

## Performance of the Paediatric Index of Mortality 3 and Paediatric Logistic Organ Dysfunction 2 Scores in Critically Ill Children

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### Abstract

**Introduction:** The Paediatric Index of Mortality 3 (PIM 3) and Paediatric Logistic Organ Dysfunction 2 (PELOD 2) scores were recently revised. We aimed to assess the performance of these scores in a contemporary cohort of critically ill children. **Materials and Methods:** This is a single-centre prospective study conducted in a multidisciplinary paediatric intensive care unit (PICU). Consecutive PICU admissions over 1 year were included and admission PIM 3 and PELOD 2 scores were calculated. The performance of each of the scores was evaluated by calculating the area under the curve (AUC) of the receiver operating characteristic (ROC) and the Hosmer-Lemeshow goodness-of-fit test for the outcome of PICU mortality. **Results:** A total of 570 patient admissions were eligible for this study. The median age of patients was 3.1 (interquartile range [IQR]: 0.4, 8.9 years). Overall median PIM 3 and PELOD 2 scores were 1.2 (IQR: 0.4, 3.2) % and 4 (IQR: 2, 7), respectively. The overall mortality rate was 35/570 (6.1%). The PIM 3 and PELOD 2 scores had good discrimination for mortality (AUCs 0.88 [95% confidence interval (CI) 0.85, 0.91] and 0.86 [95% CI 0.83, 0.89], respectively). Goodness-of-fit was satisfactory for both scores. Higher PIM 3 and PELOD 2 scores were also associated with decreasing ventilator and PICU-free days. **Conclusion:** PIM 3 and PELOD 2 scores are robust severity of illness scores that are generalisable to a contemporary cohort of critically ill children in Singapore.

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**Key words:** Multiple organ dysfunction syndrome, Paediatric intensive care unit, Patient outcome assessment, Severity of illness index

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