

Annex 1: Project Descriptions

Company: Cardiokol

Project Name: Voice Assist Arrhythmia Monitoring

Partnering Healthcare Cluster: NUHS

Atrial Fibrillation (AF), an abnormal heart rhythm(arrhythmia), is a major cardiovascular challenge associated with a five-fold increased stroke risk. Detecting AF is challenging because it often goes unnoticed due to its asymptomatic nature, especially in individuals 65 and older. Existing methods for monitoring AF have limitations, including short monitoring periods and the need for invasive procedures or device compliance, particularly among older users.

Cardiokol has developed Voice Assist Arrhythmia Monitoring (VAAM), a digital telehealth solution that utilises voice biomarkers on widely available platforms like phones, landlines, speakers, and voice assistants. VAAM can detect AF regardless of spoken content or language barriers without special devices, making it a non-invasive and user-friendly solution for monitoring at-risk populations, particularly the elderly. Its goal is to make long-term cardiac arrhythmia monitoring and screening practical and cost-effective for large populations, especially the ageing demographic.

Company: Neurowyzzr

Project Name: Digital Brain Function Screen (DBFS)

Partnering Healthcare Cluster: NHG

Digital Brain Function Screen (DBFS) is a clinically validated medical tool that uses gamified neuroscience puzzles to generate a medical report within one minute for clinicians to discuss. It is registered as a digital medical device with the Singapore Health Sciences Authority (HSA), U.S. U.S. Food and Drug Administration (FDA), and Australia Therapeutic Goods Administration (TGA).

In comparison, pen-and-paper tests require trained personnel and costly MRI/CT scans, which can exceed \$8,000; DBFS is efficient and cost-effective, taking 15 -20 minutes to complete, accessible online via a web link or email, allowing individuals to complete it at home or in a clinic using a tablet or computer. This makes it suitable for broad population usage. By enabling early intervention through affordable measures like lifestyle adjustments or cost-effective supplements and medications, DBFS can potentially reduce financial burdens and emotional distress for families while reducing the nation's expenses associated with severe cognitive decline.

Company: Wonder Technology

Project Name: Wonder SAFE

Partnering Healthcare Cluster: SingHealth

Wonder SAFE is a revolutionary Voice AI Platform for Mental Health. It provides secure, accurate, fast, and effective mental health screening and monitoring solutions for healthcare platforms, online hospitals, employee benefit programmes and insurance providers.

The state-of-the-art AI technology captures the subtle acoustic changes in the voice and can be used to assess mental disorders such as depression. Compared to the conventional Patient Health Questionnaire-9 (PHQ-9) for depression screening, the acoustics-based voice biomarker technology improved accuracy, objectivity, and scalability, making mental health screening more effective and reliable.