

Ascom Rapid Response Solution contributes towards 53% reduction in admissions to ICU due to IHCA



Background

This modern, 700-bed hospital in Southeast Asia—composed entirely of single-patient rooms—achieved HIMSS Level 7 status in 2020. Much of the patient journey is fully electronic. Patient condition trends, including early signs of clinical deterioration, are monitored through an early warning scoring system integrated into the electronic medical record (EMR).

Problem statement

Approximately 1.6 out of every 1,000 admitted patients experience an in-hospital cardiac arrest (IHCA). Because patients are cared for in single rooms, clinical teams rely heavily on routine spot-check monitoring. When deterioration is detected during these spot checks, hospital policy requires escalation to the appropriate Rapid Response Team.

However, the current escalation threshold often triggers communications either unnecessarily or too late to influence outcomes.

This contributes to several challenges

- **Variable intervals** between routine spot checks
- **High volumes of rapid response calls**, many of which do not require urgent intervention
- **An increased number of IHCA**s, some of which are missed or escalated too late

The hospital already utilizes a code blue activation workflow

1. Spot-check vitals are automatically uploaded to the EMR
2. National Early Warning Score 2 (NEWS2) is calculated
3. Elevated scores trigger an alert to middleware, which sends email and SMS notifications to the Rapid Response team

Despite this automation, communication remains inefficient. Alerts are sent broadly, based on the escalation matrix and without context about the patient or the clinical situation. As a result, caregivers struggle to determine whether an alert is relevant to them. Messages are frequently overlooked or assumed to be someone else's responsibility, reducing the effectiveness of the system.

Solution description

The proposed solution addressed the challenge through three key interventions:



Implement continuous monitoring using wearable technology

This reduces reliance on intermittent spot checks and provides real-time visibility into changes in patient condition



Refine the Early Warning Score (EWS) for patients at risk of IHCA

The hospital adjusted the underlying NEWS2 logic within the EPR to better identify deterioration patterns specific to this patient cohort



Enhance the rapid response communication pathway

Working with Ascom, the hospital redesigned the alerting workflow to improve timeliness and accountability for IHCA-related notifications

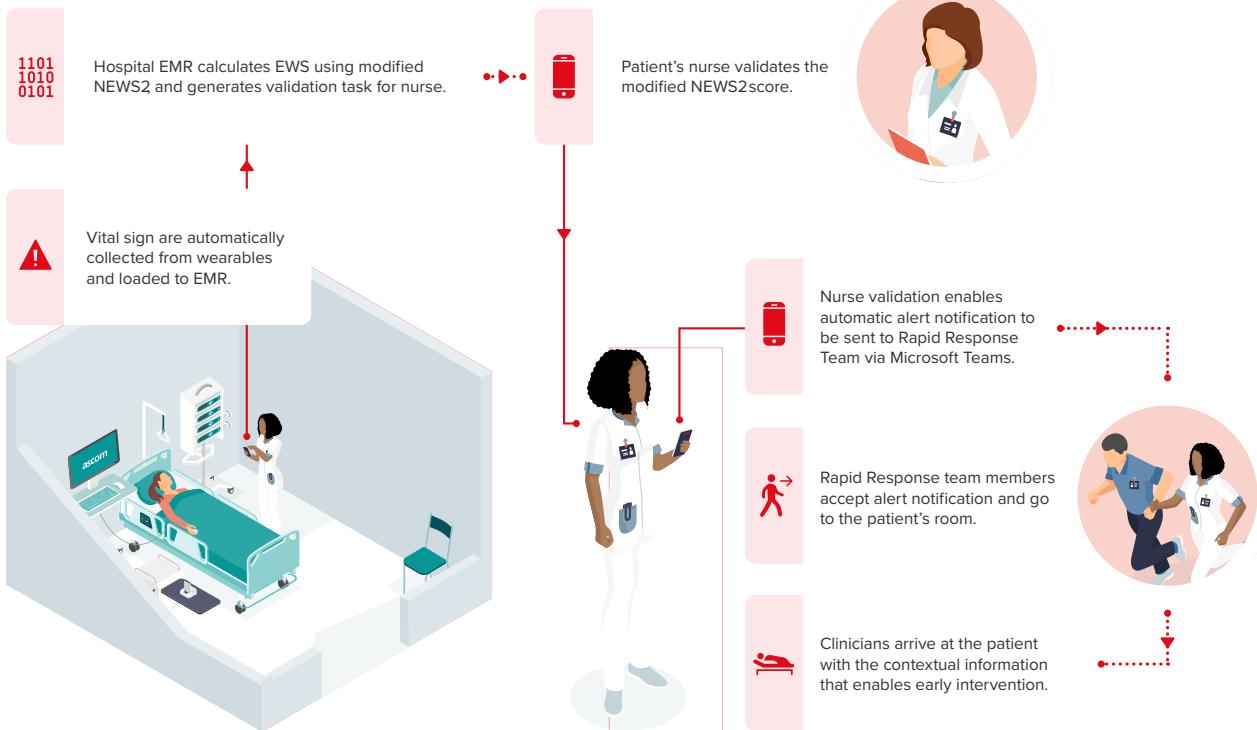
After integrating wearables and updating the NEWS2 scoring, Ascom was tasked with routing only the modified “red zone” NEWS2 alerts to the Rapid Response Team via Microsoft Teams. These notifications now include key clinical context—patient ID, vital signs, allergies, and diagnosis—allowing responders to quickly assess the relevance and urgency of each alert.

However, during the initial evaluation period performance remained unchanged. The Rapid Response team determined that a high volume of false-positive alerts was contributing to alarm fatigue.

To address this, a filtering algorithm was introduced within the EMR. This refinement reduced the number of daily red-zone alerts from approximately seven to fewer than three, ensuring the team’s attention was directed toward patients who truly required immediate intervention.

The filtering process is integrated directly with the patient’s care plan. If a patient has a documented Do Not Resuscitate (DNR) order or a defined ceiling of care, the system suppresses automatic activation of the Rapid Response Team—even when parameters fall into the red zone. This ensures alerts are clinically appropriate and aligned with each patient’s care goals.

Post implementation workflow



Results



1.22 minutes nurse time per spot check saved



53% reduction in IHCA via NEWS2 modification



26 second response time to modified IHCA alert

Solution results

The impact of the solution can be summarized across three key areas:

1. Continuous patient monitoring with wearable technology

Implementing wearable devices reduced the time required to measure and document vital signs by **1 minute and 13 seconds, a 54.9% decrease** in task duration each time vitals were captured.

Integration of wearable data into the EMR also resulted in a **14.5% reduction in respiratory rate documentation errors**, improving data accuracy and clinical decision-making.

2. Enhanced Early Warning Score specificity for IHCA risk

Adjustments to the NEWS2 scoring logic enabled the Rapid Response Team to identify at-risk patients earlier and intervene more effectively.

This change led to a 53% reduction in IHCAs requiring ICU transfer—from **1.6 to 0.85 cases per 1,000 patients, equating to 0.75 fewer IHCAs per 1,000 patients.**

3. Improved rapid response communication and accountability

By streamlining the alerting workflow and delivering enriched NEWS2 alerts (including patient context) via Microsoft Teams, response times decreased significantly.

Alerts now reach the Rapid Response team in an average of 26 seconds, compared with the hospital's target of 3 minutes for both code blue and red-zone events.

Estimated cost savings

With **0.75 per 1,000** fewer patients experiencing an IHCA requiring ICU care, and an annual inpatient volume of **~43,400**, the hospital avoids approximately:

- **32.55 ICU admissions per year,**
- each with an average **4.9-day ICU stay**, totaling
- **159.5 ICU bed-days saved annually.**

At a cost of **\$1,264 per ICU bed-day**, this translates to an estimated annual saving of: **\$201,601.68 per year.**

Conclusion

Although multiple vendors were engaged for this deployment, Ascom has the portfolio and capabilities to deliver the entire solution independently—from continuous monitoring to clinical alerting and workflow integration.

Interested in learning more about how Ascom can support your organization and help optimise patient care?

Contact us here.

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About Ascom

Our vision is a world where the right information moves people forward. Our mission is to put the right information in the right hands at the right time so that people can make the best possible decisions.

We are a global provider of communication and collaboration solutions for the acute care, long-term care and enterprise sectors. Our solutions are based on intelligent integrations with software and hardware that are open source and compatible with third party solutions. Every single second, our systems generate large amounts of data, which we then turn into useful and actionable information. This helps us to bring data to life for people in the toughest operational environments, ensuring smooth, complete, and efficient workflows.

Ascom is headquartered in Baar (Switzerland), has operating businesses in 19 countries and employs around 1,400 people worldwide. Ascom registered shares (ASCN) are listed on the SIX Swiss Exchange in Zurich.