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ASIA EDITION

Mesh Bio's predictive health-tech tool HealthVectorÃ?Â® Diabetes approved in Singapore to detect renal disease

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Shifting focus from disease management to prevention by predicting chronic kidney disease risk in type 2 diabetes patients in early stages using Digital Twin Technology; Capable of Predicting 3-year Onset Risk



Singapore-founded health technology startup, Mesh Bio announces a dual milestone:

- regulatory approval of its HealthVector® Diabetes as a Software Medical Device (SaMD) by the Health Sciences Authority (HSA)
- HealthVector® Diabetes will be involved in an implementation pilot at Singapore General Hospital (SGH), Tan Tock Seng Hospital (TTSH), and selected polyclinics for potential clinical adoption.

The implementation pilot is supported by the National Health Innovation Centre Singapore (NHIC), through the Innovation to Adopt (I2Adopt) Grant. HealthVector®Diabetes, a metabolic digital twin-based SaMD developed using computational systems biology and artificial intelligence, is intended to predict a 3-year onset risk of chronic kidney disease (CKD) in patients with type 2 diabetes. Its algorithm uses anonymised clinical data from the hospitals' electronic medical records to derive a risk score for prediction of worsened kidney function. This has the potential to transform the care of patients, as clinicians can use this information to prioritise and intensify therapeutics to delay the progression of kidney failure.

HSA's approval of HealthVector® Diabetes came on the back of a validation study led by SGH, using SingHealth Diabetes Registry dataset, and the National Healthcare Group (NHG)'s Chronic Disease Management Datamart.

Envisioning a Predictive Paradigm for Preventive Healthcare:

Arsen Batagov, Co-Founder and Chief Technology Officer of Mesh Bio, commented, "Our mission at Mesh Bio is to deliver actionable solutions utilising state-of-the-art predictive analytics to mitigate complications from chronic diseases like diabetes. The regulatory approval of HealthVector® Diabetes by HSA, is a monumental achievement, marking a new era of innovation in patient care. HealthVector® Diabetes is poised to become the future of proactive and tailored healthcare for *predicting*

chronic kidney disease risk in type 2 diabetes patients".

Harnessing the Metabolic Digital Twin for Health Insights:

"The mechanistic digital twin paradigm within HealthVector® Diabetes provides new insights into patient health trajectories. It can enable clinicians to design and implement a personalised care plan for patients with diabetes to prevent specific complications. Collaborating in synergy with industry partners like Mesh Bio strengthens our focus on harnessing innovation and precision medicine to improve preventive and population health. We are thankful to the National Healthcare Group (NHG) Centre for Medical Technologies and Innovations (CMTi) for facilitating this partnership," said Associate Professor Rinkoo Dalan, Senior Consultant of Endocrinology from TTSH, who co-led the research study.