

Benefits of Using Early Warning Scores - A Systematic Review

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Abstract

The Early Warning Scores (EWSs) are tools for bedside evaluation based on five physiological parameters: systolic pressure, pulse, respiratory rate, body temperature and AVPU (alert, voice, pain, unresponsive) score. EWSs have been used in many hospital departments, including general wards, intensive care units, or emergency rooms. Several iterations of EWSs have been developed with varying levels of sensitivity and specificity for use in different populations. The aim of this research was to understand the benefits of using these tools. This systematic review followed the Preferred Reporting Items for Systemic Reviews and Meta-Analyses (PRISMA) guidelines. This study included literature published in PubMed under the MeSH term “early warning score”. The search was performed on 12th July 2023. No restrictions on the types of articles were imposed. Considering the language limitations of the study investigators, only studies available in English were retained. A total of 392 items were retained. The articles’ titles and abstracts were screened to investigate whether the benefits of using early warning scores were the topic. It resulted in 286 relevant articles. Two major strength categories have been identified: the patient oriented outcome and the healthcare personnel oriented benefits. The patient oriented outcome indicators that these tools can predict are: transfers to the intensive care unit, sepsis, in hospital cardiac arrest, mortality, or disease specific clinical deterioration. Multiple healthcare personnel oriented strengths of these tools have been identified, including their simplicity and ability to standardize communication and reduce staff work burden, especially if they are continuously electronically recorded. The research highlights the importance of the integration of data-driven models into personalized care and represents an opportunity to inform biomedical and health informatics research on designing and evaluating EWS-based clinical interventions.

Keywords: Early Warning Score; Physiological parameters; Benefits

