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Singapore NHIC enters its second decade, advancing healthcare transformation through tech and innovation

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NHIC sharpens focus on systems-level healthcare transformation through tech and innovation as it enters its second decade



The National Health Innovation Centre Singapore (NHIC) marked its 10th anniversary today, commemorating a decade of groundbreaking progress in providing strong support to public healthcare institutions for the translation and commercialisation of clinical innovations to address unmet clinical needs in Singapore and beyond. At the 10th Anniversary Dinner, graced by Dr Janil Puthucheary, Senior Minister of State, Ministry of Digital Development and Information, and Ministry of Health, NHIC affirmed its mission for the years ahead: to focus on healthcare innovations that drive systems-level healthcare transformation to ensure that innovations developed can be implemented and scalable to bring benefits across the whole healthcare ecosystem. NHIC will also intensify its efforts to address complex healthcare challenges through comprehensive and integrated strategies, leveraging its decade of expertise in pioneering advancements in medical technologies and solutions.

Uplifting Singapore's healthcare clusters for healthcare innovation

Over the past ten years, NHIC has played a pivotal role in guiding healthcare innovators through the process of translating early-stage ideas into market-ready solutions that address unmet clinical needs. By ensuring these innovations meet regulatory requirements, align with clinical workflows, and are applicable in real-world settings, NHIC has enabled more than 100 innovation projects across public healthcare institutions (PHIs), leading to enhanced healthcare outcomes and close to $90 million of investments from private capital poured into developing these innovations.

NHIC's commitment to nurturing a vibrant healthcare innovation ecosystem is evident in its comprehensive support through robust funding schemes, strategic guidance, talent development, and accelerating these clinical innovations towards commercialisation via industry and international partnerships. Additionally, NHIC has supported healthcare cluster partners through grants for project development and intellectual property filing, further strengthening the ecosystem.

These complementary efforts have successfully led to the commercialisation of several high-impact technologies, including novel medical devices, breakthroughs in therapeutics, and advanced diagnostic tools, resulting in 72 licenses facilitated, $4.38

million in licensing revenue, the creation of 25 start-up companies, and the launch of 16 products. Global benchmarking analysis of Innovation & Enterprise (I&E) activities indicate that Singapore demonstrates strong performance in start-up creation and investment raised, placing us amongst the top in the world on the Global Innovation Index.

NHIC offers full spectrum support to uplift promising innovations that address unmet clinical needs

Improving skin health for individuals who are struggling with acne

For instance, a grant by NHIC's Innovation to Develop (I2D) scheme was awarded to Nanyang Technological University's (NTU) Lee Kong Chian School of Medicine, that led to the start-up company, ArrowBiome. With the grant, along with holistic support in areas such as regulatory and commercial expertise, ArrowBiome advanced the commercialisation of their innovative microbiome management solution, which selectively targets acne-causing bacteria to balance the skin microbiome in patients with acne. The financial and developmental support provided by NHIC enabled ArrowBiome to be equipped with the essential resources and infrastructure needed to advance from concept and inch closer to a market-ready product, even while the technology was incubating at the Singapore-MIT Alliance for Research and Technology (SMART) and the Nanyang Technological University's Lee Kong Chian School of Medicine.

Better care and patient safety for mothers undergoing childbirth

A team at KK Women's and Children's Hospital (KKH) identified an unmet clinical need in administering spinal anaesthesia accurately to women in labour during childbirth to reduce post-delivery trauma and complications.

In the past, the success rate of first-attempt injection of spinal anaesthesia was 70 per cent, as this is based on clinical skills, visual estimation and palpation of the spine. Hence, there was an unmet clinical need to tap on technology to increase the first-attempt injection success rate to enhance safety and improve patient experience, while also enabling clinicians, midwives and nurses to assist in this procedure with greater accuracy.

Addressing this need is uSINE®, – the world's first AI-powered ultrasound-guided automated spinal landmark identification system, which increased the first-attempt injection success rate to 92 per cent for women in the healthy weight range and 82 per cent for obese women. uSINE® technology was developed with support from NHIC's I2D scheme, and incorporated as a start-up, HiCura Medical Pte Ltd, a National University of Singapore (NUS) spin-off company. Throughout the process, NHIC provided valuable guidance on key aspects such as insights into navigating regulatory guidelines, commercial viability, and considerations for public procurement. HiCura Medical Pte Ltd co-developed the technology's clinical application with KKH, supported by NHIC's Innovation to Industry (I2I) scheme.

uSINE® was eventually implemented in KKH in May 2023 and has also secured approval from the Health Sciences Authority for use in other healthcare institutions in Singapore. With support from NHIC's Clinical Innovation & Adoption Initiative (I2Adopt), the team is currently implementing uSINE® in selected PHIs.

Enhanced support for healthcare innovations: NHIC's I2Adopt spurs innovative healthcare solutions to implement and scale across healthcare clusters

NHIC's I2Adopt, an enhanced support initiative for healthcare clusters and innovators, launched in October 2022, was developed to foster stronger collaborations with respective local healthcare cluster partners, agencies and offices to implement cost-effective innovations. Going beyond individual projects, NHIC partners with healthcare clusters to identify and smoothen barriers that currently hinder the implementation and adoption of healthcare innovations that could bring benefits across the whole healthcare ecosystem.

With this sharpened focus, innovations can prove that their technology is viable for use in Singapore which in turn allows them to set their sights further beyond Singapore to create global impact.

One significant development since, is the collaboration between two PHIs – Singapore General Hospital (SGH) and Tan Tock Seng Hospital (TTSH) – and Mesh Bio. Under the NHIC I2Adopt initiative, a grant of $1 million was awarded to the two PHIs to enable the implementation and adoption ofHealthVector Diabetes (HVD), a software medical device based on digital twin technology, that provides an estimate of the three-year risk for chronic kidney disease in patients with diabetes.

Strengthening partnerships with healthcare clusters to drive systems-level healthcare transformation

As it enters its second decade, NHIC will partner closely with healthcare clusters to select and resource high potential projects, catapulting them towards market readiness, increasing their value and impact. Under this pilot, which is an expansion of NHIC's schemes, promising projects by PHIs can receive a grant of up to $1 million in project funding and other

support from NHIC to address common challenges of translating medical innovations towards clinic and market readiness. The support will also facilitate further scaling of technologies, to draw in private-sector support for commercial and financial viability. Through this comprehensive approach, the scheme aspires to synergise greater public-private partnerships to accelerate commercialisation.

Rising Star Healthcare Innovation Tributes – Honouring Local Innovations and Public-Private Partnerships

In conjunction with its 10th anniversary, NHIC also awarded Rising Star Healthcare Innovation Tributes to deserving local enterprises that have shown strong partnerships with healthcare institutions to implement new technologies to scale. These tributes highlight the outstanding achievements of local biomedical and healthcare innovations and celebrate strong public-private partnerships to fuel patient care and healthcare impact over the past decade.

Honouring the work of Founding Chairman, Professor Ranga Krishnan

A special tribute was also accorded to Professor Ranga Krishnan as the founding chairman of NHIC. Dr Janil Puthucheary presented him with a commemorative token to celebrate his ground-breaking contributions and visionary guidance during his tenure, acknowledging his strong stewardship in steering NHIC as an enabler to support Singapore's healthcare innovation ecosystem towards success. While he has relinquished his role in NHIC, he is still the Chairman of the National Medical Research Council (NMRC) – which oversees the development and advancement of medical research in Singapore. As the Chairman, he continues to guide the NMRC Office in its implementation of research funding programmes to strengthen Singapore's healthcare research and innovation ecosystem.

Looking ahead into the next decade

By driving systems-level transformation in healthcare delivery, NHIC seeks to enhance the efficiency, accessibility, affordability and sustainability of new technologies to be integrated into our public healthcare systems, to support and uplift patient care and impact population health outcomes on a broader scale.

"The celebration of our 10th anniversary represents a significant milestone that paves the way for our future aspirations in healthcare innovation. As we look to the future, we are eager to build upon our accomplishments, advancing further in healthcare technology development and remaining steadfast in our commitment to driving systems-level healthcare transformation forward. As we always say, Singapore first, Unicorn next," said Associate Professor Henry Ho, Executive Director, National Health Innovation Centre Singapore (NHIC).

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