr Ahmad Kamal Mohamed
Council Members : Dato' Dr Fuad Ismail
Dr Albert Lim Kok Hooi
Dr Daniel W Y Wong
Dr Ednin Hamzah
Dr Muhammad Azrif bin Ahmad Annuar

2013–2015

President : Dr Ahmad Kamal Mohamed
Secretary : Dr Matin Mellor Abdullah
Treasurer : Dr Muhammad Azrif bin Ahmad Annuar
Council Members : Dato' Dr Fuad Ismail
Dr Daniel W Y Wong
Dr Ho Gwo Fuang
Dr Biswa Mohan Biswal

2015–2018

President : Dr Matin Mellor
Secretary : Dr Muhammad Azrif bin Ahmad Annuar
Treasurer : Dr Tho Lye Mun
Council Members : Dato' Dr Fuad Ismail
Dr Ho Gwo Fuang
Dr Mastura Md Yusof
Dr Marniza Saad
Dr Azura R. Ahmad

2018–2021

President : Dr Muhammad Azrif bin Ahmad Annuar
Secretary : Dr Muthukkumaran a/l Thiagarajan
Treasurer : Dr Matin Mellor
Council Members : Dato' Dr Fuad Ismail
Dr Mastura Md Yusof
Dr Marniza Saad
Dr Azura Deniel
Dr Malwinder Singh

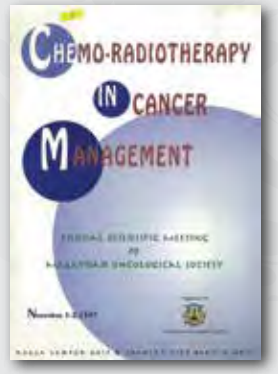
Advocates for Oncology

In addition to advising the Ministry of Health Malaysia on cancer-related matters and serving as an advocate for greater awareness among the public, MOS also organises talks, and hosts conferences and scientific meetings, all with the intention of promoting clinical excellence in the field of oncology. In its role as a centralised, professional body dedicated to oncology, the Society has organised events ranging from state and national events to international summits hosted in Malaysia. These events provide a forum for discussion, foster collaboration between different disciplines and support clinical research.

Since 1997, the Society has organised annual medical meetings in addition to working with other cancer-related organisations to educate healthcare professionals. The annual meetings are formally known as the Annual Scientific Congress of the Malaysian Oncological Society (ASCOMOS). Each year, a contemporary and relevant cancer theme is chosen. The following illustrates the various ASCOMOS themes over the years:

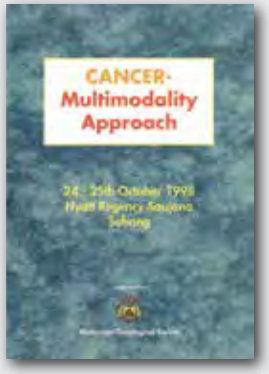
1997

Chemo-Radiotherapy Management



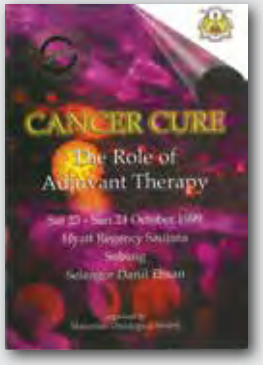
1998

Cancer – Multimodality Approach



1999

Cancer Cure: The Role of Adjuvant Therapy



2000

Surgical Adjuvant Treatment of Cancer

2001

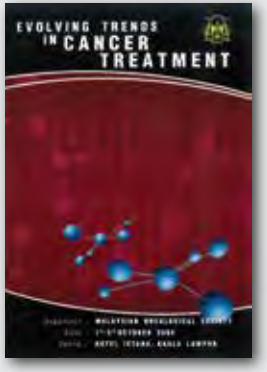
Optimising Cancer Treatment

2002

Progress in Cancer Treatment

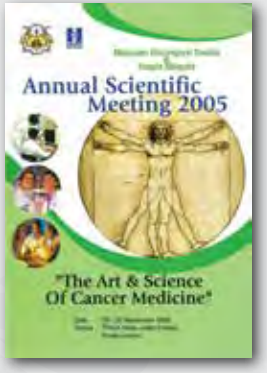
2004

Evolving Trends in Cancer Treatment



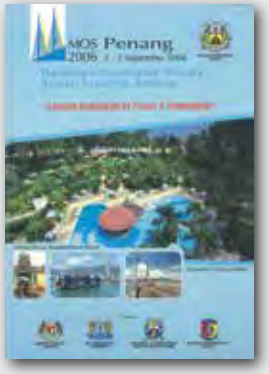
2005

The Art & Science of Cancer Medicine; organised together with Hospis Malaysia



2006

Cancer Management Today & Tomorrow



2007

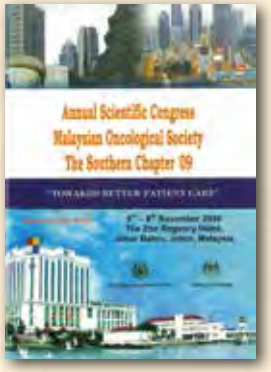
KL International Breast and Colorectal Cancer Congress, 'Evolving Frontiers in Cancer Management'

2008

Comprehensive Community Cancer Care: Evolution or Revolution

2009

Towards Better Patient Care [ASCOMOS 2009, Southern Chapter]



2010

Sustainable Cancer Care Through Multidisciplinary Approach, ASCOMOS 2010

2011

21st Asia Pacific Cancer Conference, 'The Science and Strategy of Cancer Control'

2012

Effective Cancer Treatment: Updating Professionals, Educating the Public, ASCOMOS 2012

2013

Championing Cancer Care in Malaysia, ASCOMOS 2013

2014

Asia Pacific Lung Cancer Conference (APLCC)

2015

Evolving Trends in Oncology: From Molecules to Man

Highlights of European Society for Medical Oncology (ESMO) 2014 Congress South-East Asia Summit 2015, 'Precision Medicine in Cancer Care'. Organised in collaboration with Malaysian Society of Haematology, Obstetrical & Gynaecological Society of Malaysia, and Singapore Society of Oncology.

2016

Embracing New Dimensions of Precision Cancer Management, ASCOMOS 2016

2017

Pushing the Boundaries of Cancer - Together, 29th ASCOMOS 2017

Through ASCOMOS and other MOS-organised events, stronger relationships are established amongst professionals, fostering a closer-knit community and building a stronger, more integrated foundation that transcends specialisations.

In 2018, MOS and the College of Physicians, Academy of Medicine Malaysia jointly organised the 52nd Malaysia-Singapore Congress of Medicine. With the theme "Battling Cancer - What is Your Role?", the event incorporated both ASCOMOS 2018 and the Annual Scientific Meeting 2018 of the College of Physicians. The joint effort welcomed doctors from various disciplines as well as peers from Academy of Medicine Singapore and Hong Kong Academy of Medicine.

In addition, the Society also serves as a valuable educational and academic resource for its members and other healthcare professionals, providing updates on current issues, advancements in oncology and other relevant topics, as well as encouraging clinical research.

52nd Malaysia-Singapore Congress of Medicine

The Hope Handbook: A Resource Guidebook for Newly Diagnosed Cancer Patients and 'Hope Handbook 2: A Guide for Cancer Caregivers' were developed to provide support for patients as well as their caregivers

The Society is a member of or affiliated with global bodies such as the South East Asian Radiation Oncology Group (SEAROG), Federation of Asian Organizations for Radiation Oncology (FARO), European Society for Medical Oncology (ESMO), International Atomic Energy Agency (IAEA), European Society for Radiotherapy and Oncology (ESTRO) and Union for International Cancer Control (UICC).

The Society also works regularly with other medical bodies, non-governmental agencies and corporations to provide accurate, up-to-date information to the public and media on topics such as cancer screening, prevention and treatment.

MOS lent its expertise to develop Step Up the Fight, a look into the life of a lung cancer survivor. Her journey provides patients, loved ones and caregivers with real-life experiences they can learn from.

Gone Too Soon – Malaysia's Pioneers in Cancer Treatment

With every passing, the nation loses invaluable knowledge and experience. With love and respect, the Society remembers these pioneers and many others who have passed on.

Dato' Dr SK Dharmalingam, 1929-2006

Malaysia's first oncologist, Dato' Dr SK Dharmalingam, headed Hospital Kuala Lumpur's Radiotherapy and Oncology Department from 1962 until 1982. He also founded the National Cancer Society Malaysia (NCSM), which was launched in 1966. His legacy lives on – NCSM celebrated its 50th anniversary in 2016 under the leadership of his daughter, Dr Saunthari Somasundaram.

Dr Albert Lim Kok Hooi, 1954-2014

A man of many interests and a prolific writer, Dr Albert Lim Kok Hooi was a long-time columnist for The Star newspaper and posted many insightful articles on the Malaysian Oncological Society website. His passion for sharing his knowledge extended to giving lectures to both public and medical audiences. A private individual, he kept his illness a secret from friends and acquaintances but those close to him remember his warmth, dedication and enjoyment of simple pleasures.

Dr Ahmad Kamal Mohamed, 1958-2016

A former MOS president, Dr Ahmad Kamal Mohamed also served NCSM in various capacities for over 20 years and played an important role in helping NCSM transition into a new phase following the death of Dato' Dr SK Dharmalingam. Dr Kamal was also known for his gentle empathy with patients and for always being accessible to others in spite of his many responsibilities.

Dr S Ganesan, 1937-2022

Dr S Ganesan received his training at Middlesex, UK in the 1960s and worked at Kuala Lumpur General Hospital (KLGH) Radiotherapy and Oncology Department from 1963 to 1981 alongside his cousin and mentor Dato' Dr SK Dharmalingam. He then left to set up the Oncology and Radiotherapy Centre at Pantai Medical Centre, Kuala Lumpur. Dr Ganesan was a kind and compassionate physician and an excellent clinician who lived by the philosophy "to cure sometimes, to relieve often, to comfort always". In his later years, he bore multiple ailments with patience, fortitude and cheerfulness until the day of his passing.

Dato' Dr T Aloysius Raj, 1949-2020

Dato' Dr T Aloysius Raj (or simply Raj to his colleagues and friends) was a quiet, caring doctor who always gave the best possible treatment advice and care to his patients. He was a well-respected colleague who thoroughly enjoyed his work and had a keen interest in innovative Brachytherapy techniques. Always ready with a helping hand, he enjoyed meetings and conferences as opportunities to interact with his peers and co-organised two MOS conferences in Penang (2006 and 2015).

Dr Selvaratnam Govindaraju, 1961-2010

Dr Selvaratnam, formerly Medical Director at Nilai Medical Centre, also served as Social Services Director of NCSM. His experience ranged from local and overseas appointments to corporate positions.