

Continuous Trending of vital signs is superior to threshold alerts in hospitalized patients

Continuous trending enables earlier and more accurate detection of clinical deterioration by capturing subtle changes and trajectories in patient physiology that may not cross static thresholds but are clinically significant. This approach improves predictive accuracy for adverse events, as models incorporating trend data outperform those using only current or threshold-based values, with higher area under the curve (AUC) and sensitivity for early detection of deterioration.^[1-3]

Continuous trending also reduces unnecessary alarms and alarm fatigue, a common problem with threshold-based systems that generate frequent false positives when vital signs transiently cross preset limits. Trend-based systems can maintain high sensitivity while improving specificity, resulting in fewer but more clinically relevant alerts, which enhances workflow efficiency and staff satisfaction.^[4-5] Additionally, continuous trending supports more timely and proactive interventions, as it allows clinicians to recognize and respond to gradual physiological decline before critical thresholds are breached, potentially reducing ICU transfers and mortality.^[6-8]

Overall, **continuous trending provides earlier, more accurate, and actionable detection of patient deterioration with fewer false alarms compared to threshold alerts.**

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