

Clinical Audit on the Quality of Pre-Anaesthesia Assessment based on Predefined Pre-anaesthesia Assessment Form

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ABSTRACT

Objective: To determine the percentage completion of individual GQI indicators and the overall percentage of completed predefined Pre-anaesthesia assessment forms and identify any areas for improvement in the documentation of pre-anaesthesia assessment.

Study Design: Cross-sectional study.

Place and Duration of Study: Department of Anaesthesiology, Combined Military Hospital, Sialkot Pakistan, from Mar to Sep 2021.

Methodology: Patients who reported to the operation theatre during the study period for elective surgery after having undergone formal pre-anaesthesia assessment preoperatively based on predefined Pre-anaesthesia assessment form (PAAF) were included. The quality of Pre-anaesthesia assessments from completion was assessed using a modified Global Quality Index with twenty-seven components.

Results: The overall completion rate for all pre-anaesthesia assessment form components was 77.10±30.26%. The lowest completed items were local examination (0.00%), airway assessment, neck mobility, mouth opening, thyromental distance (24, 10.61%), weight (25, 11.36%), GIT (86, 38.64%) and CNS/GCS (108, 48.48%) assessment, pre-operative vitals (121, 54.55%) and family history (129, 58.33%).

Conclusion: We need to improve the quality of pre-anaesthesia assessment forms at our institution by ensuring that all relevant information is collected and documented.

Keywords: Anaesthesia, Assessment form global quality index, Predefined pre-anaesthesia.

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INTRODUCTION

The pre-anaesthesia evaluation is the first step in a series of anaesthetic actions performed on a patient.¹ The American Society of Anesthesiologists (ASA) states that a physician with training and experience in anaesthesia and perioperative medicine should perform the preoperative evaluation, which is responsible for the patient's care during the intraoperative and postoperative periods.^{2,3} Pre-anaesthesia assessment is crucial in the perioperative care of patients undergoing surgery.⁴ It allows the anaesthetist to obtain important information about the patient's medical history, medications, and allergies and assess their physical status.⁵ This information is essential to plan the safest and most effective anaesthetic care for the individual patient.^{1,6} It also provides an opportunity for the anaesthetist to explain

the anaesthetic procedure to the patient and answer any questions they may have. This can help reduce anxiety and improve understanding of what will happen during surgery.^{7,8}

In some cases, the pre-anaesthesia assessment may also identify potential complications during surgery. The Australian Incident Monitoring Study database revealed that inadequate preoperative patient preparation and evaluation contributed to 3.1% of all incidents reported.⁹ The anaesthetist can then take steps to minimize these risks before surgery begins.

There is a growing emphasis on the quality of care that patients receive. As such, healthcare organizations are encouraged to undertake regular clinical audits to assess the quality of their services. This audit aimed to determine the percentage completion of individual GQI indicators and the overall percentage of completed PAAFs and identify any areas for improvement in the documentation of pre-anaesthesia assessment forms.

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METHODOLOGY

The cross-sectional study was conducted at the Anaesthesiology Department, Combined Military Hospital Sialkot, Pakistan from March to September 2021, after obtaining approval from the Institutional Review Board[ERC/05/2022].

Inclusion Criteria: Patients of either gender, of any age group, weight and any ASA Class, who reported to the operation theatre during the study period for elective surgery after having undergone formal pre-anaesthesia assessment preoperatively based on predefined Pre-anaesthesia assessment form(PAAF) were included.

Exclusion Criteria: Patients with incomplete or missing medical records and patients with documented pre-existing conditions that could affect the quality of pre-anaesthesia assessment (e.g., cognitive impairment), patients who operated under local anaesthesia were excluded.

All the patients operated on at the operation

theatres of Combined Military Hospital, Sialkot during the study period were included. Pre-anaesthesia assessments performed during this period were reviewed by analyzing Pre-anaesthesia assessment forms (PAAF) completed intra-operatively and data recorded in a specific format during the period under consideration. A modified Global Quality Index (GQI) with twenty-seven components was used to assess the quality of PAAF completion.

For each component, the labels were applied as "complete" if the component had complete or adequate documentation, "incomplete" if the component had inadequate or partial documentation, "illegible" if the information was not clear enough to read and understand, and "blank" if the component did not have any documentation. The completion rate for all indicators was rated as excellent, with a 100% completion rate considered the best possible result. A 90-99% completion rate was acceptable, while anything below 90% was considered a critical area needing further improvement.

Table: Completion rate of Individual GQI Indicators

Indicators	Complete	In complete	Blank	Illegible	Assessment
	n(%)	n(%)	n(%)	n(%)	
Date of visit	218(98.48%)	0(0.00%)	3(1.52%)	0(0.00%)	Acceptable
Name, rank, gender	222(100.00%)	0(0.00%)	0(0.00%)	0(0.00%)	Excellent
Age	217(99.23%)	0(0.00%)	2(0.77%)	0(0.00%)	Acceptable
Diagnosis	197(88.64%)	0(0.00%)	22(9.85%)	3(1.52%)	Needs Improvement
Procedure/Operation	197(88.64%)	0(0.00%)	25(11.36%)	0(0.00%)	Needs Improvement
Past medical history	180(81.06%)	0(0.00%)	40(18.18%)	2(0.76%)	Needs Improvement
Past surgical history	190(85.61%)	12(5.30%)	18(8.33%)	2(0.76%)	Needs Improvement
Family History	129(58.33%)	0(0.00%)	92(41.67%)	0(0.00%)	Needs Improvement
Drug history	181(82.44%)	15(6.87%)	20(9.16%)	3(1.53%)	Needs Improvement
Allergy/ smoking/ addiction	202(90.91%)	2(0.76%)	18(8.33%)	0(0.00%)	Acceptable
Dental examination	212(95.45%)	0(0.00%)	10(4.55%)	0(0.00%)	Acceptable
Preop vitals	121(54.55%)	94(42.42%)	7(3.03%)	0(0.00%)	Needs Improvement
CVS auscultation	193(87.12%)	0(0.00%)	29(12.88%)	0(0.00%)	Needs Improvement
Respiratory auscultation	222(100.00%)	0(0.00%)	0(0.00%)	0(0.00%)	Excellent
CNS/GCS	108(48.48%)	7(3.03%)	108(48.48%)	0(0.00%)	Needs Improvement
GIT	86(38.64%)	0(0.00%)	136(61.36%)	0(0.00%)	Needs Improvement
Local examination	0(0.00%)	0(0.00%)	222(100.00%)	0(0.00%)	Needs Improvement
Mallampatti classification	222(100.00%)	0(0.00%)	0(0.00%)	0(0.00%)	Excellent
Airway assessment, neck mobility, mouth opening, thyromental distance	24(10.61%)	0(0.00%)	198(89.39%)	0(0.00%)	Needs Improvement
ASA Status	212(95.45%)	0(0.00%)	10(4.55%)	0(0.00%)	Acceptable
Baseline investigations	176(79.55%)	42(18.94%)	3(1.52%)	0(0.00%)	Needs Improvement
Weight	25(11.36%)	0(0.00%)	197(88.64%)	0(0.00%)	Needs Improvement
Anesthesia plan	212(95.45%)	0(0.00%)	10(4.55%)	0(0.00%)	Acceptable
NPO Status	212(95.45%)	10(4.55%)	0(0.00%)	0(0.00%)	Acceptable
Advice on medicine intake	222(100.00%)	0(0.00%)	0(0.00%)	0(0.00%)	Excellent
Consent	213(96.21%)	8(3.79%)	0(0.00%)	0(0.00%)	Acceptable
Name of anesthetist	222(100.00%)	0(0.00%)	0(0.00%)	0(0.00%)	Excellent

Descriptive analysis was carried out using Microsoft Excel. The frequency and percentages were used to represent the completion status of each indicator. The mean of the overall completion rate was presented.

RESULTS

Out of twenty-seven indicators, five indicators (18.52%) were labelled as excellent, 8(29.63%) were labelled as acceptable, and 14(51.85%) were labelled as needing improvement (Table). The average completion rate of forms was 77.10%, with a standard deviation of 30.26% and a minimum of 0% for local examination. The group-wise graphical representation of scores is given in Figure-1, and the average completion rate is given in Figure-2.

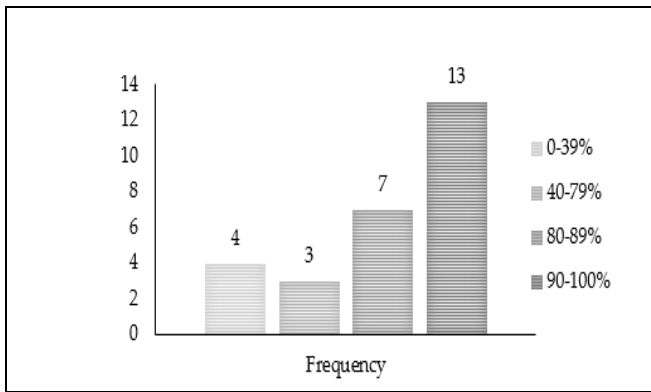


Figure-1: GQI Completion Percentage Chart

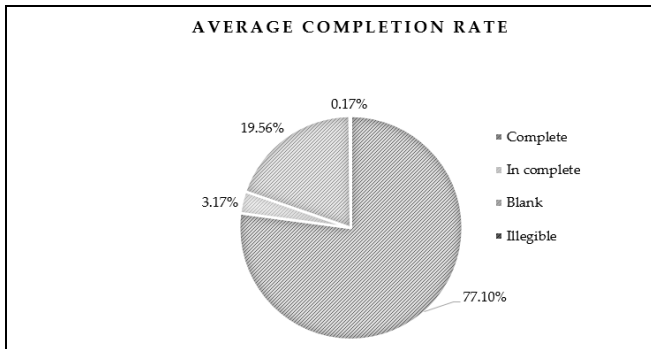


Figure-2: Average Completion Rate of GQI Scores

DISCUSSION

Perioperative responsibility is divided between the surgeon and the anaesthetist. Understanding and stratifying a patient's surgical risk is essential for safe anaesthesia.¹⁰ The anaesthetist is responsible for ensuring that the patient is in an appropriate physical and psychological state for surgery to proceed safely.

Consequently, the quality of pre-anaesthesia assessment directly bears patient safety.¹¹ Several factors have been identified as potential barriers to optimal assessment. These include inadequate time, lack of access to preoperative tests, patients' unwillingness to disclose information and incomplete documentation.^{12, 13}

Pre-anesthetic evaluation helps in the optimization of patients for surgery. In addition, it provides an opportunity to explain the anaesthetic procedure and allay any fears or concerns the patient may have. Despite its importance, our study found that the average completion rate for pre-anaesthesia assessment forms was only 77.10±30.26%. In a study by Shahzad *et al.*¹³ it was 93.5±5.2% (22 components GQI), and Mokgwathi *et al.*¹⁴ reported a completion rate of 72.2 ±13.9% (15 components GQI). Woldegerima *et al.*¹⁵ reviewed 122 forms, and none was fully completed according to indicator.

Seven of the fourteen items needing improvement in our study had the lowest completion percentages. This low completion rate is likely due to several factors, including time constraints, lack of understanding of the importance of pre-anaesthesia assessment, and inadequate training. The local examination is integral to the pre-anaesthesia assessment, as it helps identify any localized pathology that may affect the anaesthetic plan. The 0% completion rate for this indicator in our study is alarming and needs to be addressed urgently. Airway assessment, neck mobility, and mouth opening are other essential parts of the pre anaesthesia assessment.¹⁶ The mouth opening assessment helps identify patients with restricted mouth opening, which can signify temporomandibular joint dysfunction. The thyromental distance assessment helps identify patients with a short thyromental distance.¹⁷ This helps identify patients at risk for difficult intubation, and a complex airway can have disastrous consequences. In our study, the low completion rate of 10.61% for neck mobility, mouth opening, and thyromental distance is likely because many anaesthesiologists do not perform a detailed airway assessment in all patients.

The weight and GIT assessment help identify patients at risk for aspiration.¹⁸ The weight was documented in only 11.36%, and the GIT assessment was documented in only 38.64% of cases. The CNS/GCS assessment helps identify patients at risk for postoperative neuropsychiatric complications.¹⁹ The CNS/GCS was documented in only 48.48% of

cases in our study. The preoperative vital signs help identify patients at risk for postoperative cardiovascular complications.^{16,20} The preoperative vital signs were documented in only 54.55% of cases in our study. The family history helps identify patients at risk for hereditary conditions. The family history was documented in only 58.33% of cases in our study. This audit has highlighted key areas that will be focused on in order to overcome deficient areas.

There are several ways to improve the completion rate of pre-anaesthesia assessment forms. One way is to provide more training for doctors and nurses on the importance of pre-anaesthesia assessment and the components that should be included in the form. Another way is to make the forms more user-friendly so they can be efficiently completed on time. Finally, it is crucial to create a culture of safety in which pre-anaesthesia assessment is seen as an essential part of providing safe and high-quality care.

This study will contribute by providing a comprehensive audit of the quality of pre-anaesthesia requirements, offering insights into adherence, documentation accuracy, and potential areas for improvement.

LIMITATION OF STUDY

This study has limitations. First, it was a retrospective study, and data were collected from the medical records of patients who underwent surgery at our institution. Second, we only included patients who underwent elective surgery.

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CONCLUSION

We need to improve the quality of pre-anaesthesia assessment forms at our institution by ensuring that all relevant information is collected and documented. Anaesthesiologists must ensure that all relevant information is collected during the pre-anaesthesia assessment to make informed decisions about the care of their patients. The lack of completion of pre-anaesthesia assessment forms can lead to inadequate patient care and potential adverse events.

Conflict of Interest: None.

Authors Contribution

Following authors have made substantial contributions to the manuscript as under:

KM & MAA: Data acquisition, data analysis, drafting the manuscript, approval of the final version to be published.

BY & MS: Data interpretation, critical review, approval of the final version to be published.

MS & MS: Conception, study design, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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