**National Early Warning Scores (NEWS): A Quality Improvement Project**

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### Background
- Patients suffering from a cardiac and/or respiratory arrest usually exhibit physiological deviations, such as changes in vital signs and/or mental status, at least eight hours prior to their need for more intensive care.
- National Early Warning Scores (NEWS) is an EWS prediction tool. Six simple physiological parameters form the basis of the scoring system: respiratory rate, oxygen saturation, temperature, systolic blood pressure, heart rate, and level of consciousness.
- An initial pilot study was conducted in 2014 at the project site in one medical/surgical unit over one month to evaluate the effectiveness of the NEWS and 40-patients were identified who meet NEWS alert criteria.

### Purpose
Early identification of clinical deterioration in patients, so that nurses and providers could initiate an immediate intervention(s) ensuring appropriate use of RRT and/or Code Blue activations and preventing further clinical decline.

### Scoring Criteria
- **Score**
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  - 12
  - 13
  - 14
  - 15
  - 16
  - 17
  - 18
  - 19
  - 20
- **Time**
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  - 12
  - 13
  - 14
  - 15
  - 16
  - 17
  - 18
  - 19
  - 20
- **Non-NEWS**
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  - 12
  - 13
  - 14
  - 15
  - 16
  - 17
  - 18
  - 19
  - 20

### Results
- **Number of patients with a NEWS alert and transferred to a higher level of care compared to those with similar scores who remained on the unit:**
  - Total Sample Size (N) = 3, 154 (Anticipated # of V/S = 113,536)
  - Patients met complete NEWS Criteria (n) = 2, 667 (Complete NEWS V/S = 102,476)
  - 122 patients received a score of 5-6 or 3 in any single parameter
  - 74 patients received an intervention(s)
  - 63 remained in the unit after an intervention
  - 11 patients transferred to a higher level of care
    - 16 patients received a score of 7 or greater
    - 11 patients transferred to a higher level of care
    - 5 patients remained in the unit
    - 3 patients had unchanged NEWS due to their disease condition
    - 2 patients placed on comfort/palliative care

### Discussion
- **NEWS** is not a substitute for nursing clinical judgment, rather it provides an alert system when NEWS values are high.
- NEWS scores indicated that patients were appropriately admitted to medical/surgical units.
- Findings demonstrated that missed interventions related to NEWS alert criteria typically occurred at 0200.
- Timely documentation and acceptance by the provider of a nursing NEWS alert notification was a problem and an area for improvement.
- A long delay between the initial 2014 pilot study in one unit and this replication and expansion study may have been responsible for some doubt by nurses to the effectiveness of NEWS.
- The use of paper NEWS documentation and electronic entry of vital signs created duplicate entries of vital signs.

### Limitations
- Patients with incomplete 24-hour data sets were excluded.
- NEWS tool not available in EHR at the time of the study.
- Provider’s education about NEWS tool and their role was not constant.
- Compliance of nursing in the use of NEWS was not 100% consistent due to lack of motivation.

### Conclusion
- NEWS assists nurses in identifying clinical deterioration that results in improved outcomes.
- Scores are readily available for nurses and providers to promote initiation of intervention.
- Age and Race showed a statistical significance in NEWS alert scores.
- NEWS provides a realistic tool for clinical decision making because the score includes a single physiologic measures of extreme value in addition to aggregate scores that activate intervention.
- Value in using PDSA Framework – allows real time feedback.

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