

11/21 Enhancing Smart Healthcare: TMU Health Fully Adopts Inventecs Smart Infusion System

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Taipei Medical University (TMU) Health announced that its healthcare system has fully adopted Inventec Corporation’s (TPE : 2356) “SmartMed Infusion System”, becoming the first in Taiwan to implement a fully connected smart infusion system across. It includes Taipei Medical University Hospital, Wan Fang Hospital, Shuang Ho Hospital, and Hsin Kuo Min Hospital, totaling 1,080 smart infusion pumps. SmartMed Infusion System enables real-time monitoring to ensure patient safety and significantly reduces the nursing workload by minimizing the need to manage infusion interruptions, setting a new milestone in smart infusion field in Taiwan.



TMU Chairman Ray-Jade Chen stated that the TMU Health achieved full integration of HIS 3.0 this year across its four hospitals, incorporating generative AI (GenAI) as part of daily operations. The "Digital, Precision, Regenerative" model includes digital pathology, genetic testing, and cell therapy, which are now foundational to clinical care. The system-wide adoption of SmartMed Infusion System is not only a crucial step in enhancing infusion safety but also a major milestone in TMU Health's advancement toward smart healthcare. With a focus on patient safety, TMU Health also employs GenAI-driven innovations and integrates digital and physical resources to enhance medical information systems and equipment, establishing a strong foundation for a smart ward and marking significant progress toward a smart hospital.

TMU President Mai-Szu Wu emphasized the "One Campus" concept leading TMU Health's future vision. The collaboration with Inventec in implementing the SmartMed Infusion System uses advanced digital technology, IoT, and automation to optimize the healthcare environment. This initiative is a concrete realization of smart ward characteristics, focusing on improving patient safety and comfort while reducing the workload on healthcare professionals, ultimately moving toward efficient, precise medical care.

Inventec Vice President for Medical Electronics Business Ching-An Tseng highlighted that the SmartMed Infusion System includes self-developed SmartMed infusion pump, SmartNet System Software, and various kinds of infusion sets co-developed with Niddleless Corporation. The implementation of SmartMed Infusion System by TMU reflects Inventec Group's strengthened role in the medical device business. This MIT (Made in Taiwan) smart infusion system is expected to challenge the dominance of foreign brands in infusion business.

The SmartMed Infusion System offers four major highlights:

1. Automated Infusion Parameter Setting and Error Prevention: When nurses scan correct patient and medicine barcodes, SmartMed system will automatically download doctor's order infusion parameters to the pump and record log in the system

to minimize manual entry errors, ensuring precision and safety in infusion procedure.

2. Real-Time Monitoring and Alert System: Through the SmartNet System Software, nurses can monitor the status of all infusion pumps on a central dashboard or mobile device. Alerts are sent instantly if abnormalities occur, enabling timely responses to prevent risks.

3. Closed-Loop Smart Medication System: SmartMed Infusion System is highly integrated with the hospital's information system, allowing all processes from prescription to infusion pump operation to be traced, preventing omissions or errors and enhancing patient safety.

4. Enhanced Nurse Medication Management: SmartMed Infusion System can reduce the need for manual operations by nurses, and improve work efficiency and reinforce nurses' role in monitoring and confirming medication administration accuracy, to ensure patient safety.

According to the U.S. Institute for Safe Medication Practices (ISMP), conventional smart infusion pumps are often associated with errors due to operational complexity. Taiwan's Ministry of Health and Welfare emphasizes the importance of high-alert medication management and flow control in its 2024-2025 patient safety goals. In the first three months following implementation of SmartMed Infusion System (August to October 2024), TMU Health's database recorded 136 potential near misses intercepted by SmartMed Infusion System across four hospitals, with a near miss prevention rate of 0.44% (136 incidents out of 30,562 patient days). Compared to the international medication error rate of 2.3%-17.7% for conventional smart infusion pumps, SmartMed Infusion System shows superior accuracy and preventive capabilities, significantly enhancing patient safety. Additionally, SmartMed Infusion System reduce the need for nurses to manually match medications or adjust infusion volumes, saving approximately 4 minutes per use, totaling 795 hours saved monthly, enhancing efficiency and reducing operational near miss incidents.

The collaboration between TMU Health and Inventec not only highlights the potential of integrating healthcare and technology but also aims to improve medical quality and patient safety through the development of smart wards. With extensive

clinical experience in smart medical applications and ongoing innovation in medical information systems, TMU Health and Inventec anticipate further advancements in medical services, aiming to offer efficient, convenient care. This collaboration is expected to encourage more hospitals to adopt Taiwan-made smart medical devices, and may promote Taiwan's leading healthcare technology and service models to Southeast Asia, benefiting more people.

精進智慧醫療 北醫體系全面導入英華達「思邁智慧輸液系統」



圖說：北醫大陳瑞杰董事長(左)與英業達集團葉國一會長(右)宣示合作，發表全台首家全面導入「醫囑連線型給藥」智慧幫浦。

臺北醫學大學宣布，其所屬醫療體系已全面導入英業達(2356)集團英華達公司之「思邁智慧輸液系統」，成為全台首家全體系導入「醫囑連線型給藥」智慧幫浦的醫療體系，包括臺北醫學大學附設醫院、萬芳醫院、雙和醫院及新國民醫院等四家醫院，共計導入 1,080 台智慧輸液幫浦，不僅可透過系統連線進行監控，確保病人輸液安全，更大幅降低護理師因處理輸液不順暢而在病床與護理站奔波的工作負荷，開創台灣智能輸液安全新紀元。

北醫大陳瑞杰董事長表示，北醫醫療體系 HIS 3.0 資訊在今年已完成三院



一體，並全面導入生成式 AI，成為醫院的工作日常，並將「數位、精準、再生」三種前瞻醫療，所內含的：數位病理、基因檢測、細胞治療等，落實為臨床照護的基準，此次附屬醫院全面導入智慧輸液機制，不僅是提升輸液安全的重要步驟，更是北醫醫療體系推動智慧醫療的重大里程碑，北醫重視病人安全承諾，運用 AI 賦能、虛實整合，持續精進醫療資訊與設備，為打造智慧病房奠定堅實的基礎，也為邁向智慧醫院持續跨出一大步。

北醫大吳麥斯校長提到，北醫體系強調「One Campus」引領未來，此次與英業達公司合作，將醫院資訊系統全面導入「思邁智慧輸液系統」，不但利用先進的數位技術、物聯網及自動化系統來優化醫療照護環境，更是具體實踐智慧病房的特色，因為智慧病房的核心價值，正是提升病人的安全性與舒適度，同時減輕醫療人員的負擔，才能真正邁向高效、精準的醫療照護。

英華達醫療電子事業負責人曾慶安副總經理指出，思邁智慧輸液系統包括由英華達自主研發製造的思邁輸液幫浦、思邁輸液連線系統軟體及與尼得立斯共同研發製造的各款式輸液套。本次思邁輸液系統獲得北醫體系的採用，除了深感榮幸，更展現英業達集團發展醫療電子事業朝智慧醫療的腳步更加穩固，期盼此國人百分之百自主研發製造的系統，能打破以往由國外廠牌獨佔的局面。



圖說：北醫體系導入思邁智慧輸液系統後，大幅提升護理師的工作效率，以及病人的用藥安全。



而此 MIT (Made in Taiwan) 台灣研發製造的智慧輸液有四大亮點：

1. 自動化輸液參數設定與醫療疏失阻斷：當護理師掃描病人及藥品條碼後，系統會自動將醫師開立的輸液參數下載至輸液幫浦，同步記錄在系統中，減少人工輸入錯誤的風險，確保每次輸液操作的精準度與安全性。

2. 實時監控與異常提醒：透過連線系統，護理師可在中央控制台或移動設備上即時監控所有輸液幫浦的狀態，若出現異常或中斷，系統將立即發出警報，讓護理師能迅速反應，避免醫療風險。

3. 閉環式智慧給藥系統：與醫院的資訊系統高度整合，從醫囑開立、輸液幫浦運作到輸液紀錄回傳，所有過程均可追溯，有效防止遺漏或錯誤，進一步保障病人安全。

4. 護理師的用藥把關：系統的自動化設計減少了護理師手動操作需求，提升了工作效率，同時強化護理師在給藥過程中的監控與確認角色，提高給藥精確性、處理輸液異常的即時性，確保了每位病人的給藥安全。

根據美國用藥安全作業協會 (ISMP) 報告，傳統靜脈輸液幫浦在操作中常因複雜性而導致用藥錯誤。衛生福利部 113-114 年度病人安全工作目標中強調加強高警訊藥品的管理及流速控制的重要性。臺北醫學大學醫院資訊團隊與思邁智慧輸液系統進行系統整合，可同步比對病人、醫囑、藥品，自動設置輸液參數，提升護理師工作效率並確保病人輸液安全。北醫大醫療體系導入 3 個月內(2024 年 8 月-10 月)期間從系統後台資料庫可發現輸液藥物在未給到病人身上前，系統成功阻斷可能發生的跡近錯失 (near miss) 四院總計 136 件，錯誤阻斷率為 0.44%(136 件除以總使用人日數 30,562)。換言之，一旦幫浦沒有成功阻斷，就可能會有 0.44% 的給藥錯誤發生率，相較於國外文獻提及使用一般型智慧輸液幫浦系統給藥錯誤發生率 2.3%-17.7% 不等，本系統展現了更高的精準度與預防能力，在病人安全保障上具有顯著優勢。另一方面，智慧輸液幫浦可免除忙碌護理師之人工藥物比對、輸液量調整等繁瑣操作，每人次使用可節省約 4 分鐘操作時間，平均每個月共可節省了 795 小時，顯著提升護理師工作效率並降低操作錯誤風險。

北醫體系與英業達集團的合作，不僅展示了醫療與科技結合的潛力，還期望透過智慧病房的發展，進一步提升醫療品質與病人安全。北醫體系具備豐富



臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

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的智慧醫療臨床應用經驗，以及持續創新醫療資訊系統的能力，雙方期盼未來持續創新醫療服務，實現更高效、便捷的醫療照護體驗。這不僅將鼓勵更多醫院採用 MIT 台灣製造的智慧醫療設備，也有望將台灣領先的醫療技術和服務模式推廣至東南亞地區，展現台灣卓越的醫療實力，造福更多民眾。



圖說：北醫體系與英華達公司合作，成為全台首家全面導入「醫囑連線型給藥」智慧幫浦的醫療體系。