The Impact of Real-Time Clinical Alerts on the Compliance of Anesthesia Documentation: A Retrospective Observational Study

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Introduction: Clinical alert systems have been used to analyze deviations from hospital standards in the electronic medical record to identify missing documentations and send alerts to the appropriate providers to increase adherence to required elements. To improve compliance, an alert system for documentation of the Immediate Preoperative Assessment was implemented at our institution in August 2018 with the goal of improving documentation compliance rates. We hypothesized that implementation of this alert system would increase the compliance of on-time documentation of the IPOA.

Methods: An initial data query in our institutional data warehouse was made for all patients who had a completed anesthetic during our study period. This date range corresponded to 6 months before and after August 2nd, 2018, the date when the IPOA alert was implemented and the anesthesiology department. The following analyses were performed: testing the proportion of cases compliant with on-time documentation of the IPOA pre- versus post-implementation for the full cohort and among subsets of interest, testing the time when the IPOA was completed relative to anesthesia end, and testing whether time of day of when surgery occurred had an impact on the time when the IPOA was completed relative to the drapes off/IPOA alert sent time. The proportion of compliance for pre- versus post-implementation was tested by Chi-square test.

Results: Through retrospective chart review of electronic patient records, 47,417 cases matched our inclusion criteria of patients that had a completed anesthetic between February 2nd, 2018 to February 2nd, 2019. In total, we excluded 5132 cases. The compliance rate of IPOA completion increased from 76% to 88% (P < 0.001) before and after the alert implementation date. In the initial month following alert implementation, the compliance rate immediately increased to 83% and stayed in the high 80's for the balance of the study period.

Conclusion: In summary, we demonstrate that automated Clinical Alert Systems operating via a single page notification can improve the compliance rate for documentation of key anesthesia events and that this observation is sustained six months after the implementation date. Furthermore, improvement in compliance is highest shorter cases and cases that occur early in the day. This study shows promising results in the use of automatic CAS system alerts to help hospitals meet TJC and CMS standards.