

[OS1-78] "Is electronic anesthesia charting too convenient?"

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### Background

Electronic medical records with automated vital sign capture are rapidly becoming the norm in anesthesia care. It has been previously reported that electronic records frequently have gaps in blood pressure data, which can lead to adverse legal events (1), while electronic reminders can improve provider performance (2). Situational awareness and vigilance developed and reinforced in providers during a paper charting era may be lost upon adoption of an EMR. The goal of this quality improvement study was to identify whether implementation of an EMR altered the incidence of lapses in awareness of the patient's vital signs.

### Methods

Prior to EMR implementation and while providers were still using manual paper charting, electronic vital sign capture was initiated in the background continuously for all anesthetic cases. For this study the electronic record of vital signs was reviewed from January to March 2013 prior to EMR go-live, and again from September to November 2013, four months after the adoption of the EMR.

The electronic record was reviewed for each case in the pre and post-EMR periods in a single operating room selected for cases lasting greater than 45 minutes, where providers would have the most opportunity for careful charting and patient assessment. Blood pressure was chosen as the vital sign surrogate for provider vigilance because initiation of NIBP monitoring and recognition of its interruption are more dependent upon provider awareness than other vital signs being captured in the EMR. Records with greater than 15 minutes of absent NIBP were counted as having a meaningful gap in NIBP documentation.

### Results

A total of 153 cases were reviewed. Two of 72 cases (2.8%) in the pre-EMR phase had interruption of NIBP measurements, and 9 of 81 cases (12.3%) in the post-EMR phase had interruptions.  $\chi^2$  of the proportions is  $p=0.039$ , two-tailed.

### Conclusion

There is a higher incidence of NIBP monitoring lapses after transitioning to automated charting. It appears that increased reliance on an automated system may result in a lack of recognition of missing data in the anesthetic record. This suggests that charting with an automated electronic anesthesia record, though more convenient than traditional paper charting methods, may in fact result in poorer monitoring and patient care. The results from this study suggest a need for a larger study to determine if embedded electronic alerts in EMR may help reduce NIBP monitoring lapses in anesthetic care.

### References:

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