From bytes to bedside – Detecting Sepsis earlier with the Qld Sepsis Prediction Algorithm

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Introduction: The timely recognition and management of Adult Sepsis remains challenging and a significant contributor to preventable harm in healthcare. The Queensland Sepsis Algorithm (QSA) is an emerging AI decision support tool to assist clinicians.

Aims: The QSA version 2 is a contemporary Machine Learning model trained on Qld Health EMR data. The research team have undertaken a silent prospective evaluation using near-live data indicating solid predictive performance. Work is underway to develop a human computer interface for alert assessment and management by a sentinel nurse prior to clinician notification at the bedside. This is necessary for the pilot trial of the QSA alert to commence in late 2026.

Methods: The silent prospective evaluation was designed to compare QSA performance against a Sepsis 3 label and the clinical judgement of senior medical staff. Each case was assessed by 2 clinicians blinded to the QSA prediction and the assigning of the Sepsis 3 label. An adjudication process was established for clinical disagreement.

Results: The QSA performed well with high clinical concordance. The evaluation highlighted issues when the Sepsis 3 label is applied to large data sets and identified common scenarios where false positive alerts may occur. An overview of study participants, major demographics, and key study outcomes reported, including numerical results, will be presented.

Conclusions and Relevance: The QSA v2 has shown encouraging clinical concordance and a novel human computer interface is being co-designed to enable a pilot clinical trial of QSA in two Qld emergency departments in late 2026.