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Implementation of Hospital-wide Intelligent and Mobile Early Warning Systems

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Abstract

Implementation of early warning systems (EWSs) in medical institutions has become a healthcare trend worldwide. The case hospital received authorization from the Royal College of Physicians to implement its National Early Warning System ver. 2 (NEWS2). The hospital-wide implementation of the system was completed in July 2020.

The hospital developed its own smart and mobile EWS system, in addition to NEWS2, and also adopted the ISBAR (identification, situation, background, assessment, recommendations) tool, the qSOFA (quick Sequential Organ Failure Assessment), interactive team communication, and used the LINE real-name registration mechanism to protect patient data. Also modified the hospital's healthcare workflow to establish an EWS monitoring center, medical audit team, and rapid response teams, helping patients with deteriorated conditions to receive timely clinical retreatment to prevent medical accidents.

After the EWSs were implemented, the incidence rate of unexpected CPR decreased by 31%, the mortality rate after CPR decreased by 50% as well as helped healthcare providers were well-timed to obtain patients' physical information, and facilitate interprofessional communication.

Keywords: early warning system, disease deterioration, smart health care, social media

建置全院性「智慧化、行動化臨床早期預警系統 (Early Warning System, EWS)」

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摘要

在醫療機構導入早期預警系統(Early Warning System, EWS)是全世界醫療照護的趨勢之一。本院獲得英國皇家醫師學會(Royal College of Physicians, RCP)授權，導入其發展的臨床早期預警系統(National Early Warning System, ver. 2, NEWS2)，並於2020年7月在醫院全面建置。

本院自行開發的智慧化、行動化EWS除包含NEWS2外，亦納入ISBAR、qSOFA、互動式團隊溝通及社交媒體(LINE)實名登錄EWS的資安機制。除此之外，也調整醫療照護模式，建立EWS監控中心、臨床督導團隊(Medical Audit Team, MAT)及緊急應變團隊(Rapid Response Team, RRT)，能夠及早介入病情惡化病人的臨床治療，避免演變成醫療意外事故。

導入EWS後的成果：1.非預期急救事件發生率降低31%、急救後死亡率降低50%；2.可即時掌握病人生理資訊，促進醫護溝通。

關鍵詞：臨床早期預警系統、病情惡化、智慧醫療、社交媒體