PRESIDENT'S SCIENCE AND TECHNOLOGY MEDAL 2021

Professor Ivy Ng
Group CEO, SingHealth
Clinical Professor, Duke-NUS Medical School
Clinical Professor, Yong Loo Lin School of Medicine, National University of Singapore (NUS)
Governing Board Member, Duke-NUS Medical School
Board Member, National Medical Research Council (NMRC)
Member, Human Health and Potential Executive Committee, National Research Foundation (NRF)

"For her outstanding leadership in the development of academic medicine in Singapore through advancing health and biomedical sciences research and innovation, nurturing clinical research talent, and establishing strategic partnerships among academia, healthcare and industry, to improve health and healthcare delivery."

Professor Ivy Ng is an accomplished clinician-leader with a strong vision and deep passion for academic medicine. Academic medicine, which encompasses clinical and basic research that is informed by and targets important health problems, is critical for the translation of research discoveries into innovations that improve health and clinical outcomes and contribute to the development of the medical practices of the future. Academic Medical Centres (AMCs) promote an environment which integrates education and research with clinical work, and fosters a culture where clinicians, researchers, educators and staff continually study clinical problems, review data, pursue research and advance innovations that contribute to better care and outcomes.

Prof Ng has played a pivotal role in transforming SingHealth into a thriving AMC since her appointment as its Group Chief Executive Officer (GCEO) in 2012. This was a very challenging endeavour given the size and complexity of SingHealth, Singapore's largest public healthcare cluster with four acute care hospitals, five national specialty centres, three community hospitals and a network of polyclinics, with a total staff strength of more than 30,000.

Prof Ng has led SingHealth in restructuring and transforming itself for its academic medicine journey, ensuring that it has the right infrastructure, support and talent to pursue biomedical research, innovation and education. She has been instrumental in driving the advancement of the SingHealth Duke-NUS academic medicine partnership, where she oversaw the formation of 15 Academic Clinical Programmes, 13 SingHealth Duke-NUS Disease Centres, 16 Joint Institutes, and five Academic Colleges – initiatives that integrate research and education with clinical care. These platforms foster the multidisciplinary collaboration among the medical, scientific and education communities that enables care transformation.

Prof Ng places particular emphasis on talent development as this is key to shaping the future of healthcare. Under her leadership, the research and education talent pool expanded tremendously. As of 31 Dec 2020, SingHealth produced 60 national clinician scientists and around 35 budding clinician scientists, with a multi-fold increase in research productivity and research competitiveness, such as publishing more than three times the number of research papers annually, compared to 10 years ago. She has played a pivotal role in recruiting to Singapore top international scientists to spearhead new research areas, galvanise research across different fields and mentor aspiring local researchers. Under her leadership, SingHealth has played a key role in Residency training nationally, with the cluster delivering almost half of the national healthcare and clinical training.

Prof Ng oversaw the development of the 20-year Singapore General Hospital (SGH) Campus Masterplan. Beyond ensuring that the plan would meet Singapore's future healthcare needs, Prof Ng and her team also sought to develop and support a rich ecosystem that interlinks clinical care, education and research. When fully developed, the campus will include dedicated spaces and purpose-built facilities for the full spectrum of research, from basic science to clinical and translational research, as well as catalyse new innovations and technological advancements.

Prof Ng's own career has successfully spanned clinical medicine, wet bench research, teaching and academic medicine leadership. In her early days as a paediatrician, Prof Ng set out to elucidate the molecular spectrum of thalassaemia. Her research and subsequent founding of the National Thalassaemia Registry in 1992, which registered index cases and facilitated the proactive screening of at-risk individuals, led to accurate genetic counselling and, where appropriate, prenatal diagnosis. This was a game-changer for the early identification of at-risk couples and resulted in a significant drop in the number of babies born with thalassaemia major, as well as better treatment protocols and better outcomes for such patients.

When she took the helm as the CEO of KK Women's and Children's Hospital (KKH) in 2004, she oversaw key initiatives such as the introduction of a programme to screen babies for hearing impairment so that young children with the condition can have a chance to lead normal lives. The programme was successful in improving the early diagnosis and clinical intervention of hearing impairment, and in reducing the burden of the disease.

Prof Ng's exemplary leadership and contributions are guided by what is central to medicine – the patient, and the firm belief in the major benefits that advancements in medicine, made possible by high quality research and education, bring to the patient.