IMPLEMENTATION OF A NURSE EARLY WARNING SYSTEM (NEWS)

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OBJECTIVES

- Define the Nurse Early Warning System (NEWS)
- Describe how implementation of NEWS can prevent avoidable patient decline in condition

BROOKWOOD MEDICAL CENTER

- Tenet Facility
- Birmingham, AL
- Urban setting
- 644 Licensed Beds
- 26,000 IP Visits
- 112,000 OP Visits
- 60000 ED Visits

WHAT IS NEWS?

NEWS is a tool that employs an algorithm that uses a physiological scoring system that either prompts a call to RRS or triggers additional assessment.

- NEWS score categorizes a patient's condition into 3 groups, each with a specific nursing response based on the score
- scoring system was combined with vital sign monitoring
- The score is then stratified by one of three categories represented by green, blue or red
- corresponding color marker was then placed on the patients' door to signify the NEWS score to other caregivers

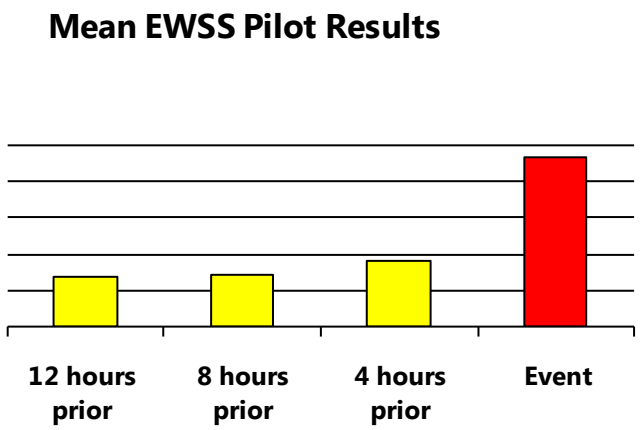
WHY NEWS?

- earlier RRS activation results in better outcomes
- Lack of putting subtle patient indicators together
- low self-confidence in assessment skills
- Infrequency of rounding

The Pilot

- High volume med-surg pulmonary and ID unit
- Concurrent data capture across all shifts over 30 days
- Original MEWS Adult Algorithm from published work/IHI
- Retrospective review of randomly selected RRT calls as baseline

PILOT RESULTS



- 100% of all patients had a detectable decline at least 12 hours prior to a RRT event
- The number of patients with detectable decline *doubled* at 4 hours prior to RRT event
- Demonstrated opportunity with signs caught earlier

PILOT SUMMARY

- Nurses not compliant with scoring every four hours (<70%)
- Nurses did not consistently escalate to supervisors per algorithm (*but* did raise awareness for seeking additional orders)
- No *orange* scoring levels identified: those 2-3 changed within 4 hours to full RRS activation with a mean score of 9: (we needed to change sensitivity and some triggers to increase capture of patient conditions)
- Identified OSA management as a major influence in post ops not directly listed as a trigger; (OSA on scoring matrix allowed nurse to have a heightened index of suspicion for potential complications)

MODIFICATION AFTER PILOT

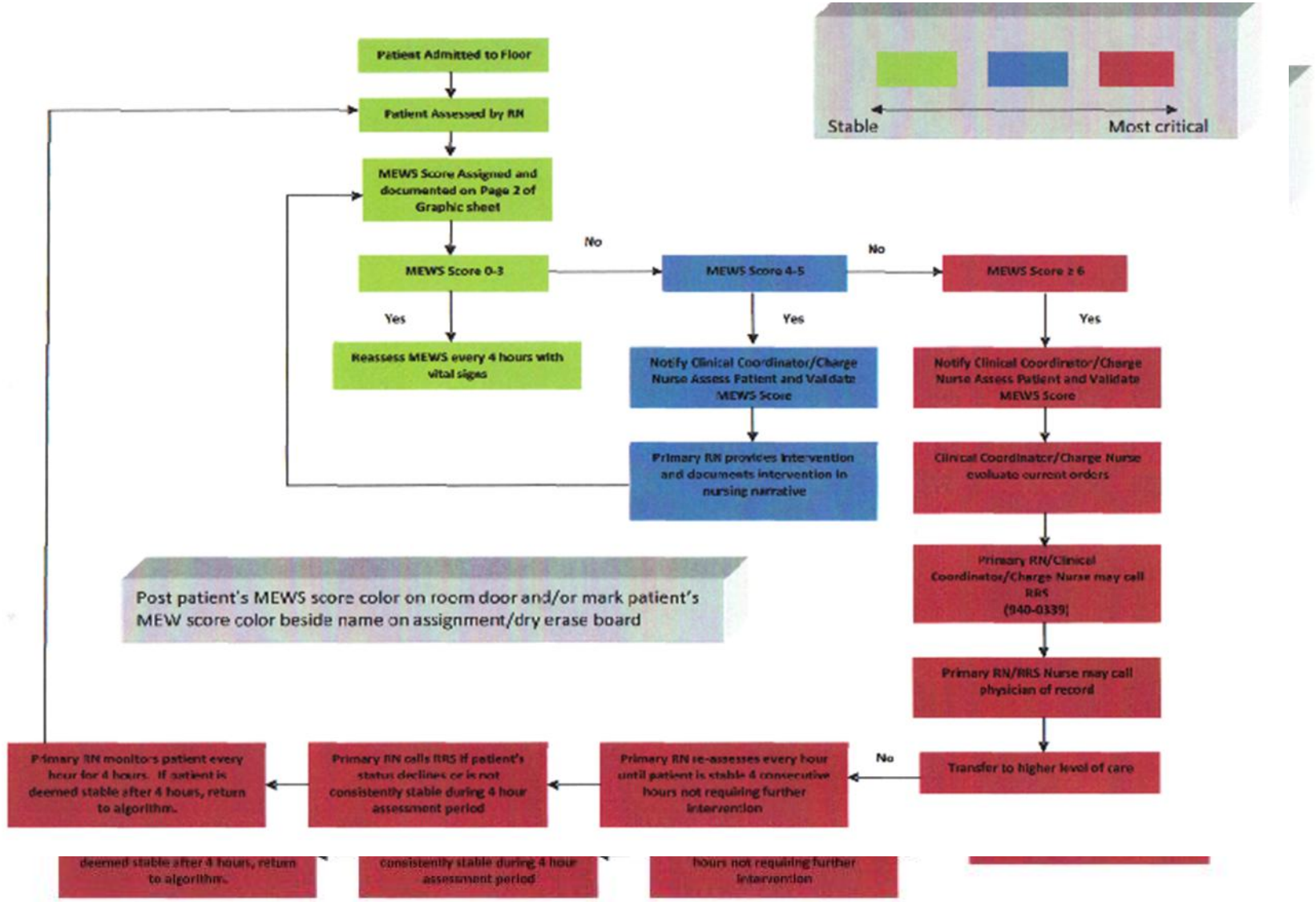
- Algorithm Modifications Development
  - Adult only
  - Modifications:
    - Baseline pilot data supported lower threshold for certain triggers
    - Removed fourth level and recalibrated score ranges based on pilot data (for greater sensitivity/increased capture)
    - Added NEWS score to patient care conferences (daily multidisciplinary huddles), shift reports and handoffs
    - Removed sepsis-specific screen because this is completed on all pts during patient care conferencing/admit
    - Added OSA as a trigger
    - Added to vital sign documentation for hardwiring use

THE TOOL

	3	2	1	0	1	2	3
Airway	100% NRB or OSA documented						
Temp (In F)	<95.0 F	95.1-96.0	96.1-96.4	96.5-100.4	100.6-101.3	>101.5	
HR Beats/min	<40	40-50	51-59	60-100	101-110	111-129	>130
RR breaths/min	<6	<8	9-15	16-20	18-20	21-29	>30
Oxygen Sat	≤85%	86-92%	93-97%	98-100%			
Systolic BP	<70	71-80	81-100	101-199		>200	
LOC	Unresponsive	Reponds to painful stimuli only	Responds to verbal stimuli	Alert			
Urine Output	<10 ml/hr	<35 ml/hr					

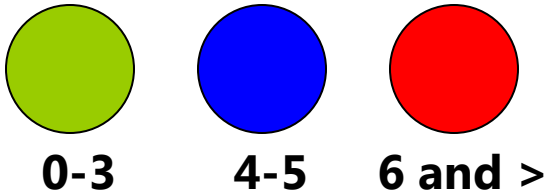
High score 24

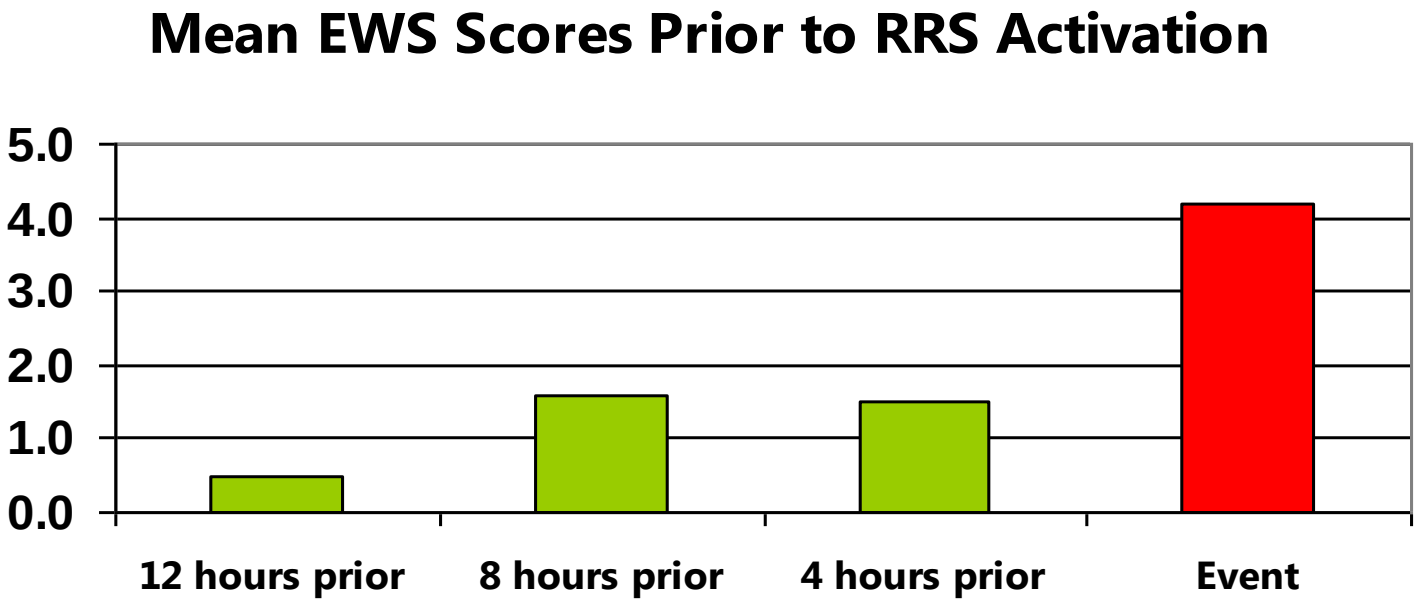
THE ALGORITHM



THE "NEW" NEWS TOOL

Post Modification

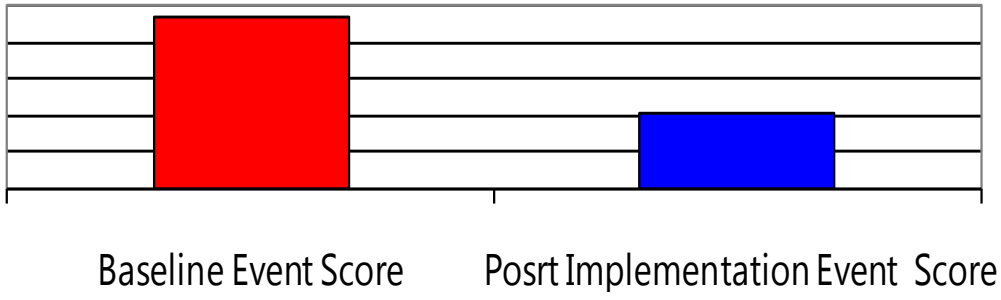




Note: sample of selected RRT calls, no other change in methodology)

RESULTS

EWS Mean Scores
Baseline Comparison to Post Implementation

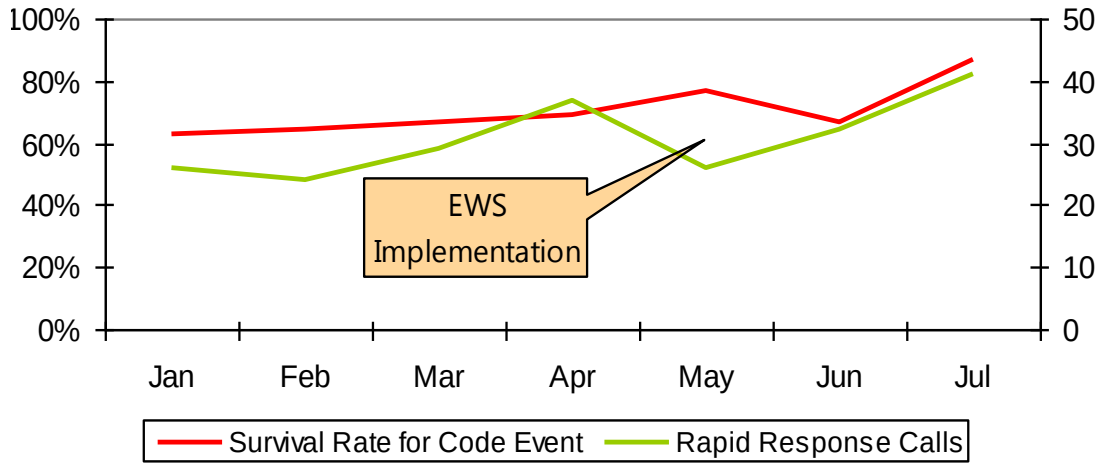


- Earlier calls to RRT prevents patient deterioration
- Earlier prompts for RRT are correlated to greater code survival rates

- Patient acuity is lower at time of RRT call because "warning" signs of impending complications are caught earlier

(event scores cut by >50%; 9.4 decreased to 4.2)

Code Survival Increases with RRT Calls



Summary of Modified Pilot Findings

- Three levels of action improved tool sensitivity (⇧ capture of declining conditions earlier than pilot)
- Earlier escalation resulted in lower mean scores to trigger the supervisor and/or RRS activation
- Scores conducted every 4 hours with standard vital signs indicated >90% compliance with scoring (20% improvement from pilot)
- Potential adverse outcomes or increased patient acuity avoided (as indicated by mean score comparison)
- Allowed tailoring unit-specific EWS educational plans for housewide implementation (data identified fluctuations in scores relative to timing of day and care plan activities of patients)

QUESTIONS?