

Clinical Evidence Series

Simulation evaluation of an enhanced bedside monitor display for patients with sepsis



What's different

An enhanced bedside monitor display with Horizon Trends adds directional signaling and trend visualization to standard physiologic monitoring, helping clinicians see the direction, magnitude, and rate of change in key parameters rather than relying on raw waveforms and numeric values.



Interpretation

In a simulated sepsis scenario, presenting physiologic data with trend-based visual cues was associated with faster recognition of sepsis and earlier initiation of guideline-recommended interventions, suggesting that display design may meaningfully influence the speed of clinical decision-making.



Key takeaways

Exposure to a monitor display with Horizon Trends significantly reduced time to recognize sepsis (1.15 vs. 2.47 minutes; $p < 0.001$), compared with a standard monitor display.



Background

- Critically ill patients require continuous monitoring to identify changes in physiological status
- Standard bedside monitors display multiple parameters without directional cues, which may delay recognition of changes in patient status



Horizon Trends

An enhanced bedside monitor display providing trend-based and directional visual cues.



Objectives

Compare time to sepsis recognition and initiation of guideline-recommended interventions using standard monitoring with and without Horizon Trends in a simulation environment.



Study design

Two-group, quasi-experimental study of critical care nurses ($n = 75$), following standard sepsis education based on Surviving Sepsis Campaign guidelines.



Results



53% faster time to sepsis recognition (1.15 vs. 2.47 minutes, $p < 0.001$)



50% faster time to fluid bolus initiation (1.65 vs. 3.32 minutes, $p < 0.001$)



35% faster time to vasopressor initiation (0.76 vs. 1.38 minutes, $p < 0.001$)



26% faster time to order antibiotics (1.25 vs. 1.62 minutes, $p < 0.020$)

Results were derived from a computer-simulated sepsis scenario and reflect nurse responses in a simulation environment. Findings may not be representative of performance or response times in actual clinical practice.