

RESEARCH PROTOCOL – M MED (ANAESTHESIOLOGY)

DEPARTMENT OF ANAESTHESIOLOGY,

UNIVERSITY OF LIMPOPO (MEDUNSA CAMPUS)

TITLE:

AN AUDIT OF PREOPERATIVE EVALUATION OF GENERAL SURGERY PATIENTS AT DR
GEORGE MUKHARI HOSPITAL (DGMH), GARANKUWA

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INTRODUCTION

Anaesthetists are responsible for the preoperative assessment of patients whom they anaesthetise. The aim of assessing the patients is to improve the operative outcome.¹ The traditional method of preoperative preparation practiced at Dr George Mukhari hospital, Garankuwa involves reviewing the patient a day before the operation, examining the results ordered by surgeons, ordering premedication drugs and documenting any findings in the preoperative evaluation form. Poor documentation and record keeping on the preoperative evaluation form is one of the biggest obstacles in attaining good practice and hence improving patient outcome.

Analysis of the Australian Incident Monitoring Study (AIMS) revealed that 10% of reports identified that the patients were not reviewed preoperatively by an anaesthetist, whilst in 23%, the anaesthetist involved in the operating theatre had not performed the preoperative assessment.² Studies on the problem of poor record keeping by anaesthetists, in South Africa are lacking and therefore it is difficult to estimate the magnitude of this problem. The rationale of the study will be to audit the anaesthetic records available for 2008 and critically analyse the record keeping system of anaesthetists at Dr George Mukhari hospital, Garankuwa.

LITERATURE REVIEW

Preoperative assessment is the clinical investigation that precedes anaesthesia for surgical and nonsurgical procedures, and it is the responsibility of an anaesthetist. A preoperative assessment is believed to be a basic element of anaesthetic care.³ It is primarily aimed at improving patient outcome. This is achieved by; identifying potential anaesthetic difficulties, identifying existing medical condition, improving safety by assessing and quantifying risk, allowing planning of perioperative care, providing opportunity for explanation and discussion, allaying fear and anxiety. Good perioperative assessment will help to reduce costs, increase efficiency of operating theatre time and subsequently reduce cancellations of surgery.¹ This assessment should rely on rational use of information from the patient's medical records, clinical interview, physical examination, and some additional tests.

The preoperative interview is the first introduction to a patient. This is the most efficient and productive of the three basic techniques, namely the preoperative interview, physical examination and additional tests.³ The initial impression is vital to establish a relationship with the patient and remains a fundamental part of the anaesthesiologist's practice.⁴ The objective of the interview in patients who are presumed to be basically healthy is to detect unrecognised disease that could increase the risk of surgery above the baseline. The preoperative medical history should focus on the indication for surgical procedures, allergies, undesirable side-effects to medication or other agents, known medical problems, surgical history, major trauma, and current medications.³ The preoperative interview has been documented to reduce patient anxiety before surgery and may decrease postoperative pain and length of hospital stay. This may be due to the patient's perceived control over expected perioperative events he will be experiencing.⁴

A complete physical examination in presumed healthy individuals includes: weight and height, blood pressure, pulse, and respiratory rate; cardiac and pulmonary examination; anatomical conditions required for specific anaesthetic procedures, such as intubation (airway examination), regional anaesthesia, venous access, etc; and other particular examinations thought to be of use.³ Inspection of the airway may be the single most important component of physical examination from the anaesthesiologist perspective. Therefore, all patients should have a thorough documentation of an

airway examination.⁵ The use of routine testing in asymptomatic healthy patients is not beneficial or cost effective.⁴

Evidence suggests that 60-70 % of preoperative testing is unnecessary, if a proper history and physical examination are done.³ A physician should consider the risk-benefit ratio of any laboratory test that is ordered.⁴ Thus, laboratory tests should be ordered based on information obtained from the history and physical exam, the age of the patient, and the complexity of the surgical procedure.⁴ The goals in assessing risk are to inform patients so they can weigh their options and to identify opportunities to alter that risk. ⁵ With current practice, anaesthesia is safer than it used to be. Patient and surgical factors are important than anaesthetic factors in prediction of 7-day mortality.³

The anaesthetist must be aware of any medical problem of his or her patient, in order to provide anaesthesia in the best possible conditions to maximise safety and comfort.³ Significant predictors of postoperative morbidity and mortality include patient's age, preoperative physical status as defined by the American Society of Anaesthesiologists (ASA) classification.⁴ The ASA classification was the first systematic attempt to stratify the risk for patients undergoing anaesthesia. This classification refers to mortality, based on the general clinical impression of the severity of systemic illnesses.

The preoperative evaluation form is the basis for formulating the best anaesthetic plan tailored to the patient. It should aid the anaesthesiologist in identifying potential complications, as well as serve as a medico-legal document. The information obtained needs to be complete, concise, and legible.⁶ Despite the recognised medical and financial importance of this visit, there are neither detailed guidelines, nor any definition of what the minimum/ necessary information required is.⁶

A group of anaesthetists from University of California, San Diego studied the quality of preoperative evaluation forms across the United States and rated them into three categories: informational content, ease of use, and ease of reading. Their results revealed that a surprisingly high percentage of forms had missing important information. Appendix 1 is an example of the preoperative evaluation form in use at the University of Iowa Hospitals, which attempts to document all pertinent information.⁶

One of the best defences we have for prevention of litigation after providing quality care is a thorough preoperative evaluation. Patients are less likely to initiate litigation against a physician or anaesthetist viewed as compassionate and who took time to explain the risks and benefits of a procedure. Preoperative assessment is also targeted by malpractice attorneys with lawsuits addressing inadequate preoperative assessment.⁴

METHODOLOGY

AIM OF STUDY

To conduct an audit of the anaesthetic preoperative evaluation of general surgery patients at Dr George Mukhari hospital, Garankuwa.

OBJECTIVES

- To determine the proportion of completed records from data collected from the preoperative evaluation forms at DGMH, Garankuwa in 2008
- To compare the completeness of information recorded in the preoperative evaluation form used at DGMH, Garankuwa with a standardized preoperative form which uses the global quality index (GQI)

STUDY DESIGN

This will be a retrospective study covering the study period from 1st January 2008 to 31st December 2008

STUDY POPULATION

The record files are 1000 general surgery patients who underwent elective surgery at Dr George Mukhari hospital in the year 2008. Records of such patients will be obtained from the hospital medical records section.

SAMPLE SIZE

For the study population of 1000, using a 95% confidence level and 10% confidence interval, the sample size will be **88**.

SAMPLING FRAME

Every 10th preoperative evaluation form will be systematically selected until the sample size is achieved.

MATERIALS

Completed preoperative evaluation forms from 1st January 2008 to 31st December 2008 of elective general surgery operations involving general anaesthesia will be used.

DATA COLLECTION

Records for surgical patients who underwent elective surgery at Dr George Mukhari hospital in 2008 will be retrospectively assessed. Before reviewing the preoperative evaluation forms, a list of important items to include in a preoperative evaluation form will be derived. Each item will be weighed by its perceived importance in anaesthetic management and medico-legal documentation. Fifteen (15) items will be used and named as the modified version of the Global Quality Index (GQI). The quality of information content in the form will be scrutinised by searching for the 15 items. The criteria incorporated in the modified Global Quality Index (GQI) are: ⁷

1. Name
2. Age
3. Airway
4. Cardiopulmonary status
5. Surgical procedure
6. Preoperative diagnosis
7. Preoperative vital signs
8. Per oral status
9. Medications
10. Allergies
11. Weight
12. ASA status
13. Anaesthetic history and complications
14. Assessment
15. Plan

Criteria used will be adapted from the modified version of 'global quality index (GQI) ⁷ which utilises 15 criteria considered basic on the preoperative evaluation form.

$$GQI = 100X (a-b)/ a \text{ } ^7$$

Where *a* is the total number of criteria selected (i.e. *a* = 15) and *b* is the number of criteria lacking.

DATA ANALYSIS

The number of hospital files that did not contain the Anaesthetic card will be expressed as a percentage out of the total number of files that were reviewed in the study. The GQI will be calculated for each file.

Simple descriptive statistics (ie mean, median, standard deviation, minimum, maximum values) will be calculated for the GQIs. A 95% confidence interval will be calculated for the mean values. A classification of GQI values based on quartiles will be investigated. Further exploratory analyses as appropriate will be performed with the assistance of a statistician.

RELIABILITY OF THE STUDY

Reliability refers to the 'consistency' or 'repeatability' of the measures. This will be assured by using the same standardized form to collect the data and only the researcher will review the selected sample of files.

VALIDITY OF THE STUDY

Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. This will be assured by using the criteria incorporated in the modified Global Quality Index (GQI) for all the files that will be reviewed.

STUDY BIAS

Bias refers to any systemic error in the design, conduct or analysis of a study which results in estimates which deviate from the true values. The types of bias that are likely to occur in the study of this nature are sampling and information bias.

Sampling bias results from how the sample is selected and this will be minimised by systematically selecting every 10th preoperative evaluation form until the sample size is achieved.

Information bias is caused by errors in data which are collected in the study, or in analysis of the data. The following measures will be taken to minimise information bias: One year is considered long enough to assess the way in which the department conducts its functions; data will be collected correctly by the researcher; and the statistical analysis will be done by an independent statistician not involved in data collection.

ETHICAL CONSIDERATIONS

The study will only commence after permission is granted by the Dr George Mukhari Hospital Clinical Management and ethics approval by the Medunsa Research Ethics Committee (MREC) of the University of Limpopo. Confidentiality and anonymity of patient identifiers will be assured by group analysis of data.

BUDGET

Being a retrospective study, the financial input for the study will be:

Stationary	R 200
Printing at R1/page	R 300
Binding of thesis	R 2500
Total costs	R 3000

The study will be self- funded.

REFERENCES

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APPENDICES

Appendix 1. Example of Standard Preoperative evaluation form

Appendix 2. Preoperative evaluation form used at Dr George Mukhari Hospital

Example of the Data capture sheet