

Improving Clinical Decision-Making: A Focus on Early Warning Systems and Scoring Methods

Serdar Özdemir^{1*}

¹ Department of Emergency Medicine, University of Health Sciences Umraniye Training and Research Hospital, Istanbul, TR

* Corresponding Author: Serdar Özdemir E-mail: dr.serdar55@hotmail.com

Letter to Editor

Dear Editor,

Examinations, laboratory tests, radiology, and clinical experience are required to make the most appropriate clinical decisions. There is no single universal clinical decision-making method advocated in routine medical literature. Often, this process is driven by experience, exploration, and clinical gestalt. Clinician management serves as a subjective decision tool in disease management. It has been extensively studied in the literature, particularly in entities such as pulmonary embolism, difficult airway prediction, and severe COVID-19 (1). By combining parameters such as laboratory-vital parameters and combined hematological parameters, clinical decision-making tools have been developed (2-3).

Early warning systems (EWS) help predict which patients will require critical care by evaluating physiological parameters in busy and crowded workspaces. These scores, which can be measured through vital parameters and a simple physical examination, ensure the effective use of resources (4). In intensive care units (ICUs), complex systems are used to predict mortality. APACHE II is the most well-known score used in intensive care, consisting of many parameters that are computationally difficult. Vital parameters, biochemical tests, and blood gas analysis results are used when calculating APACHE II (5). On the other hand, important features of scores used in the emergency department are their quick and easy calculation, requiring no professional knowledge.

The VitalPAC Early Warning Score (ViEWS), developed by Prytherch et al. in 2010, is an EWS that includes six physiological parameters. This score records the pulse rate, systolic blood pressure, respiratory minute rate, body temperature, level of consciousness (assessed by AVPU), and peripheral oxygen saturation (SpO2) parameters. ViEWS is created based on the degree of deviation of these six parameters from their normal ranges. Additional points are given if the patient receives oxygen support. The total ViEWS value, calculated by considering each parameter, provides information about the patient's prognosis (6). By adding the rapid lactate level to ViEWS (ViEWS-L), a score that better predicts outcomes in the geriatric population was developed (7).

The Modified Early Warning Score (MEWS) is one of the triage scoring methods used to identify patients in need of intensive and critical care, and to expedite their transfer to the intensive care unit. It evaluates systolic blood pressure, heart rate, respiratory rate, body temperature, and neurological status. MEWS is included in routine nursing care procedures in some countries and is routinely assessed by nurses. ICU admission rates and mortality rates increase for those who score 5 or more on this scale, although this threshold may vary in different populations or clinical situations. In a Korean study analyzing sepsis patients, combining lactate with the MEWS score improved the prediction of the need for intensive care (8).

The National Early Warning Score (NEWS) is another scoring system used to determine clinical deterioration and follow-up level for all hospitalized patients, as well as to predict clinically high-risk patients. It is calculated by evaluating respiratory rate, oxygen saturation, oxygen support status, blood pressure, body temperature, and neurological status. The NEWS-L score, obtained by combining NEWS with lactate, has been reported to be superior to NEWS alone in geriatric critically ill patients (9). However, contrary to the geriatric patient study, Özkan's study reported that NEWS-L was not superior to NEWS and that they exhibited similar predictive abilities (10).

As a result, researchers are actively working on new parameters and scoring systems to optimize resource utilization and predict critical illness. Researchers should be encouraged to investigate studies on EWS lactate combinations or other combinations.

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