NUHS
National University
Health System

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MEDIA RELEASE

New national centre for treatment of cancer opens at NUH

Launch of the National University Cancer Institute, Singapore (NCIS)

Singapore's newest national cancer centre will cater to adult and child patients, conduct key research into the types of cancers that afflict people here and train doctors and healthcare professionals in the management of the disease.

The National University Cancer Institute, Singapore (NCIS), to be formally inaugurated tomorrow by the Senior Minister, Mr. Goh Chok Tong, will also play a leading role in helping to educate Singaporeans about cancer and how they can lead healthy lifestyles that would minimise the risks of their developing the disease.

The Institute, which is located at the NUH, will provide comprehensive, multi-disciplinary clinical treatment derived from in-depth research into the most common cancers afflicting Singaporeans, e.g. colorectal, breast, lung, gastric, said its director, Professor John Wong. This knowledge will be obtained from the extensive translational clinical research which NCIS scientists will be conducting in collaboration with institutions like the Cancer Science Institute of Singapore, NUS (CSI) as well as the Agency for Science, Technology and Research (A*STAR).

NCIS aims to advance research as well as education and integrate these areas with clinical practice, to raise the standard of patient care through safer and more efficacious treatment and therapies in cost-effective ways. The Institute has come a long way since the first ambulatory oncology centre was set up in Singapore at the National University Hospital (NUH) in June 1988. The Centre moved to NUH's Kent Ridge Wing in 1996 and another related specialist centre, the Radiotherapy Centre, was opened in 1999. One year later, these two centres jointly formed The Cancer Institute (TCI), which grew from strength to strength.

Over the years, the Ministry of Health (MOH) observed that the number of cancer patients being treated in Singapore had increased and that another national centre offering tertiary care was warranted. Already a centre of excellence in its own right, TCI was thus renamed the National University Cancer Institute, Singapore in 2008 and assumed the key responsibilities of being a national cancer centre.

With NCIS, patients in Singapore now have more options for cancer care. "NCIS aims to be a leading comprehensive cancer centre dedicated to the prevention, management and cure of cancer. We are proud to have doctors whose uncompromised dedication to their work means that patients receive exceptional bedside care and benefit from better treatments resulting from research discoveries in the laboratory," said Professor Wong.

Clinical Care

At NCIS, patients will receive comprehensive cancer care from a team of specialists, in Multi-disciplinary Tumour Clinics, for e.g. Breast, Colorectal, Head and Neck/Nasopharyngeal, Gynaecologic, Hepatic, Pancreatic and Biliary, Haematological Malignancies, Prostate, Thoracic/Lung and Upper Gastrointestinal.

Taking a focused approach to treatment, NCIS physicians, scientists, nurses, and other healthcare professionals combine to provide individualised treatment plans for patients. They and their families are also able to receive psycho-social and educational support and assistance from NCIS' many support programs and from a group of dedicated volunteers.

In addition, a comprehensive "End of Life Protocol" enables NCIS staff to better care for terminally ill patients, helping the latter and their families cope with dignity and comfort at arguably the most difficult period of a patient's illness. A comprehensive Continuous Care Pain Monitoring Chart helps the palliative care team ensure that no patient suffers needlessly. The team also facilitates requests by terminally ill patients to spend their last days of life at home.

Such a holistic approach towards patient care is a significant development in the evolving context of healthcare and represents a crucial step forward in the larger fight against cancer, said NCIS' Deputy Director, Professor Adrian Leong. "We aim to extend and improve the lives of cancer patients. With the combination of strong patient support programs; compassionate and dedicated doctors, nurses and researchers, as well as the latest methods in cancer prevention and treatment, NCIS aims to provide the best in cancer research and treatment."

Research

Working closely with counterparts from the CSI, A*STAR as well as international institutions through the Cancer Therapeutics Research Group (CTRG), NCIS is focussing on the development of novel drugs and conducting early phase clinical trials to test new drugs and treatment methods. These close collaborations will greatly benefit cancer patients in Singapore and the region as they are now able to have earlier access to the latest chemotherapy regimens and novel molecular targets for cancer treatment before their availability in the market.

The CTRG is an Asia-Pacific medical oncology co-operative comprising member institutions from Singapore, Australia, Hong Kong, Korea and Taiwan, providing opportunities to conduct co-operative group studies. The need for high quality and well-coordinated clinical trial groups in the Asia-Pacific has provided many opportunities for the CTRG, whose collaboration with the National Cancer Institute, USA and the Mayo Clinic-led consortium further establishes CTRG as a leader in this region.

Adjunct Associate Professor Goh Boon Cher of the Division of Medical Oncology, NCIS and Director of the Investigational Medicine Unit, NUHS believes there are opportunities to better utilise the drugs currently available and improve patient outcome as a result. He has led a multi-disciplinary team comprising medical oncologists, pharmacists, radiologists, physicists and computational scientists in a "first-in-human" Phase 1 clinical trial for a promising new anti-cancer drug.

A major pharmaceutical company had chosen Singapore for this important study, and Associate Professor Goh is now examining the drug in larger Phase 2 and 3 randomised studies based on encouraging results. This is a major milestone in Singapore's journey in developing capabilities in translational and clinical research in line with the Biomedical Sciences initiative. Besides helping to put Singapore on the world map with the major players, NCIS may also contribute to the development of the anti-cancer agent, resulting in benefits for cancer patients.

In an ovarian cancer study undertaken by the Division of Gynaecologic Oncology, NCIS, research is also underway to better understand the disease mechanism by developing methods for early detection and prediction for therapeutic responses.

Similarly, an evaluation into the treatment of early stage breast cancer using Accelerated Partial Breast Irradiation (APBI) through a clinical trial by the Division of Radiation Oncology has given doctors the confidence to recommend this form of therapy and helped provide more effective and safer APBI treatments for breast cancer patients seen at NCIS.

Another key project is the Translational and Clinical Research (TCR) programme on Gastric Cancer, a clinical trial on early diagnosis of gastric cancer by conducting screening. Since the start of the TCR grant which was awarded in 2007 to Associate Professor Yeoh Khay Guan who is Senior Consultant with the NUHS Department of Gastroenterology and Hepatology, University Medicine Cluster, 2,700 people have been screened and 10 early cancers have been diagnosed and cured. These very early stage cancers are not associated with symptoms and are undetectable without screening; therefore these cancers would not have been diagnosed if not for this research. An average of one early cancer is found per 180 tests. The researchers are also investigating imaging improvements, clinical trials of new treatments and using genomic studies of tumours to guide treatment.

The combined efforts of scientists, epidemiologists cancer specialists working in collaboration with world renowned institutions as well as the CSI and A*Star would help move discoveries in cancer research into clinical practice, especially for the Asian phenotype, said Professor Phillip Koeffler, Deputy Director of Research at NCIS. He and his team's research projects aim to optimise and improve cancer treatment and understand cancer risks with the goals for early detection and cancer prevention. They will take advantage of the multi-racial make-up of the Singapore population as well as existing collaborations with Western institutions to understand inter-ethnic differences in disease biology and drug disposition between major Asian populations and between Asians and Caucasians, so as to optimise cancer care for Asians.

Education

With the patient being the focus of the programmes at NCIS, sound medical knowledge and advanced technology are combined with the human touch of specialist doctors, nurses and healthcare professionals in differing ways to fight cancer together.

Many NCIS clinicians take on multiple roles; serving as doctors, researchers as well as teachers to both undergraduate and postgraduates. This has enabled NCIS to be attuned to the latest medical developments. NCIS also trains and nurtures the next generation of healthcare professionals in the field of medicine.

In partnership with international institutions such as the Royal Australian and New Zealand College of Radiologists, NCIS also aims to be the leading medical hub in the region, inviting promising medical and radiation oncology trainees to be trained and interned by NCIS specialists in their respective sub-specialities.

For many cancer patients at NCIS, treatment is more than just chemotherapies and targeted therapies. NCIS physicians, nurses, counsellors and researchers work hard to help all patients fighting cancer and to offer support to the growing group of children and adult survivors of cancer.

No longer is the goal to simply treat the disease. Hence, caregivers work as a team and recognise that a patient's well-being must include their emotional and spiritual health as well as their physical health. "Preventing the disease from occurring or at least diagnosing the condition at an early stage when successful treatment is more likely, is crucial in the fight against cancer," said Professor Wong. To this end, NCIS conducts several educational and outreach programmes to create public awareness of cancer and how the disease can be prevented.

Please refer to Annexes for more information on the services and research breakthroughs of the National University Cancer Institute, Singapore.

MEDIA CONTACTS

Dawn Sim
Manager, NUHS Communications
Tel: 6516 1954, Email: Dawn_Sim@nuhs.edu.sg

Peh Lay Koon
Assistant Manager, NUHS Communications
Tel: 6516 5211, Email: Lay_Koon_Peh@nuhs.edu.sg

Joey Chew
Senior Executive, NUHS Communications
Tel: 6516 6994, Email: Joey_Chew@nuhs.edu.sg

About the National University Cancer Institute, Singapore (NCIS)

Annex A: Clinical Services

The National University Cancer Institute, Singapore (NCIS) offers a broad range of medical services including screening, diagnosis, treatment and follow-up care to give our patients the best possible holistic and comprehensive care.

The expertise is grouped under the following:

Department of Haematology-Oncology
The Department of Haematology-Oncology, comprising the Division of Medical Oncology and the Division of Clinical Haematology, is dedicated to delivering the best possible care in all malignancies by practicing evidence-based and comprehensive oncology in a collegial atmosphere involving highly qualified specialists and oncology-trained nurses.

A Cancer Risk Assessment Clinic helps patients understand their risks of developing certain cancers based on their personal and family history.

Haematopoietic stem cell transplant, also known as bone marrow transplant, is also offered by the Department as a treatment option for various types of blood disorders. Advances in this field have greatly improved treatment where patients can still receive successful cell transplants without suitable donors. This is made possible through the use of umbilical cord blood cells or by conditioning the cells from previously non-suitable donors.

Department of Radiation Oncology
The Department of Radiation Oncology offers state-of-the-art radiotherapy techniques for the treatment of cancer. Its capabilities include:

- 3-D Conformal Radiation Therapy
- Intensity Modulated Radiation Therapy (IMRT)
- Image-Guided Radiation Therapy (IGRT)
- 3-D High Dose-Rate (HDR) Brachytherapy
- Stereotactic Radiation Therapy
- Stereotactic Radiosurgery
- Total Body Irradiation

The Department is also the first to offer 3-D Image-Guided HDR Brachytherapy in Singapore for gynaecological, breast and uro-genital cancers.

Division of Gynaecologic Oncology
The Division of Gynaecologic Oncology offers a comprehensive, state-of-the-art, one-stop multi-disciplinary care for women with gynaecological / pelvic cancers and gynaecologic pre-malignancies. This service is characterised by a holistic multi-disciplinary team approach.

The Division offers services ranging from cancer care and advanced pelvic surgery to diagnosis and management of pre-invasive diseases. Our spectrum of care covers:

- Risk Evaluation, Screening and Prevention
- Digital Colonoscopy
- Cold Coagulation, Laser and LLETZ for pre-malignancies
- Cancer Staging
- Radical and Reconstructive Surgery
- Radiation and Medical Oncology
- Lymphoedema Clinic
- Palliative Care

Division of Paediatric Oncology

The Division of Paediatric Oncology runs the Viva-University Children's Cancer Centre, which provides care for young cancer patients. The specially tailored child-friendly environment makes paediatric patients feel more at home. Patients see their doctors in three clinic rooms and receive treatment in a day therapy room. The inpatient area has 12 beds and five single-room bone marrow transplant suites.

The Division is also active in research, conducting studies into areas such as sarcomas and haemopoietic stem cell transplants using cord blood stem cells and natural killer cell transplants. The Division has been conducting a leukaemia clinical trial since 2003 with a cure rate exceeding 85 per cent, placing the Division among the best in the world.

Division of Surgical Oncology

The Division of Surgical Oncology has a comprehensive range of operations for cancer. Procedures include radical surgery for advanced cancer, minimal access and robotic surgery as well as conservative, reconstructive and restorative surgery.

The priority cancers of the Division for its patients are:

- Colorectal Cancer
- Thoracic and Lung Cancer
- Breast Cancer
- Uro-genital Cancer
- Upper Gastrointestinal Tract Cancer
- Head & Neck Cancer and Nasopharyngeal Carcinoma
- Liver Cancer

Division of Oncology Nursing

The services by the nursing professionals in the Division of Oncology Nursing are no less important in the delivery of world-class oncological care. The oncology nurses' contributions range from disease prevention to curative and palliative care management for both ambulatory patients and inpatients. Nurses from the Division are also involved in peripheral blood stem cell transplants and advanced practice nurses even conduct outpatient consultation clinics to relieve the workload of doctors.

Division of Oncology Pharmacy

The Division of Oncology Pharmacy provides a comprehensive range of services to haematological oncology patients as well as patients from the rheumatology and renal services that require immunosuppressant therapy.

Besides specialised drug compounding and distribution services, pharmacists from the Division dispense oral and infusion anti-cancer drugs and related supportive therapy. Pharmacists also provide specialised and individualised clinical pharmacy services such as patient counselling on anti-cancer therapies and drug information service to patients and healthcare personnel.

Provision of services to other restructured and community hospitals

With its expertise and facilities, NCIS is able to provide a range of cancer services to other restructured as well as community hospitals.

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About the National University Cancer Institute, Singapore (NCIS)

Annex B: Research and Clinical Trials

Background

The National University Cancer Institute, Singapore (NCIS) is one of the leading sites for translational clinical research in Singapore. From 2006 to 2008, NCIS published 343 papers in conferences, won S$63.4M in competitive peer reviewed grants and received 40 research-related awards.

NCIS research groups are also actively collaborating with local and international institutions and industries on research. NCIS received funding totalling up to S$3.1M from 2006 to 2008. Six patents were filed with one commercialised from 2006 to 2008.

The NCIS faculty boasts several award-winning scientists who have attracted a number of research grants from sources such as the National Medical Research Council, the Agency for Science, Technology and Research and the Singapore Cancer Society-Terry Fox Run/Run for Hope.

Research Goals

The research goals of NCIS are to establish proof-of-concept and efficient treatment modalities in humans, especially for the Asian phenotype, and to implement health services research. In line with these goals, the Department of Haematology-Oncology is focused on the development of novel drugs and conducting early phase clinical trials to test new drugs and treatment methods.

Research Achievements

Department of Haematology-Oncology

A major pharmaceutical company selected Singapore to test a 'first-in-human' Phase 1 clinical trial for a promising new anti-cancer drug. This drug works by stopping the growth of new blood vessels in tumours.

Adjunct Associate Professor Goh Boon Cher of the Department of Haematology-Oncology led a multi-disciplinary team comprising clinical oncology researchers, research coordinators, pharmacists, radiologists, physicists and computational scientists in this important study. The clinical trial involved patients with advanced stages of cancer who had not responded to conventional treatment. The drug was shown to shrink the extent of the cancer in some patients and had manageable side effects. This drug is now being examined in larger Phase 2 and Phase 3 randomised studies based on the encouraging results.

Department of Radiation Oncology

In the treatment of early stage breast cancer, Accelerated Partial Breast Irradiation (APBI) is emerging as a more attractive alternative to the external irradiation of the entire breast. APBI can be delivered in five days as compared to six weeks for the latter, making it a more convenient option for the patient. The Department of Radiation Oncology is the first centre in Singapore to evaluate APBI for local patients, preferentially delivered using multi-catheter interstitial implants in the context of a clinical trial.

The results from this study gave doctors the confidence to recommend this form of therapy and helped provide more effective and safer APBI treatment for breast cancer patients seen at NCIS.

Division of Gynaecologic Oncology

Ovarian cancer is the most fatal gynaecological cancer for women in Singapore. The majority of patients show symptoms at advanced stages with an average survival rate of 30 per cent. However, with early detection, patient survival rates can increase to over 90 per cent. The Division of Gynaecologic Oncology is undertaking research to better understand the disease mechanism by developing methods for early detection and prediction for therapeutic responses.

In the research for ovarian cancer diagnostics, the Division has identified a protein from ovarian cyst fluid that can accurately distinguish between benign and malignant tumours, providing the means for a robust screening test. The Division also engages in the development of pre-clinical models of ovarian cancer metastasis and ovarian cancer stem cells to test for therapeutic responses. Through global-regional collaboration, the Division has been involved in establishing a collection of biological samples of ovarian cancer from Asian patients to build up a body of knowledge and repertoire of treatments to manage ovarian cancer occurring in Asians.

Over time, the Division aims to create a platform to translate research results from the laboratory bench to clinical applications at the patients' bedside in ovarian cancer diagnosis and treatment.

Division of Paediatric Oncology

Associate Professor Allen Yeoh was awarded a five-year Senior Investigatorship Award under the Clinician Scientist Award to conduct research into childhood leukaemia. Specifically, he attempts to uncover how the genetic makeup of a paediatric patient affects the response to treatment so as to optimise treatment regimens for each patient.

Associate Professor Suresh Saminathan also run a highly successful multi-disciplinary sarcoma programme which features a successful chemotherapy regimen with limb-saving surgeries. Dr Tan Poh Lin is also working on the use of immune cells to eradicate residual leukaemia. Associate Professor Quah Thuan Chong and Dr Gangadhara Sundar run a multi-disciplinary eye-sparing treatment for bilateral retinoblastomas.

Division of Surgical Oncology

Stomach cancer is the second leading cause of cancer death worldwide. In Singapore, it is the fifth most common cancer among males. Ironically, it claims 400 lives a year even though it is curable at an early stage. Most patients succumb because the cancer is diagnosed too late.

Associate Professor Yeoh Khay Guan from the NUS Yong Loo Lin School of Medicine and Senior Consultant, Department of Gastroenterology and Hepatology, University Medicine Cluster, NUHS is leading a multi-institution team and working with NCIS clinicians in a five-year national project to detect stomach cancer early using biomarkers. Biomarkers are indicators that can reveal the presence of the disease at an early stage, well before the cancer is detectable by conventional means thus vastly increasing the chances of survival. By using biomarkers, Associate Professor Yeoh and his team hope to make the screening of large numbers of patients at risk rapid and affordable so that patients can improve their chances of beating this dreaded disease. Later phases of the project will see experimental cancer drugs from abroad made available to patients in clinical trials.

Division of Oncology Nursing

Oncology nurses have adopted evidence-based best practices in their delivery of patient care. Nurses in the Division assist in research projects and there are plans for them to assume a greater role in research projects as collaborators. This is part of the increasing contributions by nurses at NCIS to enhance patient care.

Division of Oncology Pharmacy

Pharmacists from the Division of Oncology Pharmacy are involved in clinical research, particularly in conducting and managing both investigator-initiated and industry-initiated clinical trials. Staff of the Division have also presented papers in conferences both locally and abroad.

In an ongoing study, pharmacists from the Division are studying the effect of Epidermal Growth Factor Receptor (EGFR) inhibitor therapy on patients' quality of life. EGFR inhibitor therapy offers fewer side effects such as hair loss, anaemia, nausea and vomiting but can cause headache, diarrhoea, infection and, most commonly, dry and itchy skin rashes. The significance of the skin toxicity is that it may cause patients to discontinue treatment. Thus, findings from this study will be used to improve the quality of life for patients on EGFR inhibitor therapy.

The Cancer Therapeutics Research Group

The Cancer Therapeutics Research Group (CTRG) was formed in 1997 under the leadership of Professor John Wong of NCIS and Professor James Bishop of the Sydney Cancer Centre with the aim of conducting clinical trials in the Asia-Pacific region.

Its objectives are to:

- Test new anti-cancer agents and strategies in Asian and Caucasian patients.
- Study the effect of anti-cancer agents in patients of different races.
- Develop better therapies for common cancers in the Asia-Pacific region.
- Provide high-quality data from recognised clinical trials for rapid approval of new anti-cancer compounds in Asia.

CTRG is a member of a large consortium of US-based institutions led by the Mayo Clinic that also conducts research in novel cancer drugs.

Such collaborations allow NCIS access to a large library of novel molecular agents made available from the US National Cancer Institute. Over the years, CTRG has conducted clinical trials involving patients with cancers such as nasopharyngeal carcinoma, thyroid cancer, multiple myeloma, hepatocellular carcinoma, gastric cancer and breast cancer.

Today, CTRG works with nine partner institutions in the Asia-Pacific, which collectively bring extensive experience in oncology drug development. These partnerships have benefited patients in Singapore and the region, enabling them to have access to new anti-cancer treatments before they are available in the market.

Such clinical trials have advanced beyond traditional studies. CTRG has the expertise to measure molecular responses to novel drugs and understand how these drugs affect patients of various races differently, thus allowing better fine-tuning of the patients' treatments.

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About the National University Cancer Institute, Singapore (NCIS)

Annex C: Education, Training and Community Outreach

Education and Training

A key mission of the National University Cancer Institute, Singapore (NCIS) is to educate, train and mentor the next generation of healthcare professionals in this field of medicine.

NCIS aspires to be the leading medical educational hub in the region, inviting promising medical and radiation oncology trainees to be trained and interned by our specialists in their respective sub-specialties. Upon completion of their training, these medical trainees will return home to practise and share their knowledge with their local professionals.

Department of Haematology-Oncology
The Department of Haematology-Oncology is accredited by the School of Post Graduate Training, National University of Singapore and the Academy of Medicine, for the sub-specialty training of haematology and medical oncology in Singapore.

Its Registrar Training Programme either in haematology or medical oncology is a rigorous, structured three-year programme that requires trainees to attend lectures, conduct self study and participate in journal clubs while gaining experience managing their medical case loads.

At the end of this programme, a medical oncology trainee is recommended to take the examinations by the Specialty Training Committee under the Joint Committee of Specialty Training, Singapore while the haematology trainee is recommended to obtain membership in the Royal College of Pathologists (Haematology) or a Fellowship in the Royal College of Pathologists Australasia.

Department of Radiation Oncology
NCIS' Department of Radiation Oncology is the only accredited radiation oncology training centre for the Fellowship of the Royal Australian and New Zealand College of Radiologists outside of Australia and New Zealand. It is also an active participating research centre for the Trans-Tasman Radiation Oncology Group (TROG), an international collaborative clinical research group for radiotherapy trials in combination with other modalities such as surgery or chemotherapy to improve cancer treatment.

Division of Gynaecologic Oncology
The Division believes strongly in the training of its medical professionals at all levels and has in place training programmes at the medical student, medical officer and specialist levels. At the undergraduate level, students vie for a coveted eight-week rotation in the Division where they perform the duties of a senior house officer under supervision to complete a clinical study, review or audit.

At the next level, the Division trains medical officers to be generalist obstetrician-gynaecologists through three and six month rotations. At the specialist level, the Division takes on both medical and surgical fellows in gynaecologic oncology for a 12-month period to further hone their skills and knowledge in various sub-specialties. That the training rotations at all levels in the Division are always over-subscribed underscores the desirability of its educational programmes in the medical fraternity.

Division of Paediatric Oncology
The Division of Paediatric Oncology is the centre of excellence for the Viva Foundation for Children with Cancer. The Division trains fellows and nurses from the Asean region as part of its outreach programme to improve cures of childhood cancers in Asia.

Division of Surgical Oncology
The Division of Surgical Oncology offers a surgical fellowship in upper gastrointestinal surgery to train surgeons in the evaluation and treatment of diseases in the gullet, stomach and small intestine and in the surgical treatment of obesity.

The six to 12 month programme has both clinical and research components in a multi-disciplinary environment. From this programme, doctors training to be surgeons will gain experience in different clinical functions such as consultations in the clinic, operative procedures, research and education to prepare them to perform as well-rounded surgeons.

Division of Oncology Nursing
The staff from the Division are making their mark in the area of education for oncology nurses. Oncology nursing staff have been selected as adjunct faculty in local institutes of higher learning and have been invited as speakers at international and local conferences. Oncology nurse-clinicians also share their knowledge and experience when they conduct internationally accredited in-house courses for their juniors, thus raising the quality of nursing care in Singapore.

Division of Oncology Pharmacy
The Division of Oncology Pharmacy conducts certificate courses on aseptic dispensing and safe handling of anti-cancer drugs as well as aseptic dispensing validation tests for both local and foreign pharmacy personnel.

Oncology pharmacy training provided by the Division has benefited undergraduates, pre-registration pharmacists, registered pharmacists, pharmacy technicians, nurses and healthcare administrators from local and regional institutions.

Community Outreach and Public Education

Besides training doctors, NCIS is also committed to educating the Singaporean public about cancer – one of the leading causes of death in the country. With increased awareness and a more informed public, more people can practise preventive measures and participate in health screenings to catch this disease in its early and most treatable stage.

To this end, NCIS produces educational materials and collaborates with Non-Governmental Organisations and groups such as the Singapore Cancer Society and the Breast Cancer Foundation to organise forums, health fairs and talks to educate the public.

Epidemiology and Public Health

A series of health screening projects funded by the NCIS Endowment Fund were conducted for the purpose of community outreach and research. By offering basic healthcare screening in communities that have large proportions of lower-income households, the team of medical students and researchers from the National University of Singapore's Yong Loo Lin School of Medicine was able to survey the community to glean insights into their health status and attitudes. Through this series of projects, the researchers hoped to identify factors that posed as barriers to lower-income households from seeking screening services for common medical conditions.

By conducting in-depth interviews with members of the public as well as healthcare professionals, researchers were able to explore the concerns and barriers to screening for cancer and other chronic diseases. Through these findings, the researchers are developing a conceptual model to better reach out to these communities to increase the number of people screened for these common diseases.

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About the National University Cancer Institute, Singapore (NCIS)

Annex D: Patient Care and Support Services

To help patients and their loved ones cope with the reality of living with cancer, NCIS has a range of services that patients can tap on.

CancerLine
When patients, their loved ones and members of the public need information, advice or even just a listening ear, they can call NCIS' CancerLine at (65) 9722 0569 to talk to a trained oncology nurse. Callers can choose to remain anonymous and are assured of confidentiality when they call.

Patient Counselling
Patients at NCIS can attend individual counselling sessions to help them cope with their conditions as well as manage the side effects of their treatments. In the "Feel Good Look Good" programme by the Singapore Cancer Society, trained oncology nurses from NCIS help female patients improve their self-esteem and manage their condition with greater self-confidence.

Support Groups
Currently, there are two support groups where patients can find empathy in sharing sessions and group networking activities. The Breast Support Group is a project by NCIS oncology nurses for breast cancer patients and survivors. The Gynaecology Oncology Patient Support Group, also called the Totally Empowered Actively Living (TEAL) Ribbon Group, is a joint project by NCIS Oncology Nursing, the NCIS Division of Gynaecologic Oncology and the Department of Obstetrics and Gynaecology of the National University Hospital.

The "Friends" Volunteer Programme
More recently, a group of volunteers from all walks of life have come together to offer a hand of friendship to cancer patients. These volunteers come to the outpatient clinics to spend time with patients who are waiting to see their doctors or are undergoing long chemotherapy sessions to help them feel better.

Children's Cancer Foundation Family Support Centre
NCIS works closely with the Children's Cancer Foundation (CCF) to provide holistic care and support services to our patients. We refer all our children cancer patients to the Family Support Centre operated by CCF. Full-time social workers and counsellors at the Centre help our patients and their families in many ways. These range from organising therapeutic play and craft sessions to story-telling and ward activities. The Centre also runs a resource library to loan books, toys, games and equipment to children and their caregivers.

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About the National University Health System (NUHS)

Established in January 2008 and jointly owned by the Ministry of Health Holdings and National University of Singapore (NUS), the National University Health System groups the National University Hospital (NUH), NUS Yong Loo Lin School of Medicine and NUS Faculty of Dentistry under a common governance structure to create synergies to advance health by integrating excellent clinical care, research and education.

The enhanced capabilities and capacity will enable the NUHS to deliver better patient care, train future generations of doctors more effectively and bring innovative treatments to patients through groundbreaking research.

For more information about NUHS, please visit www.nuhs.edu.sg

About the National University Hospital (NUH)

The National University Hospital (NUH), a member of the National University Health System (NUHS), is a tertiary specialist hospital that provides advanced, leading-edge medical care and services. Equipped with state-of-the-art facilities as well as dedicated and well-trained staff, the NUH is a major referral centre that delivers tertiary care for a wide range of medical and dental specialties including Cardiology, Gastroenterology and Hepatology, Obstetrics and Gynaecology, Oncology, Ophthalmology, Paediatrics and Orthopaedic Surgery. It is the principal teaching hospital of the NUS Yong Loo Lin School of Medicine. The Department of Obstetrics and Gynaecology in NUH is the host department for the Metabolic Disease Translational and Clinical Research Flagship Programme, DevOS.

With combined resources from the teaching hospital and NUS Yong Loo Lin School of Medicine and Faculty of Dentistry, the NUH will be able to meet the healthcare needs of patients, train future generations of doctors more effectively, and help develop solutions to our healthcare problems through research.

Backed by substantive expertise and experience, the NUH was chosen by the Ministry of Health to develop two new national specialist centres, the National University Heart Centre, Singapore and National University Cancer Institute, Singapore to meet the growing need for cardiac and cancer treatments.

In 2004, the NUH became the first Singapore hospital to receive Joint Commission International (JCI) Accreditation, an international stamp for excellent clinical practices in patient care and safety. It was also the first hospital in Singapore to receive a triple ISO certification concurrently for Quality, Environmental, and Occupational Health & Safety Management Systems in 2002.

For more information about NUH, please visit www.nuh.com.sg

About the NUS Yong Loo Lin School of Medicine

Established in 1905, the NUS Yong Loo Lin School of Medicine (YLLSoM) was the first institution of higher learning in Singapore and the genesis of what would become the National University of Singapore. The School offers one of the finest undergraduate medical programs in the Asia Pacific region and commands international recognition and respect. From Academic Year 2009–2010, the NUS Yong Loo Lin School of Medicine has an intake of 260 new students for the July admission. The School strives to fulfil its tripartite mission of providing excellent clinical care, training the next generation of healthcare professionals, and fostering research that will transform the practice of medicine. It plays a pivotal role in producing future leaders in healthcare delivery, discovery, and public service as well as in Singapore's Biomedical Sciences Initiative and Singapore Medicine, a medical tourism initiative. The School's 17 departments in the basic sciences and clinical specialties work closely with the Alice Lee Centre for Nursing Studies, the Centre for Biomedical Ethics, and the Centre of Excellence for Health Services Research to ensure that teaching and research are aligned and relevant to Singapore's healthcare needs.

For more information about YLLSoM, please visit http://medicine.nus.edu.sg/corporate/

About the National University Cancer Institute, Singapore

The National University Cancer Institute, Singapore (NCIS) offers a broad spectrum of cancer care and management covering both paediatric and adult cancers, with expertise in prevention, screening, diagnosis, treatment, rehabilitation and palliative care. The Institute's strength lies in the multidisciplinary approach taken to develop a comprehensive and personali**s**ed plan for each cancer patient and his or her family.

NCIS draws on the expertise of our specialists in the fields of haematology-oncology, radiation oncology, gynaecologic oncology, paediatric oncology, surgical oncology, oncology nursing, oncology pharmacy, palliative care, pathology, radiology, medical specialities including gastroenterology and hepatology, infectious diseases, pulmonary and critical care, psychiatry; epidemiology and public health as well as other allied health sciences.

With several award-winning clinician-scientists and clinician-investigators, NCIS has an international reputation in translational research and clinical trials, providing patients with access to promising breakthroughs in cancer diagnostics, technology and therapies. NCIS is also closely affiliated with the Cancer Science Institute of Singapore, National University of Singapore.

The Institute's outreach efforts include prevention and screening programmes to reduce cancer mortality and to diagnose the disease at its most treatable stage.

For more information about NCIS, please visit www.ncis.com.sg