

徵求重點：

- **Elucidating the Pathogenic Mechanisms and Advancing a Precision Medicine-Based Comprehensive Care Model for Cardiovascular-Kidney-Metabolic (CKM) Syndrome in Taiwan**

研究重點內容：

1. Objective:

- The objective of this call for proposal is to elucidate the pathophysiology and develop effective strategy to lower the burden of cardiovascular-kidney-metabolic (CKM) syndrome in Taiwan.

2. Background:

- Taiwan currently faces substantial healthcare burden and high expenditures related to chronic kidney disease, diabetes, hypertension, and ischemic heart disease. Recent studies show that cardiovascular kidney disease and cardiometabolic disease are closely interconnected, suggesting they should be viewed together as CKM syndrome or diseases. While innovative therapies are available, many patients continue to experience fragmented care. A comprehensive, patient-centered model for managing CKM syndrome are truly critical. Improving clinical outcomes for patients with CKM by prioritizing individualized care has become a pressing health issue in Taiwan.

3. Research Priority:

- The study must fulfill the study frame of Taiwan Cardiovascular, Renal and Metabolism (T-CaReMe) Program. This program will be patient-oriented and focus on inter-connections among cardiovascular disease, kidney disease, diabetes, and metabolic disorders. Therefore, this project is recommended to include, but not limited to, a well-designed clinical trial aimed at investigating the pathogenesis, prevention, treatment, and prognosis of CKM syndrome in order to obtain better clinical outcomes. This clinical trial should encompass and integrate 2 to 3 different disease systems (e.g., patients with type 2 diabetes and chronic kidney disease) and are recommended to achieve at least a statistically appropriate enrolled sample size.-Through DNA array profiling, patients can be stratified and randomly assigned to either control or intervention groups based on their polygenic risk scores. Multifactorial interventions including but not limited to clinical guidelines recommended goals attainments as compared to regular control should form the basic frame of study design. In the meantime, potential biomarkers will be regularly monitored, including blood, urine, stool for microbiota analysis. In addition, body composition assessment via DEXA for body fat distribution, such as imaging studies (CT/MRI) of abdomen for liver/visceral fat, are recommended. Clinical outcomes should be systematically assessed over a follow-up period of 2 to 3 years.

Leveraging precision health as a core strategy, this study will incorporate advanced medical technologies (including Artificial Intelligence, Big Data analytics, and the Internet of Things, etc.) to enhance disease prediction and develop effective prevention, prediction and treatment paradigms.

- Applicants may address the research objectives from multiple perspectives, including prevention, prediction, diagnosis, therapeutic intervention, and integrated outpatient care. Approaches may encompass mechanistic studies, identification and management of risk factors, development of biomarkers, therapeutics, mobile and medical devices, as well as cost-effectiveness analyses of existing intervention strategies.
- Interdisciplinary collaborations across multiple medical centers, as well as international partnerships, are strongly encouraged.