PHILIPS

# Clinical Evidence Series

## Effect of an automated notification system for deteriorating ward patients on clinical outcomes

### What's different

An electronic automated advisory vital-signs monitoring and notification systems replaces exclusive reliance on manual observation made by bedside staff with redundant, system-level detection and escalation, automatically notifying the rapid response team when early warning scores worsen.

### Interpretation

Automating the afferent limb of rapid response systems was associated with more timely escalation, earlier intervention, and fewer failure-to-rescue events, supporting the concept that reliability in deterioration detection drives patient outcomes on general wards.

### Key takeaways

After implementation of automated notification, rapid response activations increased, while cardiac arrests and hospital mortality declined.

### Background

- Delayed recognition of clinical deterioration on hospital wards contributes to preventable cardiac arrest and death
- Rapid response teams have been shown to reduce hospital mortality, but failure-to-rescue still occurs, which may be related to monitoring strategies and delayed rapid response team activation

### Objectives

Evaluate whether monitoring technology with real-time notification to rapid response teams improves escalation of care and patient outcomes on general wards.

### Intervention

Automated vital sign capture and real-time wireless notifications to rapid response teams using the Philips IntelliVue Guardian* solution.

### Study design

Prospective before-and-after study of adult patients admitted to two UK general medicine wards using automated EWS monitoring with RRT notification versus standard care.

*Product no longer in active support.

## Results

### Care escalation

**Increase** in RRT notifications

**1.33** ⟶ **1.43** per patient (p = 0.001)

### Clinical outcomes

**Decrease** in cardiac arrests
**14** ⟶ **2** (p = 0.002)

**Decrease** in hospital mortality
**8.1%** ⟶ **6.5%** (p = 0.042)

**Decrease** in ICU mortality
**45%** ⟶ **24%** (p<0.04)

**Decrease** in serious adverse events
**12.5%** ⟶ **8.2%** (p<0.001)

Subbe CP, Duller B, Bellomo R. Effect of an automated notification system for deteriorating ward patients on clinical outcomes. Crit Care. 2017;21:52. doi:10.1186/s13054-017-1635-z