

Evaluation and Implementation of Health Quality Indicators in Anesthesia at Accredited SUS Hospital

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ABSTRACT

Background: In Brazil, certification mediated by Accreditation is represented in the form of levels and the criteria can be observed in the Brazilian Accreditation Manual, proposed by the National Accreditation Organization (ONA). Several reasons are described to carry out Accreditation in any hospital in relation to increasing patient and professional safety and satisfaction, increasing efficiency in care, stimulating a culture of quality, evaluating performance, increasing integration between sectors, measuring quality and standardize hospital processes. The aim of this study was to create an easily accessible tool to assess quality and safety indicators, monitor the incidence of perioperative events and in post-anesthetic recovery, and identify the adherence of anesthesiology professionals.

Methods: This is an observational, prospective, descriptive study, based on the application of a form to assess quality and health indicators in the anesthesia service at HMCSC, which has all the specialties, being recently accredited by the Canadian company Qmentum. The study protocol was developed with two types of forms on the Google platform: one for intraoperative assessment, and another for assessment at the PACU, to be filled out by the entire Anesthesia service team in order to assess and quantify adverse events, in order to prevent them or create ways to improve the quality of care. The study was carried out between July and December 2019, verifying the completion by the health professionals involved in the Anesthesia service.

Results: The evaluation of results was performed monthly from July to December 2019. In the hospital, 9,675 surgeries were performed, of which 1,693 (17.5%) were reported. Regarding the technique, 67 (39.5%) reports of general anesthesia, 152 (8.9%) of sedation, 155 (9.1%) of spinal anesthesia and 716 (42.2%) as combined. There were 96 records of complications, 51 (53%) referring to the respiratory system, 18 (18.7%) to the cardiovascular, 8 (8.3%) to the neurological, 7 (7.2%) to material and equipment and 12 (12.5%) to hospital systems and protocols. Only one report of death was observed. In addition, 29 facts do not present in the form were reported, such as 2 (6.8%) records of 5 punctures for spinal anesthesia and 1 (3.4%) of a needle with a perforated cannon, for example. Regarding PACU, there were 525 reports. Of these, 67 (12.8%) reported acute pain, 2 (0.2%) experienced hypothermia and 11 (2.1%) had nausea or vomiting.

Conclusion: Although adherence was low, the tool allowed to correlate adverse events with a database for possible prevention. The purpose of implementing this indicator is for its use in all patients, including the PACU.

Introduction

Quality and safety in anesthesia are generally monitored by analyzing perioperative mortality-morbidity and incidents [1]. However, these methods limited both sensitivity and specificity for quality and safety issues. Perioperative mortality and morbidity of patients are not always related to anesthesia. Incidents largely depend on employees' willingness to report them. Consequently, several additional measures are increasingly promoted, mainly clinical indicator tools, and evidence suggests that the quality of care in hospitals can be improved [2]. Methods to evaluate performance from industrial engineering can be broadly applied to efforts to improve the quality of healthcare [2]. When reviewing the history of measurement of anesthesia-related outcomes, 72 anesthesiologists were asked, 56 (78%) completed the questionnaire asking for the opinion of anesthesiology experts on the results attributed to the anesthesia care that patients value [3]. The main results perceived by patients suggest significant variability among patients in what they believe is most important to avoid. Aiming to improve these results, the prospective collection and analysis of scientific data conducted by physicians and through and feedback is likely to improve patient care.

In recent times, numerous innovative efforts have been made globally by anesthesia experts to improve the methodology of measuring and reporting the quality of care provided to patients. One of the important methods involves feedback from patients and surgeons to improve the quality of anesthesia [4]. Continuous surveillance over quality measurement is essential, which can be carried out through effective monitoring and, therefore, can contribute to the maintenance and improvement of standards of care [5]. The study aims to create an easily accessible tool to assess indicators, monitor and assess the incidence of perioperative events related or not to anesthesia, monitor and assess the incidence of events in the postanesthetic care unit (PACU), verify the adherence of the tool in a hospital of the SUS accredited, and identify points to improve patient outcome. The secondary objective is the possibility of implementing such a computer program for smartphones after the initial study.

Methods

This is an observational, prospective, descriptive study, based on the application of a form to assess quality and health indicators in the anesthesia service at Hospital Municipal Clinical de São Bernardo do Campo, São Paulo, which has all the specialties, being recently accredited by the Canadian company Qmentum. The study protocol was developed with two types of forms on the Google platform: one for intraoperative assessment, and another for assessment at the PACU, to be filled out by the entire Anesthesia

service team in order to assess and quantify adverse events, in order to prevent them or create ways to improve the quality of care. The population for the research will be formed from the completion of the form by health professionals involved in the Anesthesia service at the hospital. Due to the implementation of a service quality questionnaire during anesthesia and in the PACU, there was no need to fill out the free and informed consent form.

Results

The evaluation of the results was carried out monthly from July to December of the year 2019. In the hospital, 9,675 surgeries were performed, of which 1,693 (17.5%) were reported. Regarding the anesthetic technique used, 702 (41.4%) general anesthesia, 152 (8.9%) sedation, 155 (9.1%) spinal anesthesia and 684 (40.4%) combined technique. There were 96 records of complications, 40 (41.6%) referring to the respiratory system, 18 (18.7%) to the cardiovascular system, 8 (8.30%), to the neurological system, 7 (7.2%) to material and equipment and 10 (10.4%) to hospital systems and protocols. Only one report of death was observed. Twenty-nine facts do not present in the form were also reported, such as 2 (6.8%) records of 5 punctures to perform spinal anesthesia and 1 (3.4%) spinal needle with punctured cannon. Regarding PACU, there were only 525 properly filled out forms. The following were reported: 67 (12.8%) acute pain, 11 (2.1%) nausea or vomiting and 2 (0.2%) hypothermia. The time spent at the PACU averaged 1:33 hours.

Discussion

The quality and safety of anesthesia is usually analyzed based on the incidence and mortality related to the perioperative period through the reports of the involved anesthesiologists. Therefore, it depends on the doctors' willingness to report the facts that occurred, which ends up affecting the way in which the data are analyzed. In this study, an easily accessible tool was created in the form of a form and requested by all anesthesiologists in the service to complete it, but there was little adherence to the method. Aiming to improve the quality of health, whether individual, community, regional or national, the increasing development of information has increased and communication technologies in virtually every area of health [6]. Technologies are used in research and education, knowledge transfer, social support, and various health services. Mobile technology is increasingly used in telemedicine, wireless monitoring of health outcomes in disease management and delivery of health interventions. Cell phones have been shown to be an important method of encouraging better patient-to-patient communication [6]. The use of smartphones is growing exponentially across the world. Their use by healthcare professionals and patients

is increasing dramatically [7]. These facts led to the creation of this evaluation system during anesthesia and in the PACU, with a much greater adherence during anesthesia compared to PACU. In recent research, variation in the quality of apps and lack of user and physician involvement in their development were found across all pain apps in this one [8]. The usability test identified a range of user preferences. The six-month usage test at our hospital clearly showed that physicians (staffs and residents) have little affinity with these programs to improve the quality of their services.

Despite the low adherence, the form created for use during anesthesia and in the PACU collected important data. Regarding the anesthetic technique, a preference for general anesthesia over other techniques was observed. Otherwise, it will be possible to use this data to calculate the cost between the different techniques. However, this was not the object of implementation. The system implemented was able to assess the quality of the service, as a small failure rate was observed in the blocks, both in the peripheral nerve and for spinal anesthesia, in a significant number of such techniques. A greater number of complications related to the respiratory system was observed, which may be related to the fact that general anesthesia is the team's main choice, however, further studies are needed to make this statement precisely. Regarding the cardiovascular system, there were four cardiac arrests in the period, and only one death. Material reports can help hospital management to purchase or exchange materials used to improve service delivery. Regarding the PACU there was a much lower adherence of the participants with only 31%, but it allowed to collect important information. Only 12.8% patients reported acute pain, 2.1% nausea or vomiting and 0.2% hypothermia. The average length of stay at the PACU was 1:33 hours. Such data allow us to observe the anesthetic

quality of the team, since the vast majority of patients do not have complaints during recovery, which, in addition to providing well-being, can generate greater turnover in the operating room.

Conclusion

Quality and safety indicators are a useful tool to diagnose and prevent problems related to the perioperative period. The form used in this study is simple, free of cost and easy to perform, however, there was low adherence among the team. Even so, the information collected can help to prevent complications and, in addition, it can be used to demonstrate the quality that the anesthesiology service provides for the hospital and patients.

References

1. Aitkenhead AR (2005) Injuries associated with anesthesia. A global perspective. *Br J Anaesth* 95(1): 95-109.
2. Pronovost PJ, Nolan T, Zeger S, Marlene Miller, Haya Rubin, et al. (2004) How can clinicians measure safety and quality in acute care? Inpatient safety II. *Lancet* 363(9414): 1061-1067.
3. Macario A, Weinger M, Truong P, Lee M (1999) Which clinical anesthesia outcomes are both common and important to avoid? The perspective of a panel of expert anesthesiologists. *Anesth Analg* 88(5): 1085-1091.
4. Cave J, Cooke M, Chantler C (2008) High quality care for all. NHS next stage review final report. Department of Health. London.
5. Archer JC (2010) State of the science in health professional education: effective feedback. *Medical Education* 44(1): 101-108.
6. Blake H (2015) Innovation in practice: mobile phone technology in patient care. *Br J Community Nursing* 13(4): 160-166.
7. Haffey F, Brady RRW, Maxwell S (2013) Smartphone apps to support hospital prescribing and pharmacology education: a review of current provision. *Br J Clinical Pharmacology* 77(1): 31-38.
8. Reynoldson C, Stones C, Allsop M, Peter Gardner, Michael I Bennett, et al. (2014) Assessing the quality and usability of smartphone apps for pain self-management. *Pain Medicine* 15(6): 898-909.

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