

Our pioneers

OUR TRAILBLAZERS AND TORCHBEARERS

What began as a spark of an idea ignited by the passion of doctors has become today's NCIS, a leading light in cancer care. Much credit goes to NCIS' pioneers; from day one, they have fuelled the NCIS mission with their drive and dedication. Here are 10 who have pushed the boundaries of patient care and clinical science. By Low Jat Leng

THE MAN WHO started it all was NCIS' founding director, **PROFESSOR JOHN EU-LI WONG**. A medical oncologist-haematologist, he graduated from NUS and completed his residency and fellowship at the New York Hospital-Cornell Medical Center and Memorial Sloan-Kettering Cancer Center in the United States. While in the US, he noted that genetic factors affected how patients responded to cancer treatments. Over the course of a distinguished career, he made it

his mission to develop treatments for cancers that afflict mainly Asians. In 1997, he co-founded the Cancer Therapeutics Research Group, a consortium of academic researchers from around Asia Pacific, which carries out clinical trials for cancers common in this part of the world. In 2000, he helped set up The Cancer Institute (TCI) under the National Healthcare Group and served as its director.

He also played a key role in bringing NUH and the NUS schools of medicine, dentistry and public health into the fold of the National University Health System (NUHS) in 2008. This has enabled the integration of clinical care, research and education in Singapore, paving the way for medical innovations that will provide solutions to the country's health issues. With the formation of NUHS, TCI became NCIS. In 2013, Prof Wong oversaw the opening of NCIS' Yong Siew Yoon Wing, which would develop new models of cancer care through research and education. He also helped establish the Western Cancer Action Network with NCIS' medical oncologists based at the Ng Teng Fong General Hospital. He says, "I am proud that every Singaporean and resident of Singapore, regardless of socio-economic status, can obtain world-class treatment at NCIS.

I am equally proud of the quality of staff that we have in every discipline of cancer care." Prof Wong is now NUHS' chief executive.



THE SECOND PERSON to join NCIS was **PROFESSOR ADRIAN LEONG**, a colorectal surgeon who was then NCIS' deputy director and head of Surgical Oncology. His interest is in colorectal cancer treatment. Under his watch, NCIS' organisation, strategy and operations took shape. In particular, he was in charge of developing the NCIS facility in the Medical Centre. He says, "Once upon a time, NCIS was just a meeting room of a few people discussing what NCIS could be. The challenge was in taking what was essentially a concept and making it a reality. It is great knowing that all the efforts have resulted in something thriving." Prof Leong is currently the director of his own firm, AFL Consulting, as well as adjunct professor of surgery at the NUS Yong Loo Lin School of Medicine.

INITIALLY TRAINED AT NUS, ASSISTANT PROFESSOR LIU TE CHIH obtained specialist qualifications in internal medicine and haematology from the Royal Colleges of Medicine and Pathologists in the United Kingdom. Appointed head of Clinical Haematology at NUH in 2001, he advocated for haematology trainees to receive rigorous training in both clinical and laboratory disciplines. He was also instrumental in introducing flow cytometry as an investigative tool for haematologic diseases. NCIS, as an early adopter, has become the leading authority on flow cytometry in the region. Assistant Prof Liu is now senior consultant haematologist at the Department of Haematology-Oncology, NCIS. "The best part of my NCIS experience is that everyone here works together as a team. We feel like family rather than colleagues," he says. "It's a great working environment where everyone helps out and nobody grumbles about doing that extra bit of work"



IN THE 1980S, cancer incidence was on the rise while cancer care in Singapore was relatively underdeveloped despite great potential for specialised fields of clinical oncology. **DR LEE KHAI MUN** saw where he could make a difference – radiation oncology. He joined NUH as senior consultant in 2003 and was appointed head of Radiation Oncology for The Cancer Institute at Tan Tock Seng Hospital (2005) and at The Cancer Institute at NUH (2007). In 2010, he was appointed associate director (clinical) at NCIS. At NCIS and its related hospitals, he introduced various advanced radiation therapies, such as intensity modulated radiation therapy, image-guided radiation therapy and 3D high-dose-rate brachytherapy, thus making a wider range of treatments and quality care accessible to patients. And this, Dr Lee says, is his main contribution to NCIS.

AS A COMPREHENSIVE cancer centre, NCIS treats and cares for patients of all ages. **ASSOCIATE PROFESSOR QUAH THUAN CHONG** headed the Division of Paediatric Haematology and Oncology from 1982 until recently. He received his medical training at the then University of Singapore and specialist paediatric training at NUS. He trained under Professor Wong Hock Boon, and in Australia and Jerusalem under Professor Shimon Slavin.

In 1984, he performed the first bone marrow transplant in Singapore under Professor Slavin's guidance. A/Prof Quah also introduced the first homegrown protocol for acute lymphoblastic leukaemia (ALL) known as the NUH I/II protocol. NCIS was the first to use high-dose methotrexate instead of cranial radiation in ALL. "We are blessed to have wonderful colleagues who share their expertise and experience," he says. "We manage patients across all age groups, so when we see children with cancers that are more commonly seen in adults, we can always seek advice from our colleagues with adult patients."

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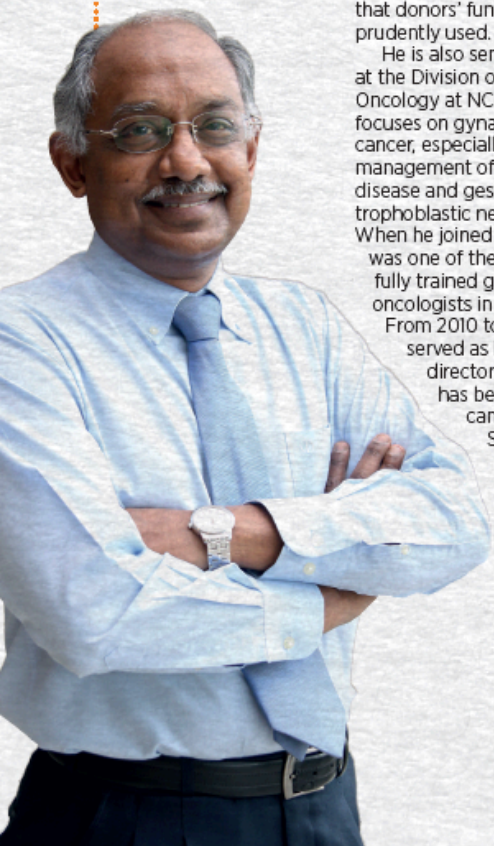


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"NCIS HAS BECOME A PREMIER CANCER INSTITUTE IN SINGAPORE. IT IS GREAT TO BE RECOGNISED AS ONE OF ITS PIONEERS."

FINANCIAL PRESSURES CAN often put cancer patients in a vulnerable position. To ensure that no one got left behind because of financial constraints was **ASSOCIATE PROFESSOR ILANCHERAN ARUNACHALAM**, who was chairman of NCIS' Cancer Endowment Fund from 2008 to 2018. Every year, the fund supports more than 100 patients in need, so that they can undergo treatment with peace of mind. At the same time, A/Prof Ilancheran, as the fund's custodian, ensured that donors' funds were prudently used.

He is also senior consultant at the Division of Gynaecologic Oncology at NCIS. His practice focuses on gynaecological cancer, especially the surgical management of advanced disease and gestational trophoblastic neoplasms. When he joined NCIS, he was one of the only two fully trained gynaecologic oncologists in Singapore. From 2010 to 2016, he served as NCIS' deputy director. He says, "NCIS has become a premier cancer institute in Singapore with an excellent reputation. It is great to be recognised as one of its pioneers."



MORE THAN 40 years on, **DR EMILY ANG** is as passionate about caring for patients as on her first day as a nurse at age 16. She started out in critical care, before moving on to specialise in oncology nursing. As NCIS' Head of Oncology Nursing from 2008 to 2015, Dr Ang nurtured a team of nurses and led the restructuring of the oncology wards. She also developed the oncology nursing service at the Tan Tock Seng Hospital and Ng Teng Fong General Hospital. She started distress counselling for patients and initiated end-of-life training for nurses. She was also involved in developing the Psychosocial Oncology Programme, which gives patients and their caregivers all-round support.

Among her many awards are the President's Award for Nurses in 2002 and the World Health Organisation Fellowship for Oncology Nursing in 1983. "Throughout my journey, I have built relationships with patients that go beyond work. Even now, my former patients come visit me at NUS where I currently teach," she says. Dr Ang is now head of the Alice Lee Centre for Nursing Studies at the NUS Yong Loo Lin School of Medicine.

FOR ZARINAH HAIROM, being a nurse means having the chance to help people. In 1996, she was assigned to the NUH Outpatient Oncology Unit after stints in oncology, cardiology, endocrinology and surgery. Zarinah (pictured below, in blue) remembers the early years of NCIS when nurses were few; those were busy days and nights when they cared for both adult and paediatric patients while finding time to fulfil other duties.

One of her most memorable projects was collaborating with physicians, pharmacists and IT personnel in 2010 to build the electronic Chemotherapy & Immunotherapy Medication Record (CIMR), which has led to safer and more efficient chemotherapy administration. Zarinah received the MOH Merit Award for Nurses in 2004 and the National Day Efficiency Medal in 2007. She is now assistant director of Nursing, NCIS Outpatient, Ambulatory Services Nursing Quality and VVIP Services.

"I AM PROUD TO BE A PART OF THE NCIS FAMILY. NCIS IS STILL THE BEST IN THE REGION, AND ITS NURSES ARE AMONG THE BEST."



WAITING TIME IS an important yardstick of service quality at any hospital. And the man who has made waiting at NUH Pharmacy a breeze is **WU TUCK SENG**. In 2014, he implemented the outpatient pharmacy automation system (OPAS). The system uses technology and robotics to automate prescription filling, improve drug-picking accuracy and patient safety, and cut waiting time significantly. Referring to pharmacy as his "calling", Mr Wu was head of the NUH Cancer Centre Pharmacy in 1996 before taking over as head of NUH Pharmacy in 2001. In 2009, he was instrumental in implementing the inpatient electronic closed-loop medication management system – a first in Asia Pacific – which has greatly enhanced patient safety by revolutionising how drugs are ordered and administered electronically. He also leads the pharmacy in ensuring that cytotoxic drugs are appropriately and safely prepared. He passes on his knowledge to pharmacists and pharmacy technicians, and promotes medication safety through work standardisation via industry standard operating procedures. As a pioneer of NCIS, he is glad to have helped lay a solid foundation to enable those who come after to provide even better care for NCIS patients.

A KEY FOCUS of NCIS is translating research discoveries from the laboratory into better treatments. **ADJUNCT PROFESSOR GOH BOON CHER**, one of the centre's most accomplished clinician scientists, has helped put NCIS on the global drug development and cancer clinical pharmacology map. After his advanced medical oncology training at NUS in 1995, he completed a National Medical Research Council Fellowship in clinical pharmacology and experimental therapeutics at the University of Chicago in 1997. He then joined the clinical trials team at NCIS to develop Phase I and II clinical trials in haematology oncology. Under his research directorship, NCIS has led the identification of differences in cancer-drug pharmacology between East Asians and Caucasians, and in developing cancer drugs for Asians. His work has contributed to pharmaceutical research being based in Singapore. Adjunct Prof Goh received the Senior Clinician Scientist Award at the National Medical Research Council (NMRC) in 2010 for his excellence in translational and clinical research. Through the years, he has also nurtured and mentored clinical scientists at NCIS. Adjunct Prof Goh is now deputy director for Research at NCIS. 📌

