

# Audit on anaesthetic record completeness at a university teaching hospital operation theater of low-resource setting, 2013

## Abstract

**Background:** Anaesthetic record is an essential part of the patient's medical record. It includes the perioperative management that is relevant to the anaesthesia practice. This information helps other staff who will be involved in the care of the patient, for medico-legal defense and for quality assurance. We sometimes found anaesthetic recording sheets with incomplete information during the postoperative visit of patients in the recovery room and on the wards in our hospital. We aimed to assess the level of anaesthetic record completeness.

**Methods:** A cross-sectional study was conducted from February 18-March 18, 2013. All patients who were operated under anesthesia during the study period were included. A checklist developed based on our hospital anaesthetic sheet that used for data collection.

**Result:** Hundred and twenty anaesthetic record sheets were audited. The name and time written consistently in local time were documented for all patients. The level of documentation was >90% for age, sex, date of operation, type of operation, medical history, physical examination, allergic history, medication history, consent, induction drugs with their dose, and maintenance drugs. However, the level of record completeness was < 50% for the content of consent, pre-induction vital signs, intraoperative vital signs, start and end of both anesthesia and surgery, type of regional anaesthesia, intraoperative blood loss, and order for postoperative management.

**Conclusion and recommendation:** The level of anaesthetic record completeness was substandard in our hospital compared with the recommendations of WFSA and AAGBI. Training should be given for anaesthetists about the relevance of appropriate documentation for perioperative patient care. Furthermore, We suggest that clinical audit need to be carried out regularly in this hospital until the anaesthetist meet the standards, and in other similar settings in the country to know the magnitude of the problem and to establish strategies that may improve the practice of clinical record keeping.

**Keywords:** anaesthetic, record completeness, documentation

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## Introduction

Clinical record keeping is a crucial part in good professional practice and the delivery of quality healthcare.<sup>1</sup> Moreover, good clinical record keeping enhances the continuity of care and communication among different healthcare professionals.<sup>1</sup> According to the 2009 World Health Organisation (WHO) guidelines for safe surgery, documents and documentation for effective communication and the exchange of information in the operating room are pivotal.<sup>2</sup> Accurate, available documents and documentation are vital to protective patient safety.<sup>2</sup> Anaesthetic record is an essential part of the patient's medical record. It includes the documentation of all aspects of the anaesthesia management; preoperative, intraoperative and postoperative management that are relevant to the anaesthesia practice.<sup>3</sup> Anaesthetists are predisposed to different medico-legal issues. Some of the causes out of many are poor recording, inappropriate delegation and poor communication with other staffs, patients and relatives.<sup>4,5</sup> The anaesthesia record provides information that may help other staff who will be involved in the care of the patient and other subsequent anaesthetists. It may also be valuable for medico-legal defense and can be used for quality assurance and research purposes. All components of the anaesthesia record must

be readily available throughout a patient's hospital stay, and for all subsequent attendances.<sup>6,7</sup> However, anaesthetic recording sheets with incomplete information were found during the postoperative visit of patients in the recovery room and on the wards which will be very difficult for the caregivers. Even if anaesthetists may be busy with the monitoring of critically ill patients during operation and teaching, they are expected to document all information on anaesthetic record sheet. Despite this, there is no previous research conducted in the study area that may reveal the magnitude of the problem. This clinical audit aimed to determine the magnitude of the problem and to forward recommendations.

## Methods

Ethical approval was obtained from the institutional ethical review committee. A cross-sectional study was conducted from February 18-March 18, 2013. All anaesthetic record sheets of patients who were operated upon during the study period were included in this clinical audit. A checklist that was developed based on our hospital anaesthetic record sheet which used for data collection. It was pilot tested in other hospital and changes were made before the data collection. Patients' charts and anaesthetic record sheets were reviewed after operation.

**Components of our hospital anaesthetic record sheet:**

**Part-I:** Patient information: name, age, sex and card number.

**Part-II:** Preoperative assessment: Past medical history, physical examination, airway examination, allergy status, regular medication, ASA status, patient consent and content of pre-operative discussion with the patient.

**Part-III:** Information related to procedure: Name of surgeon, name of anesthetist, date of procedure, type of operation and surgical site.

**Part-IV:** Perioperative period: Anesthetic machine check, site of IV cannula, induction agents, induction doses, maintenance drugs, pre-induction V/S (BP, PR & RR), graph of vital signs, V/S record throughout procedure (BP, HR, SPO2 & ETCO2), start of anaesthesia or surgery, end of anaesthesia or surgery, time written consistently, documentation of IV fluids, and documentation of blood loss.

**Part-V:** Post-operative: Documentation of pain management, fluid management, PONV and post-operative monitoring.

**Result**

A total of 120 patients who were operated upon under anesthesia during the data collection period were included in this audit. The level of anesthetic record completeness was 100% for the name of the patient and time written consistently in local time during operation. The record completeness was >90% for the age of the patient, sex, date of operation, type of operation, medical history, physical examination, allergy history, medication history, consent, induction drugs and their dose, and maintenance drugs. On the other hand, the completeness of documentation was < 50% for the content of consent, pre-induction vital signs, intraoperative vital signs recorded throughout the procedure (BP, PR, SPO2 and EtCo2), start and end of both anaesthesia and surgery, type of regional anesthesia, intraoperative blood loss, and postoperative nausea and vomiting management order.

**Factors related with patient information:**

The name, sex and card number were documented for 100%, 92.5% and 87.5% patients respectively (Table 1).

**Table 1** Anaesthetic record completeness about patient identity at the University of Gondar hospital operation theatres, February18-March18, 2013 (N=120)

Factor	Frequency	Percentage
Name		
Yes	120	100%
No	0	0%
Age		
Yes	114	95%
No	6	5%
Sex		
Yes	111	92.5
No	9	7.5
Card number		
Yes		
No	105	87.5
	15	12.5

**Factors related with the preoperative assessment of patients:**

Documentation about the preoperative assessment of patients was insufficient. Anesthetists were very vulnerable to medico-legal issues because the majority of anesthetists did not document the content of the consent about the possible complications of anesthesia and surgery (Table 2).

**Table 2** Anaesthetic record completeness about the preoperative assessment of patients at the University of Gondar hospital operation theatres, February18- March18, 2013 (N=120)

Factor	Frequency	Percent
Medical history		
Yes	108	90
No	12	10
Physical examination		
Yes	114	95
No	6	5
Airway examination		
Yes	108	90
No	12	10
Allergy status		
Yes	114	95
No	6	10
Regular medication		
Yes	114	95
No	6	5
ASA status		
Yes	84	70
No	36	30
Consent		
Yes	108	90
No	12	10
Content of consent discussed		
Yes	6	5
No	114	95

**Factors related with operation:**

The anaesthetic recording practice of anesthetists regarding information about operation was not satisfactory. This might affect drastically both the intraoperative and postoperative management of patients (Table 3).

**Table 3** Anaesthetic record completeness about operation at the University of Gondar hospital operation theatres, February18- March18, 2013 (N=120)

Factor	Frequency	Percentage
Name of surgeon		
Yes	72	60%
No	48	40%
Name of responsible anaesthetist		
Yes	93	77.50%
No	27	22.50%
Date of operation		
Yes	111	92.5
No	9	7.50%
Type of operation		
Yes	108	90%
No	12	10%
Site of operation		
Yes	102	85%
No	18	15%

**Factors related with perioperative information:**

Documentation on perioperative information was unsatisfactory except induction drugs and local time written consistently (Table 4.1 & 4.2).

**Factors related with postoperative order**

Even though postoperative order and management is one of the core parts of patient care after operation, the postoperative order practice was poor. It was a big gap that might considerably affect patient outcome after operation and anaesthesia. Especially, the anesthetists

concern for the postoperative nausea and vomiting management was extremely poor (Table 5).

**Table 4.1** Anaesthetic record completeness about the perioperative condition of patients at the University of Gondar hospital operation theatres, February18- March18, 2013 (N=120)

Factor	Frequency	Percentage
Anaesthetic machine & circuit checked		
Yes	102	85
No	18	15
Size of IV cannula		
Yes	99	82.5
No	21	17.5
Site of IV cannula		
Yes	90	70
No	30	25
Induction drug written		
Yes	117	97.5
No	3	2.5
Dose of induction drug		

**Table 4.2** Anaesthetic record completeness about the perioperative condition of patients at the University of Gondar hospital operation theatres, February18 - March18, 2013 (N=120)

Factor	Frequency	Percentage
Anaesthetic machine & circuit checked		
Yes	102	85
No	18	15
Size of IV cannula		
Yes	99	82.5
No	21	17.5
Site of IV cannula		
Yes	90	70
No	30	25
Induction drug written		
Yes	117	97.5
No	3	2.5
Dose of induction drug		
Yes	114	95
No	6	5
Maintenance drug		
Yes	108	90
No	12	10
Pre-induction V/S		
Yes	45	37.5
No	75	62.5
Clear scale on V/S graph		
Yes	105	87.5
No	15	13.5
BP,HR,SPO2 & EtCO2 recorded throughout		
Yes	54	45
NO	66	55

## Discussion

Complete medical record is a cornerstone for the quality of health care provision. It provides information that will be used for planning, the continuous care of patients, it creates a medium of communication among health professionals, for research, quality assurance and medico legal defense.<sup>1,2</sup> The anaesthetic record is a key element of good anaesthetic practice. It can facilitate effective monitoring of patients, vital medico-legal document and can serve as an important tool for audit, research, and quality improvement in anaesthesia service. All of these values depend on the accuracy of the record and type of recording (handwritten or electronic).<sup>8</sup> This clinical audit depicted that anaesthetic record sheet completeness was

substandard in our hospital. Anaesthetic recording about the patient identity was not complete except the name of the patient. The age of the patient was documented for 114 patients (95%), sex 96 (92.5%), and card number 105 (87.5%). This will create a gap in the subsequent management of the patients. In the current audit, anaesthetic recording practice about the preoperative assessment of patients was inadequate. The level of documentation for medical history, physical examination, airway evaluation, allergy history, medication history, ASA status, consent and content of consent were 108 (90%), 114 (95%), 108 (90%), 108 (90%), 114 (95%), 114 (95%), 84 (70%), 108 (90%) and 6 (5%) respectively. Incomplete recording of the important preoperative variables and lack of documentation of the content of the consent could increase the risk of patient morbidity and might predispose anaesthetists to medico-legal litigations.<sup>4,5,9</sup> In addition, the details of discussion between the patient and anaesthetist particularly in emergency and high risk patients must be documented.<sup>10,11</sup>

**Table 5** Anaesthetic record completeness about the postoperative order and management at the University of Gondar hospital operation theatres, February18- March18, 2013 (N=120)

Factor	Frequency	Percentage
Postoperative pain management		
Yes	60	50
No	60	50
Postoperative fluid management		
Yes	66	55
No	54	45
Postoperative monitoring written		
Yes	87	72.5
No	33	17.5
PONV management written		
Yes	3	2.5
No	117	97.5

Anaesthetic recording practice of anaesthetists about operation was not satisfactory. The name of the surgeon was documented in 72 patients (60%), name of responsible anesthetist 93 (77.5%), date of operation 111 (92.5%), type of operation 108 (90%) and site of operation in 102 (85%) patients. This might markedly affect both the intraoperative and postoperative management of patients (2, 12-16). Moreover, the anaesthetic recording about the perioperative patient information was unacceptably low except documentation of induction drugs and time written consistently in local time. Anaesthesia machine checked for 102 (85%) patients, size of IV cannula 99 (82.5%), site of IV cannula 90 (70%), induction drug written 117 (97.5%), dose of induction drug 114 (95%), maintenance drug 108 (90%), pre-induction vital signs 45 (37.5%), clear scale on vital sign graph 105 (87.5%), intraoperative vital signs (BP,HR,SPO2,EtCo2) recorded throughout the procedure 54 (45%), start of anesthesia and surgery 30 (25%), end of surgery and anesthesia 18 (15%), time written consistently in local time 120 (100%), IV fluid 99 (82.5%) and blood loss 33 (27.5%). As it has been shown above, the standard of documentation is very low in the majority of the parameters which may impact negatively on intraoperative and postoperative management of patients, and patient outcome after anaesthesia and surgery in general. This practice level is unacceptably low compared with the standards of perioperative patient monitoring and documentation practice recommended by World Federation of Societies of Anesthesiologists (WFSA) and Associations of Anaesthetists of Great Britain and Ireland (AAGBI).<sup>11-16</sup> Although, postoperative order and management is one of the core aspects of patient care after operation, the practice was very low. The postoperative pain management was ordered for 60 (50%) patients, postoperative fluid management 66 (55%),

postoperative monitoring instructions 87 (72.5%) and postoperative nausea and vomiting management order for 3 (2.5%) patients. This was a big gap that might considerably affect patient outcome after surgery and anesthesia.<sup>12-16</sup>

## Conclusion

The overall anaesthetic recording practice of anesthetists was substandard in our hospital compared with the standards recommended by WFSA and AAGBI. There was no trend of documenting the content of consent during the preoperative patient assessment of all patients except one during the data collection period. This could predispose anaesthetists to medico-legal issues. Furthermore, there was a big gap in the documentation of patients' hospital number, name of surgeon and anesthetist, site of operation, anaesthesia machine check, size and site of IV cannula. Documentation practice on pre-induction vital signs, duration of anesthesia and surgery, intraoperative vital signs (BP, HR, SPO<sub>2</sub> & EtCO<sub>2</sub>), and blood loss were also very poor. The postoperative order practice was also very low. Surprisingly, almost all anaesthetists did not write order for postoperative nausea and vomiting management.

## Recommendation

Training should be given for our hospital anaesthetists about the advantage of proper documentation with great emphasis on the pre-induction vital signs, duration of anaesthesia and surgery, intraoperative vital signs (BP, HR, SPO<sub>2</sub> & EtCO<sub>2</sub>) and intraoperative blood loss since poor documentation is one of the main factors that may lead to poor perioperative patient management and postoperative patient outcome. The preoperative consenting form and the trend of documentation of the content of the preoperative consent need to be changed so as to protect anaesthetists from medico-legal litigations. Furthermore, the postoperative order practice of anaesthetists should be given a due emphasis with especial consideration about postoperative pain, fluid and postoperative nausea and vomiting management. Finally, we suggest that clinical audit need to be conducted regularly in this hospital until the anaesthetists meet the standard, and in other similar settings in the country to know the magnitude of the problem and to establish strategies that may improve the practice of clinical record keeping.

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## Conflicts of interest

The authors declare that there is no conflict of interest.

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