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Improving EMR Usability: Critical Elements When Designing Perioperative Emergencies Template

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Abstract. Perianesthesia nursing care involves monitoring of unexpected outcomes before and after surgical and anesthetic procedures. When adverse events occur, reviewing patient data is critical to provide appropriate intervention. Current EMR software systems are limited in structure and are not cohesive in recording adverse events. Users tend to develop workarounds when systems fail to capture workflow. Analysis of adverse incident is incomplete because data entered is not retrievable. Narrative data, while sometimes necessary, cannot easily be analyzed or linked to the structured portion of the record. Designing templates to capture essential data during emergency situations improves usability and compliance. The presentation of information in terms of layout and structure is important because it can influence data retrieval, interpretation and clinical decision making in fundamental ways.

Keywords. usability, design, elements, perioperative emergencies, documentation

1. Introduction

Adverse events occur in preoperative, intraoperative and postanesthesia care units (PACU). Some examples of these conditions are acute myocardial discomfort, airway obstruction, breathing dysfunction and hemodynamic instability. Resuscitations are often chaotic and stressful with decisions needing to be made quickly [1]. Accuracy in documentation is crucial in order to provide timely intervention and for analysis and review. Current clinical documentation software systems are limited in design. Users enter data in multiple areas for their assessment and interventions which is time consuming and cumbersome.

When EMR systems fail to capture specialty practice workflow, users tend to develop workarounds i.e., free text entry. A 2014 Black Book EHR Loyalty survey reported "89% of nurses developed creative workarounds to deal with shortcomings and system deficiencies" [2].

Designing templates to capture essential data in perioperative emergency situations improves usability and promotes compliance. Cues serve as reminders and prompt

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users on how to proceed and complete documentation requirements in a stressful environment.

2. Methods

A pre-implementation survey was used to gather data on users concerns on current design of clinical documentation system. Staff expressed concerns they had to visit multiple screens to enter patient's initial and ongoing assessment and intervention. A perioperative adverse event template was designed, created and pilot tested. Post-implementation feedback from users is encouraged for ongoing systems improvement.

3. Results

Survey results indicated that the template met the following criteria (a) Cohesiveness-patient data is captured and viewed in one screen, (b) Comprehensive-captures all the essential details when managing crisis events, (c) Convenient-prompts users to enter essential information, (d) Accessibility-data can be viewed by all departments and services, (e) Reportable- data elements are standardized and are retrieval for audit reports.

4. Discussion

When adverse events occur in the perioperative setting and provision of intervention is critical. Clinical data should be accessible and reflective of patient's condition. Efficiency in entering data should be taken into consideration. Templates for electronic documentation should be designed to capture departmental workflow improving usability and compliance.

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