

## Prehospital National Early Warning Score predicts early mortality.

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#### Abstract

**BACKGROUND:** National Early Warning Score (NEWS) has been shown to be the best early warning score to predict in-hospital mortality but there is limited information on its predictive value in a prehospital setting. The aim of the current study was to investigate the diagnostic accuracy of NEWS in a prehospital setting using large population-based databases in terms of short-term mortality.

**METHODS:** We calculated the NEWS scores from retrospective prehospital electronic patient record data and analysed their possible relationship to mortality. We included all patient records for patients 18 years or older with sufficient prehospital data to calculate NEWS from 17 August 2008 to 18 December 2015 encountered by the emergency medical services (EMS) in the Hospital District of Helsinki and Uusimaa, Finland. The primary outcome measure was death within 1 day of EMS dispatch.

**RESULTS:** 35 800 patients were included. Their mean (SD) age was 65.8 (19.9) years. The median value of NEWS was 3 (IQR 1-6). The primary outcome of death within 1 day of EMS dispatch occurred in 378 (1.1%) cases. Area under receiver operating characteristic curve (AUROC) for primary outcome of death within 1 day was 0.840 (95% CI 0.823-0.858). AUROC for 1 day mortality in trauma subgroup was 0.901 (95% CI 0.859-0.942).

**CONCLUSION:** Prehospital NEWS predicts mortality within 1 day of EMS dispatch with good diagnostic accuracy.