



---

**A STUDY ON EMINENCE VALUE, GUARANTEE AND MAINTENANCE IN  
OPERATION THEATRE WITH SPECIAL REFERENCE TO FORTIS MALAR  
HOSPITAL, CHENNAI**

1. **DR. VEERAMANIG ASTT. PROFESSOR, ARINGAR ANNA INSTITUTE OF MANAGEMENT STUDIES AND COMPUTER APPLICATION, PENNALUR, SRIPERUMPUDUR, CHENNAI.**
2. **DR. M SENTHIL, ASSISTANT PROFESSOR, PG & RESEARCH DEPARTMENT OF COMMERCE, SRI VIJAY VIDYALAYA COLLEGE OF ARTS AND SCIENCE, NALLAMPALLI, DHARMAPURI, TAMIL NADU- 636807**

**ABSTRACT**

Enhancing the efficiency of operating theatre has been always a challenging process especially in a quick changing healthcare sector with increased patient care complexity. Balancing the needs to satisfy surgeons, support staff, and meet the patient high expectations in healthcare would require clinical and cost effectiveness and require critical and close monitoring of business management inside the operating theatre to ensure efficient resource supply, guarantee quality safe care provided, and maintain fiscal sustainability. The current orthodoxy within patient safety research and policy is characterized by a faith in rules-based systems which limit the capacity for individual discretion, and hence fallibility. However, guidelines have been seen as stifling innovation and eroding trust. Our objectives were to explore the attitudes towards guidelines of doctors and nurses working together in surgical teams and to examine the extent to which trusting relationships are maintained in a context governed by explicit rules

**INTRODUCTION**

Art of surgery is created by the hands of a surgeon. These hands are of no use, if there is inadequate operation facilities. All surgical departments need a well-equipped Operation Theater (OT) to work with. The surgical departments save the precious life through operation. About fifty percent of hospital beds are allocated to surgical departments signifying its importance. With the introduction of super specialty services and gradual development in

operation technologies, the designing of operation theatre is becoming more sophisticated and complex in nature.

Enhancing the efficiency of operating theatre has been always a challenging process especially in a quick changing healthcare sector with increased patient care complexity. Balancing the needs to satisfy surgeons, support staff, and meet the patient high expectations in healthcare would require clinical and cost effectiveness and require critical and close monitoring of business management inside the operating theatre to ensure efficient resource supply, guarantee quality safe care provided, and maintain fiscal sustainability.

“Management of operating theatres requires the coordination of human and material resources in such a way that surgery can be performed efficiently, cost effectively, and safely”

(Plasters, 2003), within the rules of clinical governance of local and international standards.

The operating theatre (OT) is composed of five operating theatres in a dedicated for high standard clinical care before profitability private hospital. The theatre receives multiple varieties of surgical cases extending from minor to major ones and recently was licensed to conduct open heart surgeries.

### **Operating room equipment**

The operating table in the center of the room can be raised, lowered, and tilted in any direction. The operating room lights are over the table to provide bright light, without shadows, during surgery. The anesthesia machine is at the head of the operating table. This machine has tubes that connect to the patient to assist him or her in breathing during surgery, and built-in monitors that help control the mixture of gases in the breathing circuit.

The anesthesia cart is next to the anesthesia machine. It contains the medications, equipment, and other supplies that the anesthesiologist may need. Sterile instruments to be used during surgery are arranged on a stainless-steel table.

An electronic monitor (which records the heart rate and respiratory rate by adhesive patches) are placed on patient's chest. The pulse oximeter machine attaches to the patient's finger with an elastic band aid. It measures the amount of oxygen contained in the blood. Automated blood pressure measuring machine that automatically inflates the blood pressure cuff on patient's arm.

## **Surgeon and assistant's equipment**

People in the operating room wear surgical clothes to help prevent germs from infecting the surgical incision. The surgical clothing includes the following: a protective cap covering their hair, masks over their lower face, covering their mouths and noses, shades or glasses over their eyes, vinyl gloves on their hands, long gowns, protective covers on their shoes etc.

The current orthodoxy within patient safety research and policy is characterized by a faith in rules-based systems which limit the capacity for individual discretion, and hence fallibility. However, guidelines have been seen as stifling innovation and eroding trust. Our objectives were to explore the attitudes towards guidelines of doctors and nurses working together in surgical teams and to examine the extent to which trusting relationships are maintained in a context governed by explicit rules. While the creation of a “safety culture” requires a shared set of beliefs, attitudes and norms in relation to what is seen as safe clinical practice, differences of opinion on these issues exist which cannot be easily reconciled since they reflect deeply ingrained beliefs about what constitutes professional conduct.

## **OBJECTIVE OF THE STUDY**

1. Analyzing the various quality measures adopted and its effectiveness in providing patient safety without compromising the safety of the staff of the Operation Theatre in Fortis Malar Hospital.
2. Evaluating the knowledge of the OT staff on various standards of conduct during surgical procedures and Legislations to be followed in OT are examined.

## **NEED FOR STUDY**

Nowadays, operation theatres are becoming a busy place in every hospital. Safety and quality are to be maintained without compromising the safety of both patients and OT staff. In this occasion, periodical analysis and evaluation of quality measures adopted in the quality management of Operation Theatre is very much necessary.

This study looks into the various aspects of quality assurance in operation theatre and evaluates the current scenario to provide with suggestions and improvements to maintain top notch quality and safety.

---

## **SCOPE OF THE STUDY**

The scope of the study is not too far stretching to the whole of the Surgical Suite at FORTIS MALAR HOSPITAL, rather it only covers only the quality assurance parameters and quality practices in Operation Theatre.

## **LIMITATIONS OF THE STUDY**

There is a chance of further elaborating study on the same subject. Some information being very sensitive as far as organization is concerned is left untouched and not mentioned in any way. Top-level strategic type of decisions and information too are not taken under study to avoid any favor to the business counter parts.

## **REVIEW OF LITRATURE**

### **1. Safety in the operating theatre – Part 2: Human error and organisational failure**

Over the past decade, anaesthetists and human factors specialists have worked together to find ways of minimising the human contribution to anaesthetic mishaps. As in the functionally similar fields of aviation, process control and military operations, it is found that errors are not confined to those at the "sharp end". In common with other complex and well defended technologies, anaesthetic accidents usually result from the often-unforeseeable combination of human and organisational failures in the presence of some weakness or gap in the system's many barriers and safeguards. Psychological factors such as inattention, distraction and forgetfulness are the last and often the least manageable aspects of the accident sequence. Whereas individual unsafe acts are hard to predict and control, the organisational and contextual factors that give rise to them are present before the occurrence of an incident or accident.

### **2. Air quality and microbiologic contamination in operating theatres**

Andersen BM1, Røed RT, Solheim N, Levy F, Bratteberg A, Kristoffersen K, Moløkken I

The present study concerns the air quality and microbiological contamination in two newly built operating theatres; one with laminar air flow (LAF) equipment for cardio-thoracic operations, and one with conventional ventilation for urological operations. Both theatres had an identical number of air exchanges (17/h), identical microclimatic conditions and they employed the same cleaning procedures. In the LAF-ventilated operating theatre bacterial contamination of the air was effectively reduced to less than 10 colony-forming units

(CFU)/m<sup>3</sup> in all 125 samples (1 m<sup>3</sup> per sample) tested. In most samples, 118/125, the bacterial count was less than 5 CFU/m<sup>3</sup>, despite the presence of ten persons. The conventionally ventilated theatre reached values up to 120 CFU/m<sup>3</sup> during the most active period of the day when approximately seven persons were present.

### **3. The simulated operating theatre: comprehensive training for surgical teams**

R Aggarwal, S Undre, K Moorthy, C Vincent, and A Darzi

Surgical excellence is traditionally defined in terms of technical performance, with little regard for the importance of interpersonal communication and leadership skills. Studies in the aviation industry have stressed the role of human factors in causing error and, in an attempt to reduce the occurrence of adverse events, led to the organization of simulation-based training scenarios. Similar strategies have recently been employed for the surgical team with the development of a simulated operating theatre. This enables technical and non-technical performance of the surgeon and circulating staff to be assessed by experts situated in an adjacent control room, and provides an opportunity for constructive feedback. The scenarios have good face validity and junior surgeons can benefit from the process of learning new technical skills in a realistic environment.

## **RESEARCH METHODOLOGY**

### **Research Design:**

Research design is connection between what has been established and what is to be done in the conduct of the survey for the realization of the objective. This is a copy for collection and measurement of data. The research design used in this study is DESCRIPTIVE research design.

### **Selection of Study Area:**

Fortis Malar Hospital, Adayar, Chennai was selected for conducting the survey.

### **Sample Size:**

The sample size selected for this study is 100.

### **Sources of Data:**

The sources of data were primary as well as secondary.

### **Primary Data:**

Primary data are those, which collected for the first time. The researcher collected the data from the respondent by contacting them using questionnaire prepared for the study.

### **Secondary Data:**

This entails using documents, official records/statistics, diaries, articles, journals, books, newspapers, magazines and internet. All these will be sources to acquire the needed information. It is cost effective, gives access to data, permanency of data, open to public scrutiny, time saving, can be both qualitative and quantitative

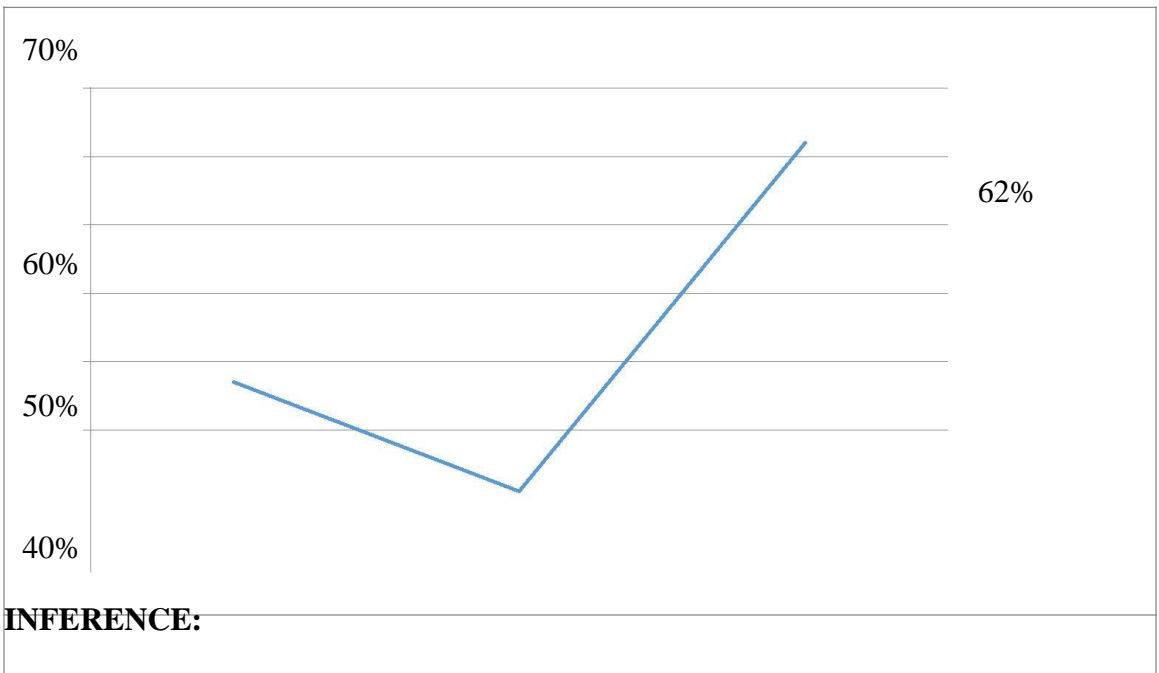
### **Methods of Data Collection:**

The data collection shall be done through the use of questionnaires developed within the framework of the literature on the factors that can influence ethical decision making in the work place, simple open and closed questions to allow the respondents the ability and freedom to give reliable answers. Semi structured interviews will also be used to complement the data collected from the questionnaire, and to arrive at reliable conclusions, so as to meet the research objectives.

**TABLE NO:1. ABBREVIATIONS USED IN THE CONSENT FORM**

S.NO	PARTICULARS	RESPONDENTS	PERCENTAGE
1	YES	27	27%
2	NO	11	11%
3	NOT SURE	62	62%
	TOTAL	100	100%

**CHART NO: 1. ABBREVIATIONS USED IN THE CONSENT FORM**



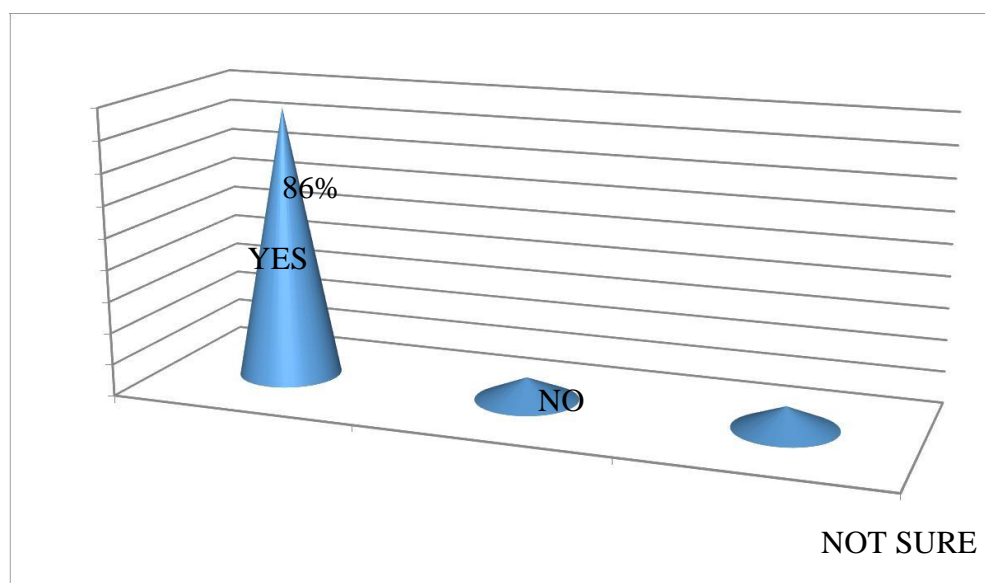
**INFERENCE:**

From the above table it can be inferred that 62% of the respondents are not sure about the abbreviations used in the consent form because it may have a medical terms.27% of the respondents are known about the abbreviations used in a consent form.11% of the respondents are not known about the abbreviations used in a consent form in a operation theatre. most of the respondents are not sure about the abbreviations used in the consent form because it may have a medical term.

**TABLE NO: 2.DATE OF THE SURGERY RECORDED ON THE CHECKLIST**

S.NO	PARTICULARS	RESPONDENTS	PERCENTAGE
1	YES	86	86%
2	NO	7	7%
3	NOT SURE	7	7%
	TOTAL	100	100%

**CHART NO: 2 DATE OF THE SURGERY RECORDED ON THE CHECKLIST**



**INFERENCE:**

From the above table it can be inferred that 86% of the respondents are said date of surgery recorded, only 7% of the respondents are said date of surgery is not recorded. Most of the respondents are said date of surgery recorded. Most of the respondents are said date of surgery recorded

**TABLE NO: 3 PATIENT CONFIRMED IDENTITY, SITE, PROCEDURE AND CONSENT BEFORE PROCEDURE**

S.NO	PARTICULARS	RESPONDENTS	PERCENTAGE
1	Strongly Agree	7	7%
2	Agree	57	57%
3	Neutral	24	24%
4	Disagree	12	12%
5	Strongly Disagree	0	0
	TOTAL	100	100%

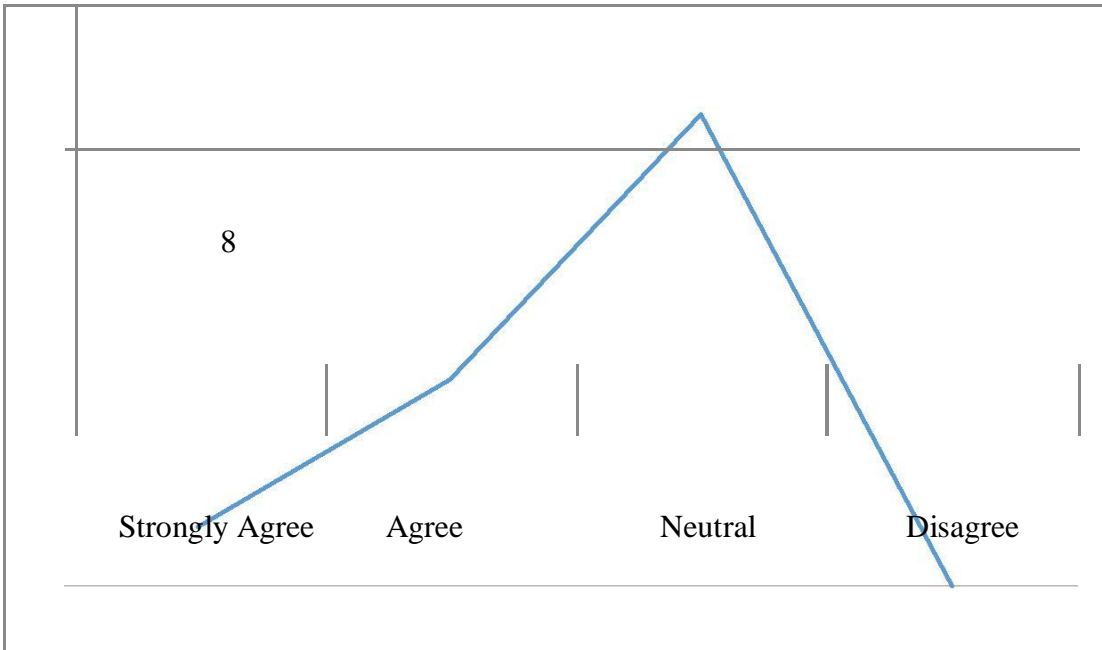


**TABLE NO: 4 SURGICAL SITE MARKED / NOT APPLICABLE CHECKED BEFORE PROCEDURE**

S.NO	PARTICULARS	RESPONDENTS	PERCENTAGE
1	Strongly Agree	8	8%
2	Agree	28	28%
3	Neutral	64	64%
4	Disagree	0	0%
5	Strongly Disagree	0	0%
	TOTAL	100	100%

## CHART NO: 4 SURGICAL SITE MARKED / NOT APPLICABLE CHECKED

### BEFORE PROCEDURE



### INFERENCE:

From the above table it can be inferred that 64% of the respondents are neutral about the surgical site marked / not applicable checked before procedure, 28% of the respondents agree that surgical site marked / not applicable checked before procedure. Most of the respondents are neutral about the surgical site marked / not applicable checked before procedure.

### FINDINGS

1. Most of the respondents are strongly agree that the consent form is available in operation theatre.
2. 43% of the respondents agree that the consent form is legible
3. Most of the respondents strongly agree that surgeon sign the consent form before operation
4. Most of the respondents are not sure about the abbreviations used in the consent form because it may have a medical term

5. 82% of the respondents said addressograph is present in checklist
6. Most of the respondents said date of surgery is recorded consent form
7. Most of the respondents agree that checklist is filed with the theatre documentation in the HCR
8. 57% of the respondents agree that patient identity, site, procedure and consent is confirmed before procedure
9. Most of the respondents are neutral about the surgical site marked / not applicable checked before procedure.
10. 64% of the respondents are neutral about the Anesthetic checklist completed before procedure

## **SUGGESTIONS**

1. Some respondents rated neutral that after the completion of the surgery the instrument, sponge and needle count are done after procedure. The instruments should be counted before and after the surgery for the safety of the patient and can be informed to the relations to avoid danger.
2. Only 27% of the respondents strongly agree that all team members introduced themselves before procedure. This shows that the team members are not introduced themselves to the respondents.
3. The sign in and sign out time are not recorded clearly and properly by all team members before procedure. The sign in and sign out can be recorded and verified for safety and also for future records. At the same time Pt. in time and out time recorded also to be properly in the case file
4. Some respondents are not aware that the OR is sterilized as per the SOP after every procedure. The hospital can note that whether the OR is sterilized as per the SOP after every procedure for the safety of the patients

## **CONCLUSIONS**

The study on the quality assurance in OT has been a great success. The data collected shows that almost all the staff are well trained in terms of quality and safety measure adopted in the

---

surgical suite.

However, a few of the staff members in the OT has been found lacking proper training or knowledge in terms of SOP, quality monitoring and the code of conduct in OT. This is evident from the analytical observations conducted using the survey method. The hospital administration should give more importance to the training of the OT staff on quality control and safety measures. As a whole, Fortis Malar Hospital has a well-equipped, properly maintained OT for the needs of the patients, and is fully capable of delivering safe and quality service.

## **BIBLIOGRAPHY**

1. Baulcomb, J.S., (2003). Management of change through focused force field analysis. *Journal of Nursing Management*, 11:275-280.
2. Butler, M., Boxer, E. & Sutherland-Fraser, S. (2003). The factors that contribute to count and documentation errors in counting. *ACORN Journal*, 16(1): 10-14.
3. Calms, S.H. & Shusterich, K.M. (1992). Operating room management: what goes wrong and how to fix it. *Physician Executives*, Nov-Dec
4. Christian, C. K. (2006). A prospective study of patient safety in the operating room. *Surgery*, 139: 159-173.
5. Dexter, F. & Traub, R.D. (2002). How to schedule elective surgical cases into specific operating rooms to maximize the efficiency of use of operating room time. *Anesth Analg*, 94: 933-942.
6. Dexter, F., Wachtel, R. & Epstein, R. (2011). Event-based knowledge elicitation of operating room management decision-making using scenarios adapted from information systems data. *BMC Medical Informatics and Decision Making*, 11: 2-13.
7. Dexter, F., Abouleish, A., Epstein, R., Whitten, C. & Lubarsky, D. (2003). Use of operating room information system data to predict the impact of reducing turnover times on staffing costs. *Anesth Analg*, 97: 1119-1126.
8. Dexter, F., Epstein, R., Traub, & Xiao, Y. (2004). Making management decisions on the day of surgery based on operating room efficiency and patient waiting times. *Anesthesiology*, 101: 1444-1453.

9. Dexter, F., Ledolter, J. & Wachtel, R. (2005). Tactical decision making for selective expansion of operating room resources incorporating financial criteria and uncertainty in subspecialties' future workloads. *Anesth Analg*, 100: 425- 432.
10. Epstein, R. & Dexter, F. (2009). Economic analysis of linking operating room scheduling and hospital material management information systems for just-intime inventory control. *Anesth Analg*, 91:337-343.
11. Gibbs, V., McGrath, M. & Russell, T. (2005). The prevention of retained foreign bodies after surgery. *Bulleting of American College of Surgeons*, 90(10): 12-14.
12. Greenall, P. (2004). Managerial process: the reflective practitioner. *Leadership in Health Services*, 17(3): viii-xii.
13. HSE. (2009) *Improving our services: a user's guide to managing change in the health service executives*. Dublin.