

Impact of Health Information Technology in Acute Care Settings



Critically ill patients admitted to inpatient facilities are often at risk of acute physiologic deterioration. This deterioration can lead to prolonged hospitalisation, admission to the ICU, and cardiorespiratory arrest. Often, a patient's worsening condition remains undetected for hours before the escalation of care. Strategies have been used to recognise deterioration early, ranging from alerts based on vital sign alterations to trend analysis and complex early warning scores. These have been combined with multidisciplinary rapid response teams for timely intervention and prevention of cardiorespiratory arrest. However, these efforts have not led to consistent improvements in outcomes.

Health information technology (HIT) incorporates various information sources, data, and technology to facilitate improved communication and decision-making. Electronic medical records (EMRs) provide access to large quantities of clinical data and utilisation of predictive analytics. EMR-based alarms have emerged to support the timely detection of acute conditions such as sepsis, acute kidney injury (AKI), and respiratory failure. Digital clinical decision support can also help standardise the approach and management of deteriorating patients.

In a recent analysis, researchers evaluated the impact of health information technology (HIT) for early detection of patient deterioration on patient mortality and length of stay in acute care hospital settings.

The analysis included studies that enrolled patients hospitalised on the floor, in the ICU, or admitted through the emergency department. The studies compared HIT for early detection of patient deterioration with usual care and reported at least one endpoint of interest: hospital or ICU length of stay or mortality at any time. Of the 30 eligible studies, seven were randomised controlled trials, and 23 were pre-post studies.

The analysis showed that compared with usual care, HIT for early detection of patient deterioration was not associated with a reduction in hospital mortality or length of stay in the RCTs. On the other hand, HIT interventions demonstrated a significant association with improved hospital mortality and reduced hospital length of stay in the pre-post studies.

Source: [Critical Care Medicine](#)

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Published on : Tue, 19 Jul 2022