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23

LARGE-SCALE IMPLEMENTATION OF AN EARLY WARNING SYSTEM IN GENERAL WARDS ACROSS A HOSPITAL GROUP

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BACKGROUND

- 20 hospitals (16 SA, 4 other African countries)
- Hospital scorecard data indicated **increased number of resuscitations** in general wards, indicating **missed opportunities** for recognition of deterioration
- **Standardised, evidence-based response** to patient deterioration
- Promoting consistent high-quality care to **improve patient outcomes**

AIM

To **embed sustainable practices** that ensure **early recognition** and appropriate response to deteriorating patients

OBJECTIVES

- Co-creating an **evidence-based, colour-coded vital signs** chart incorporating early warning signs (EWS)
- Implement across facilities to monitor & evaluate **reliability and impact** on in-hospital cardiac arrest
- Embed sustainable, high-quality care practices to improve patient outcomes

MATERIALS & METHODS

A collaborative, inclusive, iterative and participative approach was used across all three phases of the study:

PHASE 1 CO-CREATION OF EWS VITAL SIGNS CHART (AUG–OCT 2023)

- 4 hospitals co-developed EWS chart
- 18 refinements based on frontline feedback
- Included trigger thresholds + activation table
- Lead physicians collaborated to ensure clinical alignment

TEAM-RELATED FACTORS

included **poor handover practices, unclear communication channels, language barriers,** and a **lack of timely response from senior nurses** when abnormalities were reported. Additionally, some registered nurses **failed to act on reported concerns,** contributing to delays in care.

PROCESS INEFFICIENCIES

became evident in **incomplete or illegible documentation, failure to report abnormal findings,** and **neglecting to repeat vital signs** as outlined in the **escalation protocol** or activation table.

EQUIPMENT-RELATED ISSUES

involved the **unavailability of essential attachments**, such as appropriately sized blood pressure cuffs, **limited access to equipment** in isolation areas, and **delays in receiving repaired equipment**—particularly in rural settings.

PHASE 2 IMPLEMENTATION (NOV 2023–MAR 2024)

- Rolled out to additional wards (11 wards in 6 hospitals)
- Process supported by daily training and feedback loops
- Diagnostic tools used to address team, process and equipment barriers
  - Fishbone diagrams
  - Plan-Do-Study-Act (PDSA) cycles
- Key interventions:
  - Mobile reminders for repeating vital signs measurements
  - Senior nurse sign-off for escalations

In response to the identified challenges, unit managers were encouraged to generate and implement change ideas aimed at improving the **reliable escalation of abnormal vital signs** within their units.

PHASE 3 GROUP-WIDE ROLLOUT (MAY–AUG 2024)

- Extended to 37 wards in 11 hospitals
- Embedded into routine clinical workflows
- Ongoing data collection & physician engagement
- Reliable reporting of abnormal vital signs, escalation to higher level of care & number of resuscitations

RESULTS

PHASE 2

- Resuscitations decrease from 11 to 2
- Improved reliable reporting, reassessment & action to abnormal vital signs

PHASE 3

- 47% reduction in resuscitations (21 → 11)
- Increased nurse confidence & early escalation

TABLE 1. NUMBER OF RESUSCITATIONS IN PARTICIPATING WARDS

Hospital	Resuscitations during the 6 months prior to Phase 2 (Pre-implementation)	Resuscitations during the 5 months of Phase 2 (Implementation)
Hospital 1	3	1
Hospital 2	2	0
Hospital 3	3	1
Hospital 4	0	0
Hospital 5	1	0
Hospital 6	2	0
TOTAL	**11**	**2**

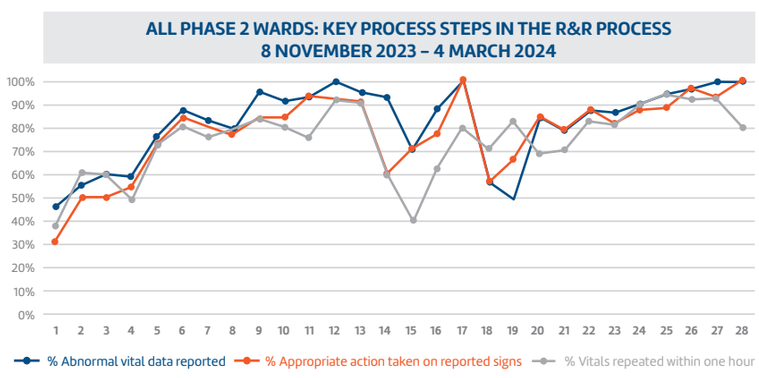

Fig. 1 Phase 2 Process data

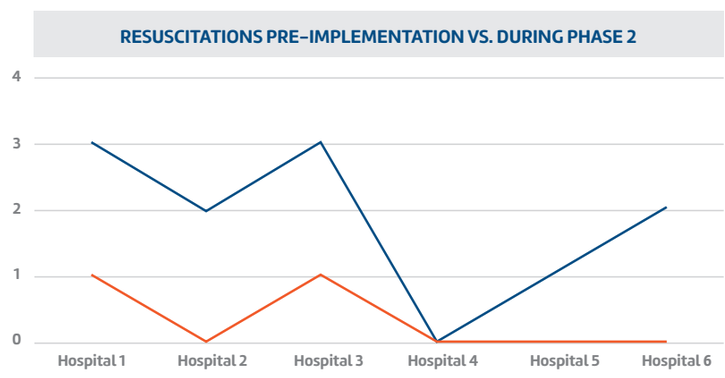

Fig. 2 Number of resuscitations pre-implementation vs. during Phase 2

CONCLUSION

- Standardised, colour-coded EWS chart improved reliable reporting and response to deterioration
- Significant reduction in resuscitation events in general wards and improved patient outcomes
- Unit Managers' leadership was pivotal in implementing changes
- Significant shift toward proactive, safety-conscious culture

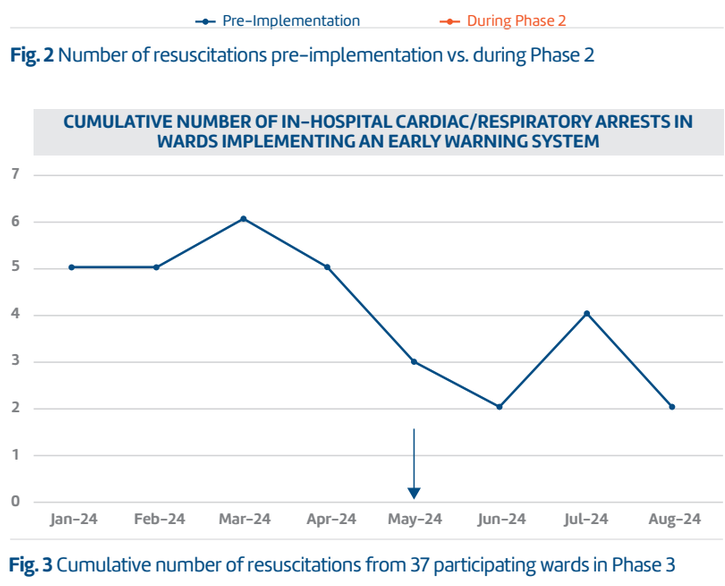

Fig. 3 Cumulative number of resuscitations from 37 participating wards in Phase 3

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