

Start time delays in operating room: Different perspectives

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ABSTRACT

Background: Healthcare expenditure is a serious concern, with escalating costs failing to meet the expectations of quality care. The treatment capacities are limited in a hospital setting and the operating rooms (ORs). Their optimal utilization is vital in efficient hospital management. Starting late means considerable wait time for staff, patients and waste of resources. We planned an audit to assess different perspectives of the residents in surgical specialities and anesthesia and OR staff nurses so as to know the causative factors of operative delay. This can help develop a practical model to decrease start time delays in operating room (ORs). **Aims:** An audit to assess different perspectives of the Operating room (OR) staff with respect to the varied causative factors of operative delay in the OR. To aid in the development of a practical model to decrease start time delays in ORs and facilitate on-time starts at Jai Prakash Narayan Apex Trauma centre (JPNATC), All India Institute of Medical Sciences (AIIMS), New Delhi. **Methods:** We prepared a questionnaire seeking the five main reasons of delay as per their perspective. **Results:** The available data was analysed. Analysis of the data demonstrated the common causative factors in start time operative delays as: a lack of proper planning, deficiencies in team work, communication gap and limited availability of trained supporting staff. **Conclusions:** The preparation of the equipment and required material for the OR cases must be done well in advance. Utilization of newer technology enables timely booking and scheduling of cases. Improved inter-departmental coordination and compliance with preanesthetic instructions needs to be ensured. It is essential that the anesthesiologists perform their work promptly, well in time and supervise the proceedings as the OR manager. This audit is a step forward in defining the need of effective OR planning for continuous quality improvement.

Key words: Delay, operative, perspectives, start time

INTRODUCTION

The need to improve quality of health care is substantial. The purpose of monitoring quality of care is to learn and improve. Improvement is facilitated when providers regularly review performance, design intervention to improve and create a team to implement the intervention. Starting of the first procedure scheduled for the day on time plays a crucial role in setting the tone for how an operating room (OR) functions. Inability to do so often affects the overall mood and support for performing all

the cases in the room efficiently. Improving quality of care while reducing costs should be a major strategic priority for health care organisations. Waste and inefficient use of resources on such a scale when there are waiting lists for surgery is inappropriate utilization of resources. The audit was carried out to assess different perspective as to the sources of operative delay which can help develop a practical model to decrease start time delays in ORs and facilitate on-time starts at Jai Prakash Narayan Apex Trauma centre (JPNATC), All India Institute of Medical Sciences (AIIMS), New Delhi.

METHODS

An operation is defined here to start after anesthesia. Hence, the operational definition of start time is at the time of the incision. The delay in start time was defined as the start time of the incision minus the official start time. We distributed a questionnaire to all the residents of surgical specialities, anesthesia and operation theatre

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staff nurse and asked them to state five main reasons of delay as per their perspective. Permission from all departmental heads was taken before involving the residents and nursing staff.

A total of 90 questionnaires were distributed. Of the 90 subjects, 35 were staff nurses of the operation theatre, 35 resident doctors of various surgical specialities and 20 anesthesiology residents of JPNATC. The name of the subjects was kept confidential. The five main reasons in order of frequency were considered for analysis. The database was created and analysed using Microsoft Excel.

RESULTS

Of the 90 questionnaire distributed, 80 responded, 30 staff nurse responded, 30 surgical residents and all the 20 anesthesiology residents participated in the audit [Table 1 and Figures 1-3].

Anesthesiologists' perspective

The audit revealed that 60% anesthesiology residents were of opinion that noncompliance of preanesthetic checkup (PAC) orders is the reason for start time operative delay. Fifty percent said lack of team work and communication gap, 44% opined late arrival of surgery residents for start time operative delay. Thirty-eight percent were of the opinion that lack of proper planning and 34% cited limited availability of trained supporting staff for start time operative delay.

Surgeons' perspective

The audit revealed that 66% surgery residents felt lack of preparation of operation theatre on time is responsible for start time operative delay. Forty-four percent opined limited availability of trained supporting staff for start time operative delay. Twenty-eight percent said PAC been

reviewed in immediate preoperative period for start time operative delay. Twenty-four percent opined lack of team work and communication gap and 22% were of the opinion that lack of proper planning is responsible for start time operative delay.

Nurses' perspective

The audit revealed that 60% nursing staff felt limited availability of trained supporting staff is responsible for start time operative delay. Forty-four percent opined lack of team work and communication gap for start time operative delay. Forty-two percent said lack of proper planning for start time operative delay. Forty percent were of the opinion that patient positioning, monitor attachment, cautery application, intravascular access, invasive monitoring establishment consumes substantial amount of time before surgery can start. Twenty-two percent cited PAC being reviewed in immediate preoperative period and late arrival of surgery residents for start time operative delay.

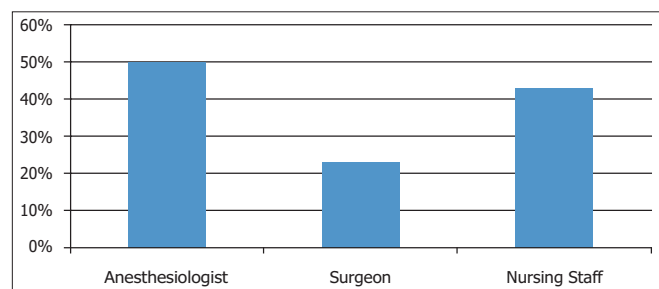


Figure 1 : Lack of team work and communication gap

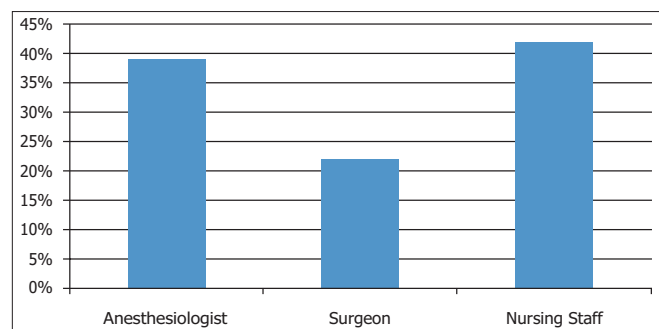


Figure 2 : Lack of proper planning

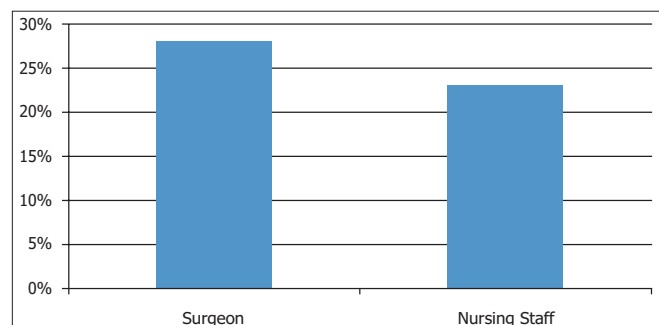


Figure 3 : PAC review in pre-operative period

Table 1: Reasons for operative delays

- Limited availability of trained supporting staff
- Lack of team work
- Communication gap
- Improper planning
- Time spent in patient positioning, monitor attachment, cautery application, securing intra vascular access, establishment of invasive monitoring
- PAC done in pre operative area just prior to cases
- Non compliance of PAC orders
- Surgery residents arriving late
- Equipment problem and malfunction
- Waiting for consultant (incharges) of various specialities to start cases
- Lack of timely OR preparation

DISCUSSION

Previous studies have set target or benchmark times for anesthesia induction and surgical preparation and have investigated reasons for delay in induction.^[1,2] Overdyk *et al.*^[1] set a target time of 15 min for anesthesia induction and 10 min for surgical preparation. Their results showed approximately 20-25 min and 25 min for anesthesia induction and surgical preparation, respectively, resulting in 45-50 min from patient entrance to incision, on average. Zafar *et al.*^[2] set benchmarks of “anesthesia ready” time (i.e., the time from monitor application for the patient to be “anesthesia-ready”) as 15 min for American Society of Anesthesiologists (ASA) class I and II patients and 30 min for ASA III and IV patients, 15 min for spinal anesthesia, 20 min for epidural anesthesia and an additional 15 min for each invasive procedure such as arterial line or central venous (CV) line insertion. They reported that 78.3% of procedures were within the benchmark.^[2]

From the time a patient enters the OR, anesthesiologists, surgeons, and OR nurses work together in a well organized team in order to start surgery promptly and smoothly. Anesthesiologists are in charge of most of the work that must be done during this time, such as inserting an IV line, intubation, epidural catheterization, CV catheterization and patient positioning. In addition, due to advances in surgical technology, e.g., endoscopy, navigation systems and intraoperative monitoring, more time is needed for surgical preparation. Sometimes equipment malfunction causes substantial time delays until incision. As shown in the present study, the main reasons for operative delay were almost the same. Lack of proper planning, lack of team work and communication gap and limited availability of trained supporting staff were the common reasons of start time operative delay. The supporting staff are usually required for shifting the patients inside and outside the operation theatre, positioning of the patient, cleaning of OR, disinfection of OR and other activities which are necessarily required before a surgery can start. The supporting staff is usually untrained and their lack of experience and accountability contributes to start time operative delays. The surgeons are often of opinion that PAC contributes little to the final outcome of surgical procedure and they do not comply with preanesthetic instructions. This leads to cancellations of posted cases in immediate preoperative period and considerable time is wasted reviewing the PAC. At times,

the planning (including arrangement of blood and blood products, microsurgical instruments, implants) required for a specific surgical procedure is inadequate which consumes a lot of time before a surgery is initiated. Even the sequence in which the patient are posted for surgery is not strictly followed at times and thus it creates a confusion leading to waste of time before a surgery starts. The communication gap among anesthesiologists, surgeons and nursing staff and lack of teamwork spirit consumes a lot of valuable time before a surgery can proceed.

The present audit has few limitations. First of all, these are different perspectives and did not have detailed time periods or detailed descriptions of procedures performed, such as the use of arterial lines and CV lines, but reflected only the entrance-to-incision time. Secondly, we did not measure the actual time duration spent on each procedure. Thirdly, the present audit was performed in a teaching hospital, in which teaching and training of medical students and residents are carried out. The results may differ from those in nonteaching hospitals.

The preparation of the equipment and required material for the OR cases must be done well in advance. Utilization of newer technology (fiberoptic, ultrasound, computerization, sterilisation systems) enables timely booking, adequate orderly preparation and scheduling of cases. Improved inter-departmental coordination and compliance with preanesthetic instructions needs to be ensured. It is essential that the anesthesiologists perform their work promptly, well in time and supervise the proceedings as the OR manager. This audit is a step forward in defining the need of effective and organized OR planning for continuous quality improvement.

REFERENCES

1. Overdyk FJ, Harvey SC, Fisherman RL, Shippey F. Successful strategies for improving operating room efficiency at academic institutions. *Anesth Analg* 1998;86:896-906.
2. Zafar SU, Khan FA, Khan M. Standardization of anaesthesia ready time and reasons of delay in induction of anaesthesia. *J Pak Med Assoc* 2006;56:112-5.

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