



The National Cancer Centre Singapore is a one-stop specialty centre offering a holistic range of clinical services to patients including clinical and basic research on cancer treatment. The collaborative efforts of NCCS' multi-disciplinary teams of professionals have benefited our patients and their families. NCCS and its nexus of hospitals treat about 69% of cancer patients in the public sector and we regularly carry out programmes to educate the public on the latest in the prevention and treatment of cancer.

## KEY HIGHLIGHTS

### Launch of Geriatric Oncology Programme

Against a backdrop of an ageing population, National Cancer Centre Singapore (NCCS) launched the Geriatric Oncology programme in December 2006, to meet the needs of the elderly. The programme will help oncologists customise cancer prevention, screening and treatment for the elderly.

This multi-disciplinary care involves health professionals like geriatricians, dieticians and physiotherapists, and includes comprehensive assessments in cognitive and physical abilities, functionality and co-morbidities.

### New graduate programme in palliative care

NCCS signed a landmark MOU with Flinders University of South Australia during the year to offer the Graduate Certificate in Health I (Palliative Care) – Singapore's first interdisciplinary university course for doctors and nurses in palliative care. The one-year programme is open to practitioners who wish to specialise in the field. The course covers both theoretical evidence-based components and accredited clinical experience modules, including a four-week supervised attachment at accredited palliative care services in Singapore.

### First vaccine clinical trial for colon cancer

Singapore's first bench-to-bedside therapeutic cancer vaccine clinical trial led by NCCS has shown encouraging results in advanced colon cancer patients. Partnering a Danish team of doctors and scientists in a translational research project, NCCS has developed a high quality dendritic cell (DC) vaccine. Researchers believe that some cancer vaccines will be approved for clinical use within the next 12 months.

### Collaboration with Van Andel Research Institute

During the year, NCCS signed a collaborative agreement with the Van Andel Research Institute based in Michigan, USA to promote the sharing of medical knowledge and create a borderless medical community. The three-year translational research programme focuses on correlating laboratory results with clinical information and studies cancers at the molecular level to identify cancer bio-markers, particularly cancers that affect the Asian population disproportionately.

#### On the Cover:

Dr Caroline Lee, Principal Investigator, Division of Medical Sciences in discussion with Dr Lim Soon Thye, Consultant of Department of Medical Oncology. Collaborations between clinicians and researchers are key in NCCS' drive to leverage on research to improve patient outcomes.

## SERVICE

### Improving Cancer Treatment and Services

Prostate cancer patients will soon have an alternative treatment option with the introduction of the Prostate Seed Implant Brachytherapy. The procedure uses Iodine-125 permanent seed implants to treat prostate cancer. Three staff were sent to the UK for training.

The Department of Radiation Oncology received a grant from the MOH Healthcare Quality Improvement Fund for the development of a quality management system to identify radiation therapy errors.

In an effort to expand NCCS' services beyond public practice, the Department of Surgical Oncology started a satellite clinic at Mount Elizabeth Hospital to provide surgical oncology specialty services.

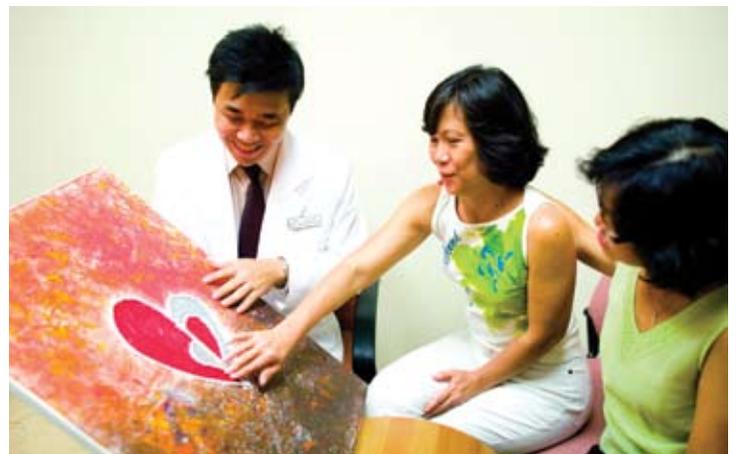
To enhance staff's service interaction with patients and their families, the Department of Clinical Affairs spearheaded a new arm, the Service Quality Unit, to develop service quality programmes building on the existing talents and skills of NCCS staff. The Quality Week 2006 saw the launch of NCCS' Service Quality Journey: "Serving You with Passion", a quality journey aimed at moulding passionate service mindsets. Committed to service excellence, the Centre has embarked on holistic and intensive learning programmes for our staff to further raise service levels.

### Providing Long-term Support to Patients and Families

Cancer treatment is much more than curing the physical disease of the patient. For the first time, a three-day retreat consisting of panel discussions and workshops was held in March 2007 and focused on patients with advanced and recurrent cancers.

In yet another programme to support patients and their families, a Malay Support Group, the Lymphoma Support Group and a family bonding programme, "Brushes in Action" were set up in 2006. NCCS volunteers also organised some 11 Arts for Health programmes to promote wellness among patients through the creative arts.

To help provide affordable cancer rehabilitation services to more patients, NCCS collaborated with Kwong Wai Shiu Hospital to offer services in areas like pain management and to help patients and their families cope with the physical and emotional stresses of treatment.



Mr Brandon Goh, patient education executive, using art as a form of therapy for post-cancer treatment.

## Customising effective cancer care

The National Cancer Centre Singapore (NCCS) is committed to its mission to provide quality, multi-disciplinary patient-centred care and promoting excellence in research and education.

A clinical trial led by NCCS for advanced colon cancer patients has shown promise and some cancer vaccines may be approved for clinical use within the next 12 months. We have also received acclaim through acknowledgments in leading peer reviewed international journals, e.g. the international recognition of A/Prof Hung The Huynh at the 97th American Association of Cancer Research Scientific Meeting for his findings on xenografts of hepatocellular carcinoma as useful models for testing drugs.

I am confident that our efforts will continue to make a significant contribution in the global fight against cancer.

**Prof Soo Khee Chee** *Director, National Cancer Centre Singapore*



## EDUCATION

### Developing Medical Expertise

In November 2006, NCCS established the Health Professionals and Undergraduates (HPU) Education Unit to provide training opportunities for medical students to learn from veteran medical staff and clinicians. One such course was a two-and-a-half-day training stint for 19 regional participants covering topics such as the treatment of specific cancers, clinical trials, and a visit to the histopathology laboratory.

### First Singapore Medical Oncology Review Course

The first Singapore Medical Oncology Review Course, jointly organised by the Chapter of Medical Oncologists and the Singapore Society of Oncology, received rave reviews from the 129 regional participants. The co-chairmen were Dr Toh Han Chong (Chairman, Chapter of Medical Oncology) and Dr Lim Soon Thye (President, Singapore Society of Oncology), both from the NCCS' Department of Medical Oncology. The course was delivered by eight eminent overseas speakers and provided a critical review of the latest developments and guidelines in medical oncology to both practising oncologists and oncology trainees.

### Raising Public Awareness

Cancer education continued to be a major effort by NCCS, with key messages delivered to the public through forums, workshops, school and community outreach programmes, and NCCS' newsletter "Tomorrow".

NCCS also organised Breast Cancer Awareness Month in 2006, initiating a series of lectures to private corporations. During the Lung Cancer Awareness Month in November, NCCS presented findings from our global study in collaboration with Roswell Park Cancer Institute and the International Agency for Research on Cancer (IARC). The global study showed that hospitality venues allowing indoor smoking in Singapore are significantly more polluted than indoor smoke-free sites and outdoor air in Singapore. This push further galvanised public support for nationwide smoking bans in hospitality venues.

## RESEARCH

### Making Headway in Cancer Treatment

NCCS oncologist, Dr Tan Min-Han achieved a breakthrough in his research on targeted therapies for kidney cancer treatment. His research found that mutations of the von Hippel-Lindau (VHL) gene, a tumour suppressor gene, are associated with biologically benign tumour behaviour. This means that therapies for individual patients can be personalised based on their unique molecular features.

In November 2006, we launched the Humphrey Oei Distinguished Lecture Series. The series aspires to be one of Singapore's leading forums for intellectual inquiry and discussion in cancer research. Dr Sydney Brenner, Nobel Laureate in Medicine, was the guest speaker and he delivered an insightful lecture on "Translational Medicine: Bench to Bedside Or Bedside to Bench?"

### Cancer Research in Full Swing

While cancer treatment may extend survival time, it usually does so at the expense of quality of life in relation to life expectancy and is important for cancer patients in deciding on cancer treatments. We are working on validating a Chinese version of the EQ-5D instrument that measures preference-based quality of life, and comparing the equivalence of different language versions.

Tumour size affects treatment, as it is instrumental in determining the stage of cancer. However, as most tumours are irregular in shape, measuring tumour volume may be a more significant indicator. NCCS, in collaboration with the National University Hospital and the Nanyang Technological University, is currently undertaking research on using computer-aided methods to determine tumour volume.

Hand foot syndrome is a painful and common side effect with the use of capecitabine, an oral chemotherapy drug prescribed to many breast and colon cancer patients. A trial is in progress to investigate if pyridoxine (Vitamin B6) helps to prevent the onset of hand foot syndrome. Involving 300 patients, the study is the first of its kind for pyridoxine in Singapore.

AWARD	RECIPIENT(S)
MOH Hinet Partner Award (Gold)	NCCS
Singapore HEALTH Award (Silver)	NCCS
Sporting Singapore Inspiration Award – Certificate of Commendation (Sports Advocate Category)	NCCS
American Society of Clinical Oncology (Merit Award)	Dr Tan Min-Han
C.A.R.E. Excellence Award 2006	Dr Wong Su Lin Jill, Ms Lee Kim Hua, Ms Myra Dadivas Tibajares, Ms Jennifer Chin Kim Chee, Ms Sheetha Sinnathamby
Excellent Service Awards 2006	Dr Tay Miah Hiang, Dr Lim Soon Thye, Dr Donald Poon, Dr Tan Min-Han, Ms Maitri Lau Choon Kuan, Ms Lee Kim Hua, Ms Tan Meu King, Ms Khatijah Bte Darkijo, Ms Santhi d/o Supramaniam
Healthcare Humanity Awards 2006	Dr Donald Poon
SingHealth-Lee Foundation Nursing Excellence Award 2006	Ms Gina How Gek Nai

To date, one-third of patients with non-small-cell lung cancer are non-smokers and the origins of their cancer remains unknown. Dr Darren Lim is studying genetic variations in genes such as MDM2 which is associated with the early onset of cancers. Knowing more about the genetic variations in MDM2 will go far in developing successful targeted therapies for these cancer patients, who do not respond well to chemotherapy.

Other ongoing research projects that NCCS has embarked on include the effect that genetic differences have on the manifestation of side effects of drugs such as the opioid drug, morphine, and the usage of angiogenesis imaging to help clinicians predict whether a patient would benefit from a full course of anti-angiogenic drugs.

On 4 August 2006, NCCS presented “Celebrating the Imaginable”, a gala dinner celebration in aid of cancer research with President S R Nathan as the Guest-of-Honour. Over 400 guests honoured the numerous breakthroughs in cancer research and treatment.

### Forging Synergistic Partnerships

Reinforcing NCCS’ expertise in cancers commonly found among Asians, an MOU was signed with India’s Regional Cancer Centre and the Rajiv Gandhi Centre for Biotechnology to conduct further research in oral and throat cancers. The agreement enables staff at all three institutions to study at the other institutions, and activated a joint trial to test a new drug for oral cancers.

In April 2006, NCCS jointly organised a workshop with the National Translational Cancer Research Network and International Agency for Research on Cancer to establish an international network supporting translational cancer research collaborations.



Mdm Loh Suet Lan, Assistant Research Co-ordinator, takes pride in her labelling and data-entry work at the NCCS research laboratories.

	FY 06	FY 05
<b>WORKLOAD PER ANNUM</b>		
Day Surgeries	<b>9,669</b>	9,549
Specialist Outpatient Clinic Attendances	<b>125,419</b>	117,696
<b>STAFFING (AS AT END MARCH)</b>		
Total	<b>459</b>	420
Doctors	<b>98</b>	85
Nurses	<b>74</b>	68
Health Sciences Professionals	<b>106</b>	95
Others	<b>182</b>	173