

Clinical Evidence Series

A controlled trial of electronic automated advisory vital signs monitoring in general hospital wards



What's different

Automated monitoring replaces manual vital sign collection and documentation with direct device integration, real-time early warning score calculation, and color-coded advisory alerts, providing continuous visibility and prompting escalation.



Interpretation

Automated monitoring was associated with earlier detection of patient deterioration and improved workflow efficiency compared with a conventional manual process.



Key takeaways

Electronic automated vital sign monitoring was associated with an increase in respiratory-triggered RRT calls, a reduction in vital sign collection time, and improved survival.



Background

- Rapid response team (RRT) activation depends on accurate, timely vital sign measurements and clinical escalation
- Manual vital sign collection and documentation can be incomplete or inconsistent, limiting early identification of patient deterioration
- Automated vital sign capture and escalation prompts may improve identification and management of deteriorating patients



Study design and methods

- Multicenter before-and-after study across 12 general wards in the United State, Europe, and Australia
- Intervention: deployment of electronic automated advisory vital sign monitors (IntelliVue MP5SC) to support vital sign acquisition and early warning score calculation
- Monitors displayed early warning scores using color-coded ranges with advisory prompts to guide escalation, support timely measurement, and reinforce adherence to existing RRT activation criteria



Objectives

Assess the impact of automated vital sign monitoring on RRT utilization, patient outcomes, and workflow efficiency



Results



Detection/triggering: Respiratory RRT calls **increased** (21% vs. 31%; $p = 0.029$)



Workflow efficiency: Vital sign collection time **reduced** by 1.6 minutes ($p < 0.001$)



Clinical outcomes: **Improved** survival among RRT patients (86% vs. 92%; $p = 0.04$)



No significant change in total RRT calls or cardiac arrest rates