

Retrospective Analysis on Preoperative Area Waiting Period

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Received: January 2020

Accepted: January 2020

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ABSTRACT

Background: The operation theatre (OT) complex is a area of hospital activity that requires maximum utilization in an efficient way to ensure optimum health benefit. Its efficient utilisation require multidisciplinary team work especially supporting services especially in emergency o.t setups where life saving procedures are done. **Methods:** A audit was conducted in a tertiary care centre where 2,115 patients over period of 4 months were included in the study which came as operative emergencies under various specialties like Orthopedics(OS), General surgery(GS), Neurosurgery(NS), Pediatric surgery(PS), Ent, Plastic and Burns(PB). Overall average waiting time period for shifting from preoperative area to operation theatre taken and average time under each speciality individually. **Results:** Overall average shifting time taken 147.02 minute, with maximum waiting period for orthopaedics which was 172.04 whereas minimum taken by ENT which was 60min. **Conclusion:** We conclude that patient requiring surgical emergency operative procedure should have minimum waiting period in preoperative area by working on avoidable reasons for delays and improve health care service.

Keywords: Surgical emergency, preoperative area, waiting period.

INTRODUCTION

Healthcare quality is an important factor affecting surgical outcome and patient prognosis. Patients undergoing emergency surgery requires immediate attention and services as they are at high risk of adverse outcomes. A key principle of provision of an acute surgical service is establishment of an efficient emergency theatre dedicated to acute surgery.^[1] The efficient running of an emergency theatre is dependent upon appropriate assessment and prioritization of patients for surgery in order to determine the priority of one case over the other. Lack of prioritization of emergency services may in the longer term prove to be more expensive due to increased length of stay and increased complications due to treatment delays. Competing demands for resources have resulted in emergency department delays, reduced bed availability and reduced emergency theatre access.^[2]

Reduction in Surgical wait time from preoperative waiting area to operation theatre forms part of efficient hospital management. The audit was carried

out to assess average duration of waiting period in shifting of patient from preoperative waiting area to operation theatre, so that efforts can be made to provide healthcare in a efficient and faster way by focusing on preventable reasons to decrease start time delays in operation theatre.

MATERIALS AND METHODS & RESULTS

A retrospective study analyzing time taken from arrival of patient to shifting of patient from preoperative waiting area to operation theatre scheduled emergency surgery was performed as a part of the process of quality assurance and self-audit in the setting of an tertiary care hospital.

Being a quality assurance audit, Ethics Committee approval was not required.

Records were audited by designated data collectors in the pre-operative care unit.

A total of 2,115 patients over period of 4 months were included in the study which came as operative emergencies under various specialties like Orthopedics(OS), General surgery(GS), Neurosurgery(NS), Paediatric surgery(PS), Ent, Plastic and Burns(PB). Following parameters were calculated

- 1) Overall average waiting time period for shifting from preoperative area to operation theatre taken for total number of patients.

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- 2) Average patient waiting time period for shifting from preoperative area to operation theatre taken under each speciality.

After collecting data, overall average shifting time taken observed for total number of patients was 147.02 minutes.

Maximum average shifting time was observed for patients getting operated under speciality of orthopaedics which was 172.04 min whereas minimum shifting time period was observed for ENT patients which was 60min.

Orthopaedics: emergencies like # Humerus, #BB upper limb, #Septic arthritis, # Femur # BB lower limb etc whereas under ENT : cut throat , foreign body aspiration ,trauma, tracheostomy etc were dealt.

For other respective departments average waiting time period in preoperative area were as follows

General surgery: 131.08 min emergencies like Intestinal perforation, acute appendicitis, Intestinal Obstruction, Amputation, Debridement etc

Neurosurgery: 130min: emergencies like Hydrocephalus, Extradural hemorrhage, subdural hemorrhage, MMC etc

Pediatric surgery: 107.38 min: emergencies like Tracheosophageal fistula, stoma closure, exploratory laprotomy, ileostomy etc

Burns and Plastic: 146.47 min: emergencies like Electric burns, Crush injury, Amputation, # Mandible etc

DISCUSSION

Important aspect in emergency surgery is identifying patients that need surgery urgently and determining how quickly. The delays in accessing theatre in a timely fashion is a reflection of the combination of lack of theatre space available combined with a high number of actual high priority cases.^[3]

Since availability of operation theatre in minimum possible time period is of utmost important for improving patient's outcome and quality of care, we audited data of 2,115 posted for emergency surgery in our study.

	Overall	Orthopaedics	ENT
Time Period (min)	147.02	172.04 (max)	60(least)

Comparing and finding out difference between maximum and minimum waiting period observed between individual specialities was 112.04 min, which could have been possibly due to patient overload under orthopaedics speciality being more where total number of surgeries done were 726, as compared to ENT unit where total number of emergencies operated were only 32 during specified duration. Also orthopaedic surgeries like long bone fractures more likely to require more surgical time period whereas ENT emergencies like tracheostomy likely to be done in lesser duration of time.

Waiting period for O.t shifting can be due to various avoidable and unavoidable reasons. Masurskyet al4 demonstrated that surgeons usually overestimate the amount of time it takes to turnover an OR over but that anesthesiologists were overall unbiased.⁴ In our study overall average waiting and shifting time from preoperative area to o.t was 147.02min.

Reasons of the delays related to turn over time gives a broader picture of the contributing factors that affect OR efficiency .⁴ Since exact reason for delay was not available some avoidable factors which could have possibly contributed to waiting are as follows :

- Non availability of O.t.
- Preparation of patients.
- Limited availability of trained supporting staff.
- Lack of team work.
- Communication gap.
- Improper planning.
- PAC done in pre-operative area just prior to cases.
- Noncompliance of PAC orders.
- Surgeon arriving late.
- Equipment problem and malfunction.
- Consent not given preparation of patients.
- Awaited lab reports.
- Cleaning after emergency surgeries takes more time as there is a higher probability of patients being more sick, more infected.

Turn over time, is influenced by patient co morbidities (ASA class), preceding surgery, succeeding surgery, time of surgery, and order of

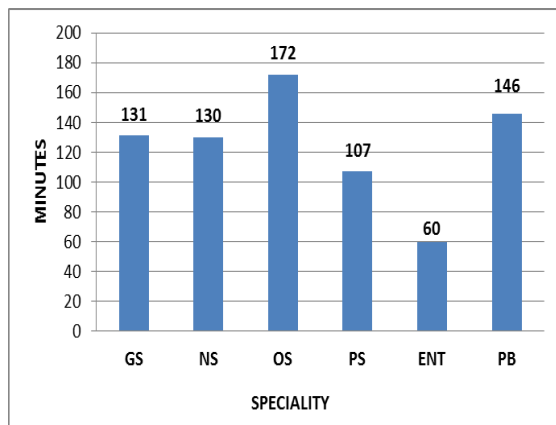


Figure 1: Average waiting time in minute speciality wise.

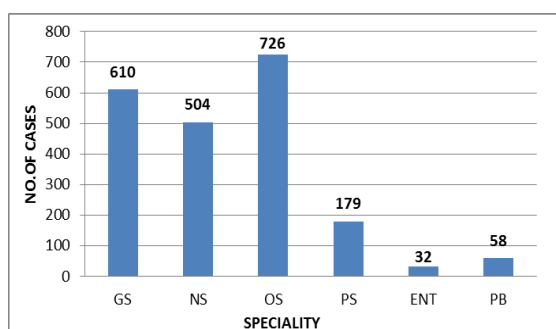


Figure 2: No. of emergency cases under each speciality.

OR cases.^[5] ASA Class 1 and Class 2 patients had significantly shorter turnover times than ASA Class 3 patients.^[5]

We can also assume another possible reason that patients were shifted to preoperative area for a certain period before surgery so that enough time is available for preanaesthetic check-up, optimization, preparation, plan of management for patient.

Another area of concern with delays is cost and expenditure. Operating rooms in tertiary care hospitals are capital intensive units, with expensive equipments and highly skilled staff. Starting too late means considerable wait time for staff and patients. Waste and inefficiency on such a scale when there are waiting lists for surgery should be unacceptable. It is probably meaningful to suggest that time-saving measures should incur less cost on the hospital, since they relieve the hospital from the responsibility of supporting excess cost of equipment use and additional staff.

Waiting can lead to patients sensing a loss of control which can magnify feelings of anxiety from which they may already be suffering. Mohan et al. (2011) referred to patient satisfaction as patients' emotions, feelings and their perception of delivered healthcare services.^[6]

To increase the surgical management in any hospital it is essential that operation theatre time should be well utilised and managed.^[7]

Identifying causes of delays and proposing corresponding solutions can be done and same can be used when encountering above mentioned concerns.

Review of the literature reveals that hospitals have employed various approaches to accomplish this including: punitive measures such as loss of allocated block time, motivational pleas to employees through formal presentations, and even specialized task forces dedicated to ensuring on-time starts.^[8,9]

The availability of surgeons in the OR also affects turnover time positively as surgeons were observed to motivate and assist staff with their duties.^[10]

Soliman et al noted that active involvement of surgeon in patients changeover has surely improved OR efficiency and reduced Turn over time.^[11]

The supporting staff also can account for start delays as they are usually required for cleaning of OR and disinfection in between surgeries, shifting the patients inside and outside the operation theatre, positioning of the patient and other. This issue can be avoided by providing better training and making them work under effective guidance.

Equipment and pharmacy readiness can be done by increased efficiency and training of o.t technicians and central supply personnel.

Instrumental availability delays can be avoided by preparation of more procedure specific sets better option rather than surgeon specific sets, Stringing of surgical instruments at the end of a case so that

alignment and assembling reduces set up time after counting and cleaning.

Providing additional emergency o.t and additional staff in case of patient overload with limited availability of manpower and resources scenario.

Better communication, proper planning and working together in a team manner anesthetist, surgical, nursing and trained supporting staff together can help in preventing treatment delays and deterioration of patient's health status.

The limitations seen in our audit was that we only observed waiting time period of patient in preoperative area under each speciality, exact reason for delay in o.t availability was not recorded due to lack of documentation.

CONCLUSION

In our study we conclude that time patient had to wait in preoperative area for o.t availability for surgical emergencies should be minimum possible and efforts should be made to provide and improve medical care for patients undergoing for surgical emergencies by better utilization of available resources in earliest possible manner to reduce morbidity and mortality.

Maximizing patient satisfaction is one of the strongest determinant quality of hospital functioning and satisfaction is not only implied by treatment outcomes but also with the non-clinical aspects of patient experiences. In preoperative waiting area managing anxiety, fear, pain, better communication, personal attention, staff accountability can help in more acceptable and sustainable levels of patient satisfaction.

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How to cite this article: Dalal N, Jain M, Bamba C. Retrospective Analysis on Preoperative Area Waiting Period. *Ann. Int. Med. Den. Res.* 2020; 6(2):AN22-AN25.

Source of Support: Nil, **Conflict of Interest:** None declared