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SingHealth and A*STAR establish S$8 million partnership to co-develop healthcare innovations

April 11, 2023 | News | By Hithaishi C Bhaskar

Singapore's healthcare innovations project aims to translate research from bench to bedside under first ever partnership facilitating early detection of ocular surface diseases for better clinical outcomes



(Left to Right): Professor Thomas Coffman, Dean, Duke-NUS Medical School; Prof Ivy Ng, Group Chief Executive Officer, SingHealth; Cheng Wai Keung, Chairman, SingHealth; Frederick Chew, Chief Executive Officer, A*STAR; Chan Lai Fung, Chairman, A*STAR

SingHealth and the Agency for Science, Technology and Research (A*STAR) entered a Healthcare Translation Partnership (HTP) to accelerate the translation, deployment and commercialisation of healthcare research and innovation projects for better patient care. The partnership, which will provide S$8 million in funding support for projects, focuses on three healthcare innovation areas.

(i) Medical Technology

(ii) Data Science, Artificial Intelligence (AI) and Digital Health

(iii) Health Services Innovation

Research and the use of advanced and emerging technologies are critical to meet increasing healthcare demands, and ensure that healthcare remains sustainable for the future. However, it can be challenging to translate upstream scientific discoveries and innovative ideas in the lab into downstream, practical solutions that can be applied in clinical settings. Often, the challenges lie in the processes for validation, productisation, and adoption of research and innovation initiatives, such as for new medical devices or diagnostic and treatment tools.

The HTP aims to address this by establishing a framework and consolidating resources and support systems to facilitate joint projects between the SingHealth Duke-NUS Academic Medical Centre (AMC) and A*STAR. For example, there will be a dedicated partnership office which will coordinate and address the translation challenges holistically. The HTP will also build

important bridges between experts in the three healthcare innovation focus areas, enabling clinicians, healthcare innovators, researchers and industry partners to collaborate and accelerate the research translation process. In the longer term, the HTP will set the stage for a more vibrant healthcare innovation ecosystem and nurture a pipeline of innovators to address evolving challenges in care delivery.

Ocular surface disease (OSD) is a priority eye condition highlighted by the World Health Organization1 . However, currently there are no clinical devices to evaluate disease severity directly and objectively, or track disease progression and ocular surface dynamics.

To address this, a team of clinician innovators and healthcare researchers from SingHealth's Singapore National Eye Centre (SNEC), Singapore Eye Research Institute (SERI) as well as A*STAR's Institute of Materials Research and Engineering (IMRE) are studying the use of a Terahertz imaging system on the ocular surface to objectively and efficiently evaluate OSD. The project, THEA (Terahertz High Definition Eye Analysis), will receive support under the SingHealth-A*STAR HTP to refine the project prototype and catalyse the process of bringing the product and technology to market.

Boosting AI Collaborations to Improve Ophthalmological Care

Building upon the longstanding partnership between both parties in the digital health space, SERI and A*STAR's Institute of High Performance Computing (IHPC) have partnered to establish the SERI-IHPC Joint Lab to drive AI research and adoption of digital technologies in eye care. It will also support the development of digital infrastructure that supports and promotes enterprise AI in healthcare, including a clinical and technical AI sandbox to enable AI model training and testing between SingHealth, A*STAR and other industry partners. This will advance the research and development of AI solutions that aim to improve ophthalmological care for patients.

Professor Ivy Ng, Group CEO, SingHealth, said, "Research and innovation not only enable us to push the boundaries of medicine, they drive improvements through the development of novel medical devices, digital solutions for diagnosis and treatment, and health services innovations that optimise clinical operations and enhance value-driven care. The SingHealth-A*STAR HTP synergises SingHealth's strengths in clinical care and healthcare innovation and A*STAR's expertise in science and technology to catalyse the development of new solutions through research and innovation, and empower healthcare researchers and innovators to better leverage emerging technologies that will bring about better care outcomes for our patients and the population."

Frederick Chew, Chief Executive Officer, A*STAR said, "Technological developments are rapidly advancing, especially in areas such as AI, bioinformatics, high performance computing and medical technologies. SingHealth and A*STAR have complementary strengths. Through the SingHealth-A*STAR HTP, we aim to spur the translation of research and innovation initiatives into impactful medical solutions that improve healthcare delivery, benefit patients, better support healthcare workers and benefit the economy."

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