ORIGINAL ARTICLE

Compliance is Contagious: Using Informatics Methods to Measure the Spread of a Documentation Standard From a Preoperative Clinic

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Purpose: *Preoperative documentation is essential to coordinated care and has the potential for standardization, which may facilitate downstream clinical management.*
Design: *An observational pre/post standardization design was used.*
Methods: *We analyzed the implementation of a preoperative documentation standardization intervention in Vanderbilt's Preoperative Evaluation Clinic (VPEC) and its impact outside VPEC. A phased intervention consisted of clinician education with monthly feedback, followed by the development of a compliance dashboard and inclusion in Ongoing Professional Performance Evaluation system by VPEC. A follow-up survey was administered to measure the impact on clinical management.*
Findings: *Adherence to standardization was improved with the addition of electronic feedback. Implementation of this system in the preoperative clinic had significant impact outside VPEC. Trainee status was a significant predictor of adoption of the standardized format.*
Conclusions: *Adoption of a preoperative documentation standard in a clinic had a positive impact on standardization practices in a perioperative system.*

Keywords: *standardization, history of present illness, preoperative evaluation, informatics.*
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THE PERIOPERATIVE SURGICAL HOME (PSH) has been proposed by the American Society of Anesthesiologists as a patient-centered team-based system of coordinated care that directs the patient throughout the entire surgical experience.[1] It is a model that aims to correct the fragmentation and high cost of the current perioperative period by delivering continuous care throughout the surgical process. One of the core tenets of the PSH is standardization through objective data.[2]

Objective data must be adequately collected and managed if to be used as a tool for quality appraisal. However, there are often barriers to data collection from the electronic health record such as accuracy and accessibility. Although data collection is a fundamental goal of the PSH, many institutions do not have the necessary informatics infrastructure.[3] Creation of high-quality performance metrics may be used to overcome these barriers and promote the mission of the PSH.

Problem Identification

A logical place to start implementing a clinical standard is in preoperative evaluation documentation. One of the key elements of a preoperative evaluation is the history of present illness (HPI). Clinicians can use the HPI to summarize patient's preoperative condition, by noting patient comorbidities, indication for surgery, and type of surgery planned. These details are the strongest predictors of perioperative complications, and thus visibility of this information in a preoperative evaluation is critical.[4] At our institution, HPI notes are entered into free-text fields. These notes had significant variability in how they were used, with overall length varying from several words to a paragraph, which made it difficult to consistently identify important patient comorbidities and the indication for surgery. An HPI format was developed and implemented to structure and standardize the information presented in this field. The purpose of this project was to quantify the effects of a preoperative documentation standardization intervention on clinician documentation.

Intervention

Project, Design, and Setting

This quality project was exempt from the review by institutional review board as it was determined a quality improvement project. Adherence rates were analyzed before and after a multiphase documentation intervention at Vanderbilt's Preoperative Evaluation Clinic (VPEC) from January 2012 to June 2015. VPEC was staffed by 13 nurse practitioners and four registered nurses during the project period. All preoperative evaluations created during this period were included in the analysis.

Standardization

A preoperative documentation standard (Supplementary Appendix 1) was developed by the VPEC Medical Director (JPW) who specified the following HPI format:

> [Age] yo [Gender] [Summary of PMH] presents with [Procedural Indication] for [Procedure]. [Additional Important Information.]

An example of the preoperative documentation standard is as follows, "56 yo M PMH HTN, HL presents with thyroid adenocarcinoma for thyroidectomy." At the beginning of phase 1, the preoperative documentation standard was presented to the VPEC clinicians in a didactic session and distributed via hard copy and e-mail. The clinicians of VPEC, comprising nurse practitioners and registered nurses, were instructed to immediately adopt the new structure into their preoperative documentation. During this initial phase, monthly feedback on adherence was sent via e-mail by the VPEC Medical Director, with examples provided of HPI assessments that did, and did not, adhere to the standard. For phase 2, an Ongoing Professional Performance Evaluation (OPPE) dashboard was created with Tableau 8.2 (Tableau Software, Seattle, WA) that automatically tracked individual clinician adherence (Figure 1). VPEC managers were given access to the dashboard, allowing for monitoring of adherence rates. In addition, this new OPPE metric was incorporated into quarterly performance evaluations of VPEC clinicians. All VPEC clinicians entered at least 400 evaluations per year, and all were included in the OPPE. Clinicians outside VPEC (non-VPEC) were not subject to performance evaluations and did not have access to the OPPE dashboard. This outside group comprises residents, attending physicians, student registered nurse anesthetists (SRNAs), and certified registered nurse anesthetists (CRNAs).

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