月旦時論

智慧城市的健康承諾：智慧醫療生態系與臺灣長照服務在地化挑戰

The Health Promise of Smart Cities: Smart Healthcare Ecosystems and the Challenges of Long-term Care Localization in Taiwan

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摘 要

本文旨在確立「關係導向式智慧醫療城市」的核心概念，區辨其與傳統醫療數位化在治理邏輯上的根本差異，並將智慧醫療社群視為一種以去中心化協作為基底的醫療關係重組框架。在全球高齡化與少子化導致人口下降、稅基萎縮，並威脅社會福利與公共建設財源的衝擊之下，臺灣長期照顧服務（下稱長照）在地化亦面臨「服務模式過度依賴傳統人力」、「遠距醫療法規侷限」與「醫療資訊系統整合不足」三項實務

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困境。本文提出法制與治理視角分析，研究論證若臺灣欲真正邁向以人為本的智慧城市，必須優先完成法規調適，並建構「社區核心醫師」制度、擴大通訊診療適用性，以及建置「流動式醫療人力共享機制」等改革藍圖，使智慧醫療得以深度嵌入在地健康與長照系統之中，以回應高齡化與少子化社會的迫切挑戰。

This paper aims to establish the core concept of the "Relation-Oriented Smart Health City," highlighting its fundamental divergence in governance logic from traditional healthcare digitalization. It regards the Smart Healthcare Community (SHC) as a framework for reorganizing medical relationships through decentralized collaboration. Due to global aging and low birth rates leading to population decline, the erosion of the tax base, and threats to social welfare and public funding for infrastructure, Taiwan's localized long-term care sector faces three key practical challenges: "over-reliance on traditional manpower service models," "regulatory restrictions on telemedicine, "and" insufficient integration of medical information systems." Analyzing the issue from legal and governance perspectives, this study argues that if Taiwan truly aims to transition toward a people-centered smart city, it must prioritize regulatory adaptation and alignment, thus developing blueprints such as the establishment of a 'Community Core Physician' system, the expansion of the scope of remote consultation and treatment, and the implementation of a "Shared Mobile Healthcare Workforce Mechanism". These initiatives will help embed smart healthcare deeply within local health and long-term care systems, addressing the critical challenges of an aging society with low birth rates.

壹、智慧城市與智慧醫療

一、定義與發展脈絡

　　根據聯合國報告，全球城市人口自1950年的30%快速增長，至2021年已達到56.6%[1]，預計至2050年將有近三分之二（逾70%約）的全球人口居住於城市區域。[2]為有效緩解人口高度集中對環境、交通、能源及公共服務系統所造成的巨大壓力，智慧城市（Smart City）已成為各國政府重要的治理取向。為回應人口集中對環境、交通、能源及公共服務所造成的壓力，智慧城市逐漸成為各國治理的治理取向。經濟合作暨發展組織（Organisation for Economic Co-operation and Development, OECD）將智慧城市描述為一種「透過協作式多方利害關係者程序，善用數位技術以提升公民福祉、提供更有效率且永續與包容之城市服務與環境的策略」。[3]

　　智慧醫療（Smart Healthcare）則體現了將物聯網（Internet of Things, IoT）、雲端運算、資料分析及人工智慧（artificial intelligence, AI）等工具深度導入既有醫療流程的趨勢，使遠距醫療（Telemedicine）、遠程監測（Remote Patient Monitoring）、整合型電子病歷、穿戴型裝置與AI輔助診斷等照護模式逐漸成熟。然而，醫療照護業從「電子化」邁向「智慧化」的轉變，絕非僅止於單純的技術升級，其涉及的是

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[1] United Nations Department of Economic and Social Affairs, World Urbanization Prospects 2025: Summary of Results (2025).

[2] United Nations Department of Economic and Social Affairs, World Urbanization Prospects: The 2018 Revision (2019).

[3] OECD, The Policy Implications of Digital Innovation and Megatrends in (Smart) Cities of the Future: A Project Proposal, OECD, Paris, CFE/RDPC/URB 2 (2018).
原文為："initiatives or approaches that effectively leverage digitalization to boost citizen well-being and deliver more efficient, sustainable and inclusive urban services and environments as part of a collaborative, multi-stakeholder process."

本檔案僅供試閱，完整內容請見本刊。