

RECOGNIZING MATERNAL EARLY OBSTETRIC WARNING SIGNS TO DETECT DETERIORATION IN THE MOTHER BABY UNIT

Mayura Kandasamy, RN, BScN, M.Sc; Neda Etemadi, RN, BScN, MN; Eta Nkwawir, RN, MN; Charriss Mae Memita, RN, BScN; Zahra Sheraly, MBA, PMP, LSSGB, Prosci CMP; Lorelei Roque-Reyes, RN, BScN, PMP

DESCRIPTION

Early Warning Scores (EWS) are essential tools that enable timely recognition of clinical deterioration, prompt response, and effective care escalation within the Mother Baby Unit (MBU). Prior to this initiative, MBU nurses manually transcribed patients' vital signs (VS) from Welch Allyn monitors into the Meditech, creating potential delays and transcription errors. This project automated VS documentation by integrating monitors directly with Meditech, enabling seamless vital sign documentation for both mothers and newborns. In addition, the implementation of the Modified Early Obstetric Warning Score (MEOWS) and Newborn Early Warning Score (NEWBORN EWS) further enhanced early detection of clinical changes. The Command Centre Perinatal Tile serves as a safety net, enabling proactive monitoring and timely clinical intervention.

OBJECTIVE

To reduce potential patient harm in MBU by implementing EWS systems for mothers and newborns to detect clinical deterioration and promote timely clinical intervention for patient safety.

ACTIONS TAKEN

A focus group was created and formulated a driver diagram to help identify change ideas. The proposed solution helped reduce patient harm for both mother and baby and provided real-time Maternal Early Obstetrics Warning Scores (MEOWS) and Newborn Early Warning Signs (NB EWS) by:

- Streamlining and supporting timely documentation
- Identifying deterioration through physiological trends
- Triggering early intervention to reduce morbidity and mortality
- Improving multidisciplinary communication prompting escalation and management
- Standardizing care and coordinating response to deteriorating patients

Maternal Early Obstetric Warning Scoring System (MEOWS)

Humber River Hospital Proposed Clinical Responses

Aggregate Score	Clinical Response
0	Continue routine monitoring as per Standard of Care
1-3	Q1H VS/documentation, routine MRP review, and/or escalation as required.
4-5	Q30Min. VS/documentation, MRP notification, notify RP/TL, and escalation as required (consider notifying RT- check O ₂ saturation and titrate oxygen as appropriate). Think Sepsis!
6 or greater OR 3 within a single parameter	Continuous monitoring (every 5 to 15 minute documentation required), MRP & Anesthesia notification, notify RP/TL, and escalation as required (consider notifying RT- check O ₂ saturation and titrate oxygen as appropriate). Consider transfer of care to Birthing Unit or ICU. Think Sepsis!

Figure 1. Maternal Parameter

Physiological Parameters for Newborn Surveillance

(0, Parameter Removed)

Level 1 (normal)	Low Range	High Range
Temperature	36.5	37.5
Pulse	110	160
Respirations	30	60
Oxygen Saturation	Greater than or equal to 95%	
Presence of Grunting	No	
Level 2	Low Range	High Range
Temperature	36-36.4	37.6-38
Pulse	80-109	161-180
Respirations		61-80
Oxygen Saturation	91%	94%
Presence of Grunting		Yes
Level 3	Low Range	High Range
Temperature	Less than 36	Greater than 38
Pulse	Less than 80	Greater than 180
Respirations	Less than 30	Greater than 80
Oxygen Saturation	Less than or equal to 90%	
Presence of Grunting		Yes (after 1 hour of life)

Figure 2. Newborn Parameter

Volume of Codes Over Time

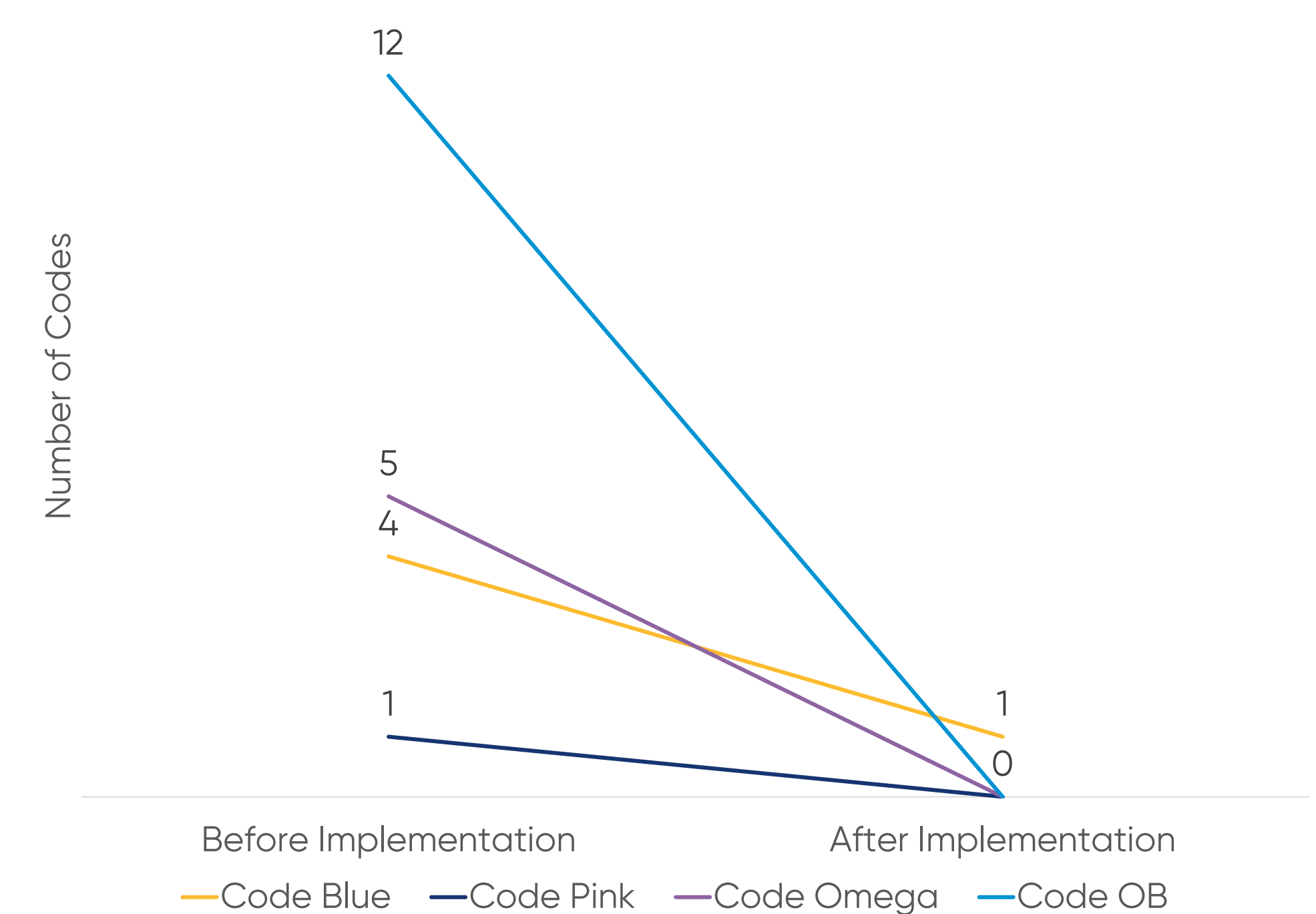


Figure 3. September 2023 to January 2024 (Before) and February 2024 to July 2025 (After). After implementation, monitor based scoring and submission was automated for scoring and EWS documentation with MEOWS at 90% and Newborn at 95% compared to manual before implementation

SUMMARY OF RESULTS

The monitoring of trends ensures that mothers and newborns with subtle changes in their wellbeing are flagged, thereby reducing any systemic biases against specific populations, especially for those without prenatal care. Staff were engaged in evaluating tools, equipment and supports required in performing the assessments, and provided feedback on visual interface for the VS monitors, enhancing usability and effectiveness.

LESSONS LEARNED

Timely communication, centralized documentation, and a clear statement of work are essential to improve collaboration, efficiency, and coordination among teams and vendors.

