Impact of an Online Event Reporting System on Resident Complication Reporting in Plastic Surgery Training: Addressing the Practice-Based Learning and Improvement Core Competency

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Introduction: The Accreditation Council for Graduate Medical Education (ACGME) has identified practice-based learning and improvement (PBLI) as a core competency in resident education. PBLI involves systematically analyzing current practices and implementing changes with the goal of quality improvement. In surgical care, complication reporting is an essential component of PBLI as adverse events are analyzed in morbidity and mortality (M&M) conference for quality improvement. The purpose of this study is to develop and evaluate an intervention for complication reporting, and compare this to current practice, in a plastic surgery training program.

Methods and Materials: This is a pre- and post-intervention comparative effectiveness study evaluating resident reporting of complications and adverse patient events on a plastic surgery service in a teaching hospital. The pre-intervention and post-intervention cohorts consisted of all patients having surgery on the pediatric plastic surgery service during two separate 3-month blocks bridged by a transition period for intervention implementation. In the pre-intervention group, resident reporting of complications was consistent with current practices at our institution where the chief resident on service reports complications prior to bi-monthly M&M conferences. Division leadership, in conjunction with patient safety experts, then developed an online event reporting system (ERS) and implemented policy initiatives to facilitate resident utilization of ERS in all clinical settings. The post-intervention group included all residents on service utilizing the ERS for complication reporting at the time of the event and the ERS was synchronized to generate data for M&M conference. A trained surgical reviewer recorded all complications for patients throughout the six-month study period and this served as the reference standard. Fisher's exact test was used for binary comparisons.

Results: There were 32 complications detected in 219 patients from June-August, 2015 and 35 complications detected in 202 patients from October-December, 2015. Compared to this reference standard, the proportion of complications reported by residents for M&M conference in the pre-intervention group was 28.1% (9/32 events reported). After the intervention, the proportion of complications reported by residents increased to 91.4% (32/35 events reported) ($P < 0.05$).

Conclusions: An intervention utilizing an online event reporting system led to significant improvements in complication reporting by plastic surgery residents in an academic teaching hospital. Implementation of an event reporting system can enhance practice-based learning and quality improvement, addressing an ACGME core competency.