

00239 **Assessment of Singapore Emergency Department Sepsis (SEDS) Model for Predicting Disease Severity Among Patients Presenting to the Emergency Department With Suspected Sepsis**

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Aims: A recently-developed Singapore Emergency Department Sepsis (SEDS) model aimed to predict 30-day inhospital mortality (IHM) in patients with suspected sepsis in the emergency department (ED). This model incorporates 2 heart rate variability (HRV) parameters (mean R-R and Detrended Fluctuation Analysis α_2) and 3 other components (age, respiratory rate and systolic blood pressure). In a retrospective study, the SEDS model outperformed the quick Sequential Organ Failure Assessment (qSOFA) score with an area under the receiver operating characteristic (AUROC) of 0.78 (95%CI: 0.72–0.86), compared to 0.65 (95%CI: 0.56–0.74) by qSOFA score. This study aims to prospectively validate the performance of the SEDS model in predicting IHM among ED patients with suspected sepsis, comparing it with the qSOFA score.

Methodology: Adult patients with suspected infection who fulfilled the Systemic Inflammatory Response Syndrome (SIRS) criteria in the ED were included. HRV parameters were computed from five-to-six minute singlelead electrocardiogram tracings. SEDS and qSOFA scores were computed. The primary endpoint was 30-day IHM.

Result: Of the 96 patients included in the study (mean age 67.7), 45.8% were males and 18(18.8%) met the primary endpoint. The SEDS model performed with an AUROC of 0.75 (95%CI: 0.62-0.88), compared to 0.74 (95%CI: 0.60-0.87) by qSOFA. The SEDS model also outperformed other scores, such as National Early Warning Score (NEWS) and Modified Early Warning Score (MEWS), which performed with AUROCs of 0.69 (95%CI: 0.52-0.82) and 0.66 (95%CI: 0.50-0.82) respectively. Secondary analysis also revealed that SEDS performed better than all aforementioned scores in predicting 30-day composite outcomes including death, intubation and Intensive Care Unit admission, with an AUROC of 0.77 (0.66-0.87), as compared to 0.69 (0.57-0.80), 0.58 (0.44-0.71) and 0.56 (0.43-0.70) for qSOFA, NEWS and MEWS respectively.

Conclusion: The SEDS score continued to perform better than qSOFA in predicting mortality for sepsis among ED patients.