Title:
Developing Modified Early Warning System Scores From the 2010 National Hospital Ambulatory Medical Care Survey

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Session Title:
Tools in Health Promotion
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K 02: Tuesday, 31 October 2017: 9:00 AM-9:45 AM
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9:00 AM

Keywords:
acute care, emergency department and modified early warning systems

References:


Abstract Summary:
Use of technology in the healthcare setting has been met with varying sentiments from both practitioners and patients alike. With several acute care hospitals transitioning to electronic health records, patient monitoring systems have also become more convoluted. The Modified Early Warning System is an example, but what is the evidence?

Learning Activity:

<table>
<thead>
<tr>
<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
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</thead>
<tbody>
<tr>
<td>The learner will be able to explain what a MEWS score is</td>
<td>a discussion of the various types of early warming systems will be provided, including the differentiates them and the decision making process involved in choosing one that is appropriate for a particular patient population.</td>
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<tr>
<td>The learner will be able to list the components of a MEWS score</td>
<td>various MEWS use differing components to calculate the MEWS score. these components will be discussed in depth and what parameters best fit the patient population.</td>
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<tr>
<td>The learner will be able to calculate a MEWS Score from a set of Vital signs</td>
<td>MEWS score differ depending on the vital signs presented, providing a consistent means of calculating these scores is imperative in increasing the reliability of the tool.</td>
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<tr>
<td>The learner will be able to differentiate the parameters for the different scoring systems</td>
<td>every vital sign has various parameters that can be assigned to come up with the score. determining what these parameters should be requires looking to the evidence of what is considered &quot;critical&quot; and clinicians have to make these decisions based on patient populations and acuity.</td>
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Abstract Text:

**Background:** Changes in patient vital signs may begin occurring as early as 8 – 12 hours prior to a cardiac arrest event. Clinicians have developed a variety of early warning systems (EWS) to alert nurses about physiological changes in patients. There is limited understanding about use of EWS in emergency departments (EDs). It is unknown if certain parameters could help predict outcomes and guide care on a large scale. The 2010 National Hospital Ambulatory Medical Care Survey (NHAMCS) is a large database containing data about patient visits to emergency departments (EDs). It was unknown if this data could be used to predict hospital admissions from EDs.
Aims: The purpose of this study was to determine if a Modified Early Warning System Score (MEWS) could be created for each patient in the NHAMCS dataset using vital signs recorded at admission and if the MEWS would predict inpatient admissions.

Methods: A literature search produced the body of knowledge to create and test a MEWS on a sample of 34,936 adults from the 2010 NHAMCS. Multiple logistic regression analysis was performed, controlling for demographic variables.

Results: For every one-unit increase in MEWS, patients were 33% more likely to be admitted to the hospital. Females had lower risk of admission (19% less likely), whereas older adults were more likely to experience admissions. There was a 90% chance of inpatient admission with a MEWS of 13.

Conclusion: MEWS can be an early predictor of the need for hospitalization, potentially lowering risk for patients by early identification of the need for additional monitoring and care. Recommendations for practice include the adoption a MEWS in triage to establish a baseline score to follow the patient throughout the hospital stay. Educational implications include providing education to ED nurses on MEWS and how it can be utilized in the ED to detect declining patient status. Policy implications include considering MEWS as a nurse-driven protocol to enhance patient safety across the patient’s stay. Further research is needed about the prevalence of MEWS use in EDs in the United States and the relationship between MEWS and nursing triage scores.