INTRODUCTION
Anesthesia Information Management Systems (AIMS) automate perioperative data recording and generate searchable databases that can be analyzed for quality assurance and clinical outcomes research. AIMS reduce time spent on record-keeping, thereby freeing the clinicians time for other tasks such as documenting significant clinical events. Implementation of a secure clinical event system linked to AIMS has been shown to double the capture of events; however, no evidence of AIMS alone improving event reporting exists. In order to assess the level of event reporting while using AIMS, we retrospectively evaluated the reporting of events during a recent clinical trial.

METHODS
At our institution, emesis during induction is a Quality Improvement (QI) event that the anesthesia provider should both note in the AIMS record and submit as a Continuous Quality Improvement (CQI) report. In a recent clinical trial, research assistants (RAs) evaluated fasting gastric volumes and the incidence of emesis for 1000 day-surgery patients. Following IRB approval, we analyzed the anesthesia records of 995 of these cases and determined whether emesis was documented in AIMS and whether a CQI report was filed. Given the original study’s parameters, emesis recorded by the RAs was a true indicator of the event and was used as the standard of comparison in order to determine the sensitivity, specificity, and positive predictive value (PPV) for both the AIMS record and CQI reports.

RESULTS
Of the 995 evaluated cases, RAs noted 8 episodes of emesis during induction. Three of these emetic events were recorded in AIMS, while only 1 CQI report was filed. After comparing the AIMS record to the RA data, AIMS yielded a sensitivity of 38% (95% confidence interval (CI), 8.5% - 75.5%), a specificity of 100% (95% CI, 99.6% - 100%) and a PPV of 100% (CI, 29.2% - 100%). Comparing the CQI reports to the RA data, the sensitivity of CQI reporting was 13% (95% CI, 0.3% - 52.7%), the specificity was 100% (95% CI, 99.6% - 100%) and PPV was 100% (CI, 2.5% - 100%).

DISCUSSION
AIMS serve as useful resources for clinical outcomes data, yet the low sensitivity of AIMS records suggests events dependent on user input (e.g. emesis during induction) may not be recorded reliably in the anesthesia record. CQI reports were even less sensitive to clinical events detection approximately one-third of AIMS sensitivity. These results indicate under-reporting of significant events and suggest user-dependent reports extracted from AIMS records may not be a reliable source for either realizing the occurrence of clinical events or conducting outcomes research.

REFERENCES