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Preoperative EMR Containing Smart-Set Reminders Improve Accuracy of Documentation by Nonanesthesia Clinicians During Preoperative Assessments

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Background: The preoperative assessment clinic in the Department of Anesthesia at Wake Forest University developed an electronic medical record (EMR) capable of generating preoperative assessments, patient education, and medication reconciliations that also allows for data collection and data sharing with the intraoperative anesthesia record. This clinical application incorporates fields for the collection of preoperative National Surgery Quality Improvement Program (NSQIP) variables, Joint Commission (JC) nursing assessments, medication reconciliation, and "smart-set" reminders for clinicians' physical assessments. The application contains clinical reminders that define evidence-based "Best Practices" and American Society of Anesthesiologists (ASA) physical status classifications. These components provide teaching tools for nonanesthesia-trained clinicians (nurse practitioners, physician assistants). The incorporation of clinical smart-set reminders ensures that nonanesthesia-trained clinicians remain consistent with evidence-based preoperative medical management guidelines. Further, the creation of patient-specific preoperative medication instructions appropriate for the anticipated anesthetic and procedure facilitates patient compliance with recommendations. Lastly, the incorporation of height, weight, and calculated body mass index categorizing the patient as "overweight, obese, morbidly obese, or super morbidly obese" alerts the operating room staff to the need for specialized equipment prior to the day of surgery.

Results: Once implemented (October 2009), our preoperative EMR improved the accuracy of NSQIP data collection and ASA physical status coding, as well as compliance with preoperative clinical best practices. Better collection of preoperative NSQIP variables changed institutional patient severity scores which, in turn, impacted "expected" surgical outcomes. This resulted in an overall improvement in comparison with other NSQIP participating institutions (improved "O/E" ratio). Further, smart-set reminders containing ASA class definitions facilitated consistent physical status coding, which resulted in improved coding and billing. Lastly, improved compliance was observed with Surgical Care Improvement Project measures such as continuation of perioperative beta-blocker therapy and medical management of comorbid disease states. Inclusion of smart-set reminders to "always take beta-blockers, statins, and aspirin" on the day of surgery improved compliance with such measures.

Conclusion: The EMR, created specifically for the preoperative assessment clinic at Wake Forest University, with the inclusion of smart-set reminders, improved quality improvement data collection, coding ASA classification, and compliance with perioperative best practices.