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Implementation of an Evidence-Based Guideline to Improve Vital Sign Assessment and Documentation in the Emergency Department

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Implementation of an Evidence-Based Guideline to Improve Vital Sign Assessment and Documentation in the Emergency Department (ED)

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BACKGROUND
- Vital signs (VS) have remained a priority in nursing documentation as they are used globally as an early warning sign of patient deterioration.
- Timely VS assessments positively influence outcomes by decreasing preventable admissions, length of stay (LOS) times, and mortality rates.
- Despite ongoing reports showing profound VS inconsistencies are related to poor patient outcomes, there is a lack of evidence-based standards for VS assessment and documentation frequencies across healthcare.

LOCAL PROBLEM
- The site for this evidence-based quality improvement (QI) project is a rural, 19-bed ED on the Eastern Shore of Maryland.
- Prior to implementation of the practice change, the site lacked a standardized process for VS assessment and documentation, leaving potential for negative outcomes.
- Project Purpose: To develop and implement an evidence-based VS assessment and documentation guideline based on patient acuity levels for the ED nurses.
- Project Aim: To increase VS assessment and documentation frequencies by 50% within 90 days of implementation.

METHODS
- Literature search and critical appraisals demonstrated good and consistent evidence supporting implementation of a VS guideline using a multi-disciplinary approach with written educational interventions.
- The Model for Improvement was used as the process framework for this project.
- Plan-Do-Study-Act (PDSA) cycles were used to develop and implement the VS guideline.
- Process Measures: Number of VS documented in each patient chart based on their ESI level.
- Outcome Measures: Percentage of charts with the suggested VS recorded per guideline recommendations.
- Balancing Measures: Patient’s LOS in the ED.
- Retrospective chart reviews were completed for pre- and post- implementation data collection over 90-day periods (April – July) in 2022 and 2023.
- Descriptive statistics, parametric, and nonparametric tests were used for analysis.

METHODS
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RESULTS
- Documentation of heart rate (HR), blood pressure (BP), respiratory rate (RR), pulse oxygenation (SpO2), and pain levels improved by over 100%, exceeding the goal.
- VS documented within 60 mins of departure significantly increased by 88.8%.
- Temperature did not meet goal of 50%, but there was a 25.6% increase when comparing April to July post-data.
- The median LOS decreased by 36.2%.

CONCLUSIONS
- A VS guideline delineating VS assessment and reassessment frequencies based on acuity level was developed and implemented for the ED nursing staff.
- Education sessions and printed handouts, including a VS "badge buddy" and the full-text version of the guideline, were provided to the nurses and stakeholders.
- Laminated copies of the VS guideline were placed on computers and portable VS machines around the department.
- Although temperature documentation did not meet the goal, the improvement is still clinically relevant to QI methods.
- Further research is recommended for manual temperature documentation.
- The continuous improvement of each VS parameter is promising for on-going sustainability. The project site will continue to perform annual education reminder at skills fairs.
- The guideline and educational interventions are easily reproducible and adaptable for numerous healthcare settings.

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ED nursing VS documentation compliance significantly increased after implementation of a VS guideline.