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Lucence, DxD Hub and NCCS launches AI-driven cancer diagnostics research collaboration in Singapore

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UNITED 2.0, a S$6 million research collaboration to develop a next-generation, clinical grade cancer profiling test to advance cancer diagnostics through AI and patient-centric research



Precision oncology firm, **Lucence**, with Diagnostics Development Hub (**DxD Hub**), hosted by the Agency for Science, Technology and Research (**A*STAR**), Singapore and the National Cancer Centre Singapore (**NCCS**), officially launched **UNITED 2.0,** a S$6 million research collaboration to develop a next-generation, clinical grade cancer profiling test with the goal of advancing the future of precision diagnostics.

A landmark MOU between **Lucence, Brain Tumour Society Singapore (BTSS), and DxD Hub** creates a framework for patient input to guide R&D, ensuring future diagnostic tools align with patient needs and experiences. The MOU represents a formal commitment to keep the patient's perspective at the heart of cancer research.

UNITED 2.0 builds on UNITED 1.0 by using dual WES and WTS for more comprehensive cancer profiling, identifying complex mutations and fusions, and leveraging AI for efficient genomic data analysis to support precision treatments.

Building on this foundation, UNITED 2.0 will adopt a dual **Whole Exome Sequencing (WES)** and **Whole Transcriptome Sequencing (WTS)** approach, moving beyond "gene snapshots" (tests that look only at selected genes) to provide a more complete picture of the cancer. This enables more detailed tumour profiling, including the identification of complex mutations and fusions, helping clinicians identify genetic alterations that can be targeted with precision treatments. The team will also use AI to support more efficient analysis and reporting of the large amount of genomic data generated.

The clinical-grade test will analyse a broad range of cancers, including breast, lung, colon, bladder, CNS tumours, and lymphoma. In addition to the panel's enhancement, the collaboration's roadmap includes plans to develop tools to monitor a patient's status after treatment. This includes "Minimal Residual Disease" (MRD) testing, which aims to detect early signs of cancer recurrence, enabling quicker clinical intervention.

Dr. Tan Min-Han, M.B.B.S., F.R.C.P., Ph.D., Founding CEO and Medical Director of Lucence. “By integrating AI with comprehensive DNA and RNA sequencing, we are turning massive amounts of complex data into clear, actionable answers that will help clinicians choose better treatments faster.”

Dr Weng Ruifen, Chief Executive Officer of DxD Hub said “UNITED 2.0 aims to enhance tumour profiling for clinical use by improving test design and reliability, with Lucence and NCCS ensuring a trustworthy test for confident clinical action”.

Assistant Professor Jason Chan, Director, Cancer Discovery Hub, NCCS explained "The latest collaboration enhances the original assay with advanced tumour sequencing technologies for deeper analysis, aiming to better support treatment of rare cancers or cases with exhausted standard options”.

Over the next three years, the UNITED 2.0 collaboration will work to bring the research closer to clinical application. Complementing this effort, the new partnership between Lucence, DxD Hub and BTSS reflects a shared commitment to keeping patient perspectives central to the future of cancer diagnostics.