An Automated Case Cancellation Review System for Enhancing Systems-Based Practice in Anesthesia Residency Training

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Introduction: Cancelled surgical cases can negatively impact patient satisfaction, hospital resources, and surgical training. At Vanderbilt University Medical Center, the Vanderbilt Preoperative Evaluation Clinic (VPEC) provides evaluations and consultation services to surgical patients in an effort to ensure patient safety, prevent delays, and reduce cancellations. Despite this effort, cancellations still occur. We developed a system to support systems-based practice for anesthesiology residents through structured case cancellation review. This automated system informs VPEC residents of cases that were cancelled on the previous business day and provides a framework for performing reviews.

Methods: We created a SharePoint-based website that provides a view of a SQL Server database of case cancellations with access restricted to anesthesiology residents, VPEC staff and clinical leadership. An automated process runs each workday that identifies cases cancelled during the previous business day. These cases are added to the case cancellation database and an automated email with the cancellation list is sent to the resident scheduled in VPEC. This email contains a link that directs the resident to our case cancellation website. From there, the resident answers a list of questions pertaining to the cancelled case assessing the presence of proper documentation, the reason why the case was cancelled, who was responsible for the cancellation, and how it might have been prevented (Figure 1). The residents’ analyses are reviewed by the anesthesiologist assigned to VPEC. In addition, these data are used to populate a Tableau-based case cancellation dashboard that is available to our clinical leadership (Figure 2). This dashboard provides case cancellation trends over time as well as the granular detail on a per-case basis as provided by anesthesia residents.

Results and Conclusion: The result of this project is a comprehensive system for resident-led case cancellation review that allows for these cases to be easily reviewed with an anesthesiologist. This system has incorporated systems-based practice into the daily routine of our preoperative clinic. By linking the data input in the SharePoint site to a SQL Server database, we have created a system that builds a rich longitudinal data set for analysis, will drive continuous quality improvement projects and provides an executive-level dashboard of case cancellations.
Figure 1: View of case cancellation details.

Figure 2: View of case cancellation dashboard.