Case Report

OPPE Metrics Improve Compliance To Intraoperative Handoff Procedures

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Abstract

Intraoperative handoffs are increasingly being implicated with patient morbidity and mortality.We present how the use of Ongoing Professional Practice Evaluation (OPPE) metrics improved compliance to an intraoperative handoff procedure. After handoff, anesthesiologists were instructed to input five items into an Anesthesia Information Management System (AIMS) and their compliance statistics were presented to them at quaterly intervals.Over one year, average faculty compliance increased from 53% to 87%, suggesting that OPPE metrics imbedded into AIMS's may encourage participation in intraoperative handoffs procedures.Combined with a rigorous handoff protocol, this practice may make a significant contribution to patient safety.

Introduction

In 2006, The Joint Commission's National Patient Safety Report stipulated that institutions must implement standardized handoff reports when transferring care of patients between health care providers. Intraoperative handoffs between anesthesia providers have been gaining attention[1,2] and recent literature suggests that the frequency of intraoperative handoffs is associated with increased patient morbidity and mortality[3,4]. While the current debate stands between attempting to minimize the number of handoffs versus making them safer[5], it is unlikely that intraoperative handoffs will disappear altogether.Subsequent research has therefore focused on the creation of effective intraoperative handoff protocols[6].However, even the most ideal protocol will be unsuccessful if the participants do not adhere to it.We present our department's approach to encourage and increase faculty anesthesiologists' compliance to performing a guided intraoperative handoff, using Ongoing Professional Practice Evaluation (OPPE) metrics, a possibly increasing patient safety.

Case Description

At MD Anderson Cancer Center, we perform up to 25 000 anesthetics per year.Because our cases are often complex and lengthy, approximately 10% of these cases involve one or more intraoperative handoffs.With the suspicion that properly conducted handoffs may improve patient care, in September, 2013, a faculty task force developed an intraoperative handoff checklist to be utilized by all anesthesia providers during shift changeovers (Table 1).This checklist was distributed to all anesthesia providers and promoted as a potential template to guide their intraoperative handoff discussions.For the purpose of tracking compliance to performing a handoff, the task force selected five items (separate from the checklist) that they felt reflected key content handoff items (i.e. allergies, post op disposition) and important handoff processes (e.g. handoff performed at the bedside, notifying the OR team of provider change) (Table1).

Brief Overview	Patient Data	Intraoperative Course
Patient Name	Allergies	Airway Difficulty?
Age	Relevant home/ hospital meds	Hemodynamic stability
Surgical Procedure	Comorbidities	Oxygenation
Stage	CNS/CVS/Resp/ GI/Renal/Heme/ Endo/Metabolic	Critical events
Estimated end time		Anesthetic
Anesthetic		Surgical
GA, TIVA, MAC		Pain management (narcotics, epidural, regional…)

Infusions		Antibiotic redose
Airway (ETT,DLT, LMA)		Lines
Position		Special Monitors (BIS, Litco, Vigileo…)
Paralysis		Fluids/EBL/Urine Output
		Transfusions/Blood products available
		Baseline and most recent labs
		Emergence plan
		Disposition

Table 1: Intraoperative Handoff Checklist.

These items were incorporated into our electronic anesthesia record (PICIS®) as typed entries required by the incoming anesthesiologist.Faculty were therefore asked to perform an intraoperative handoff, guided by the suggested intraoperative checklist (Table2), and then as part of their sign in and attestation routines, the incoming faculty was asked to address the five aforementioned items using free text entry.Any text entry in a box, for example "Yes" for Allergies Reviewed, was sufficient to meet the documentation requirement and therefore simply served as acknowledgement that an intraoperative handoff was completed, as long as all five boxes were filled.

Handoff Item	
Patient Identified at Bedside	
Medical Records Reviewed	
Allergies Reviewed	
Postop Plan-Disposition	
OR Team Notified of Provider Change	

Table 2: Five free text entry Handoff Items for compliance tracking.

The resulting metric (proportion of cases where all five items contained text entries/number of handoffs), was extracted from the PICIS database and presented to all 70 faculty anesthesiologists at quarterly intervals.In this document, personal statistics were also compared with those of the group as whole (Figure 1).
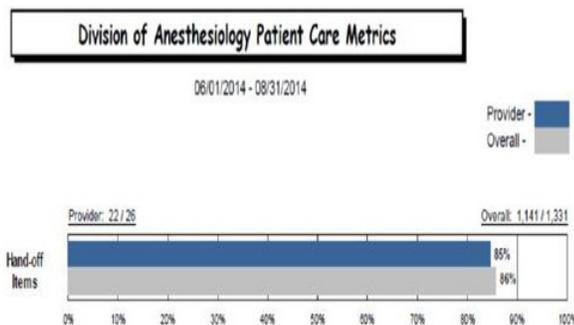

Figure 1: Metric of compliance statistics presented to faculty at quarterly intervals.

After one year, the entire database of faculty intraoperative handoff metrics was plotted on a p-chart, generated by Statit PPRTM(Figure 2).Averagefaculty compliance for completion of the five items, as measured by OPPE metrics, began at 53.25% after the first month of implementation and steadily increased to 87.39% for the latest month (p<0.001, Pearson Chi Square).
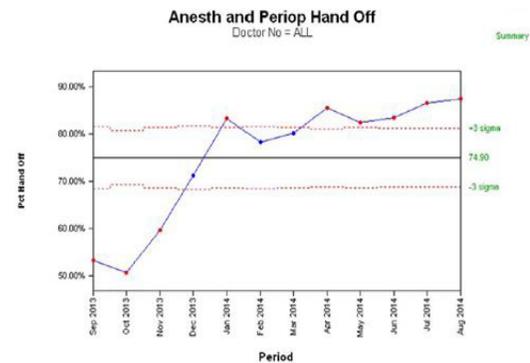

Figure 2: P-chart of entire faculty's average compliance over one-year period.

Discussion

There is mounting evidence that intraoperative handoffs have a negative impact on patient outcomes.Recent studies have demonstrated statistically significant increases in in-hospital morbidity and mortality resulting from anesthesia provider handoffs[3,4] and one publication has suggested that handoffs between attending increases the likelihood of patients remaining intubated after surgery[7].While one immediate conclusion may be that intraoperative handoffs should be eliminated or at least reduced, it is acknowledged that handoffs will be unavoidable and may even have some utility[5].This reasoning has led researchers to develop systems to make intraoperative handoffs safer, often with the aid of Anesthesia Information Systems (AIMS)[2,7].

In 2007, another Joint Commission initiative introduced the Ongoing Professional Practice Evaluation, a process for monitoring clinician performance in order to maintain their clinical privileges. In their efforts to implement this new practice, some anesthesiology departments have taken advantage of their AIMS as a way to efficiently collect performance data to detect lower performing clinicians[8]. However, there has been suggestion that these same measures can also be used for performance improvement, and in one case this has successfully been achieved to improve adherence to post-operative nausea and vomiting guidelines [9]. We present yet another application of OPPE metrics-maintaining and improving compliance to intraoperative handoff practices, with potentially positive implications to patient safety.

The five metric items were selected by the faculty task force after discussion of areas of weaknesses with current intraoperative handoffs practices.The result was an established "Best practice" for the group for handoff communication.The first item was select-

ed to discourage handoffs outside the operating room.We felt that it was important for the handoff to occur at the patient's bedside, which would allow the discussion to unfold in context.The second item encourages both faculty to review the critical details in the medical history that may not be evident on the anesthetic chart such as patient comorbidities, baseline lab values and ECG's.

The third and fourth items were thought to reflect key pieces of information that should be reviewed in any handoff situation. Finally, it was noted that it was common for a transfer of medical responsibility to occur without the knowledge of the rest of the operating room team, therefore the fifth item reminded the clinicians to notify the change to the operating room personnel.

It is important to note that the five entries were not intended to act as an intraoperative checklist or to replace a proper handoff discussion.While a suggested intraoperative checklist was distributed, we believed that as experienced clinicians, most faculty had developed their own scripted handoff routines and may have become resentful if we tried to enforce use of a "Rigid" checklist. The five items for entry into the AIMS therefore served as prompts or reminders that a proper intraoperative handoff was expected and in essence, could be said to act as evidence of intraoperative handoff discussions.Finally, tracking completion of these charting requirements allowed the collection of metrics for quality control and feedback to the faculty.

As seen with efforts to implement changes to clinical practice in other domains[10],compliance to this required documentation of five items was initially low, possibly due to unfamiliarity with the requirement and/or resistance to change.However, as this data was made transparent through feedback sessions with faculty, compliance increased and at the end of that review period remained at 87%.Further analysis of data indicated that a small number of non-compliant participants (outliers) were able to bias the results and therefore this percentage may represent an underestimation of the faculty's participation in the protocol as a whole.

This report requires several clarifications.First, documenting that a handoff occurred does not ensure that the handoff was accurate and comprehensive, nor does it confirm that the receiver has retained and processed critical information.Second, the improved scores on providers' metrics may simply reflect increased documentation and not necessarily that a handoff was performed at all.Finally, it is possible that selecting a different set of items to document would further improve compliance and even have the potential to integrate more meaningfully with an actual handoff protocol through the AIMS.All of these factors were recognized at the outset but the scope of our project was limited by our current

AIMS, so the purpose of this initiative was simply to incentivize our faculty to perform a proper intraoperative handoff guided by a suggested checklist.The current literature on intraoperative handoffs has so far not addressed the issue of compliance to handoff protocols and it is our hope that this report will help to stimulate that field.

Conclusion

we have presented a method by which an AIMS can be used to collect OPPE metrics for the purpose of increasing compliance to completing an intraoperative handoff protocol.The consequences of intraoperative transitions of care are increasingly being scrutinized.Recognizing that such handoffs will always occur, it is important not only to create effective handoffs but also to confirm that they are taking place.

References

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