

## ORIGINAL ARTICLE

# Causes of Postponement of Pediatric Surgical Cases on Elective Operation Theatre List

MUHAMMAD KASHIF BASHIR<sup>1</sup>, JAMSHAI D JAVED<sup>2</sup>, RUBAB AMEER<sup>3</sup>, HAMNA KHAN<sup>4</sup><sup>1</sup>Assistant Professor, Department Of Pediatric Surgery King Edward Medical University / Mayo Hospital Lahore<sup>2</sup>Medical Officer Trauma ICU, Aziz Bhatti Shaheed Teaching Hospital Gujrat<sup>3</sup>Woman Medical Officer Basic Health Unit Panjgirain District Bhakkar<sup>4</sup>FCPS, Community Medicine, Khyber Medical College

Correspondence to: Jamshaid Javed, Email: JamshaidJS10@gmail.com

## ABSTRACT

**Aim:** To establish factors resulting in postponement of patients on elective operation theatre list.

**Material and Methods:** The design of this study was Prospective observational study. This study was conducted at department of pediatric surgery King Edward medical university / Mayo hospital Lahore from October 2019 to October 2021. Elective operation theatre list is made one day before elective operation theatre list. Patient information regarding diagnosis and possible cause of postponement was noted on prescribed proforma.

**Results:** The total number of scheduled cases was 3900 (Average of 15 cases per list). Out of these 3545(90.9%) patients got operated while the remaining 355(9.1%) patients were postponed due to different reasons. Thus, the overall rate of postponement was 1.36 patients per list. Out of these 355(n=1) postponed cases, 160(45.1%) cases were cancelled due to operation theatre related reasons like shortage of surgical instruments, medicine and linen. 120(33.8%) patients were postponed due to reasons directly related to patients and parents. 65(18.3%) cases postponed due to shortage of man power. 10 (2.8%) patients, were postponed due to unscheduled holiday and power breakdown of operation theatre.

**Conclusion:** Postponement of patients from elective surgery list is avoidable. Timely optimization and team work can reduce these issues.

**Keywords:** postponement, elective operation theatre list, pediatric surgery.

## INTRODUCTION

Surgery is a very stressful experience both for surgeons and patients<sup>1</sup>. Postponement of a scheduled surgical procedure creates an emotional trauma to patient and family as well<sup>2,3</sup>. It increases burden on health care establishment. Postponement of elective surgical procedures results in prolonged hospital stay as well as wastage of hospital resources. The rate of postponement is different in different regions<sup>4</sup>. It is estimated to be in between 9-40%<sup>5</sup>. Elective surgical procedures are cancelled due to insufficient operation theatre timings and non-availability of surgeons or anesthetists. Attitudes of parents and patients also affect postponement of scheduled surgical cases. Department of pediatric surgery King Edward Medical University/ Mayo hospital Lahore Pakistan is a parent department for pediatric surgical interventions in province of Punjab. Our department is overburdened and patients on elective surgery list are very frequently postponed. We are running 4 fully equipped operation theatres and 3 major elective operation theatre lists in a week. Previously many studies have been conducted to rule out reasons for postponement of elective surgical cases in adults, but a very small data is available at pediatric age group patients especially in our country. There is a need to assess these problems and to set standards to reduce misery of patients and their families and to improve healthcare system.

## MATERIALS AND METHODS

This prospective observational study is conducted at department of pediatric surgery King Edward medical university / Mayo hospital Lahore from October 2019 to October 2021. In our department elective operation theatre list is prepared after consultant round a day prior to operation theatre list. Postponement was defined as cancellation of a scheduled elective surgical procedure on the day of operation. Any operative case scheduled for elective operation theatre list was included in this study. Minor surgical procedures performed daily in minor operation theatre were excluded from this study. A prescribed Proforma was made giving patients information, surgical procedure planned and possible cause of postponement was noted. No special consent from parents was needed for this study.

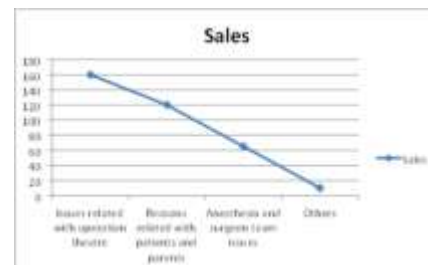
## RESULTS

During study period of two years a total of 260 operations were performed on elective operation theatre in department of pediatric

surgery mayo hospital Lahore. The total number of scheduled cases was 3900(Average of 15 cases per list). Out of these 3545(90.9%) patients got operated while the remaining 355(9.1%) patients were postponed due to different reasons. Thus, the overall rate of postponement was 1.36 patients per list. Out of these 355(n=1) postponed cases, 160(45.1%) cases were cancelled due to operation theatre related reasons like shortage of surgical instruments, medicine and linen. In some cases it was also noted that shortage of operation theatre time also results in postponement of elective surgery patients. 120(33.8%) patients were postponed due to reasons directly related to patients and parents as well. These reasons include chest infections, cardiac problems, anemia and non-arrangement of blood. In some cases it was also noted that parents refused for surgical procedure. In our study 65(18.3%) cases postponed due to anesthesia and surgeon team related problems like shortage of man power. In 10 (2.8%) patients, cases were postponed due to other causes like unscheduled holiday and power breakdown of operation theatre.

Table 1: Total No of Cases Postponed: 355(n=1)

No	Reasons of postponement of elective cases	No of cases	percentage
1	Issues related with operation theatre	160	45.1
2	Reasons related with patients and parents	120	33.8
3	Anesthesia and surgeon team issues	65	18.3
4	Others	10	2.8
	Total	355	100



Graph Showing Causes Of Postponement

## DISCUSSION

There are many factors resulting in postponement of patients from elective operation theatre list. This postponement results in psychosocial effects on pediatric patients. It also results in socioeconomic and financial problems of parents due to prolonged hospital stay<sup>6, 7</sup>. Postponement results in wastage of valuable resources including theatre time and limited hospital beds<sup>8</sup>. In our study rate of postponement of elective surgery patients was found to be 1.36%. It is comparable with other national and international studies. Study conducted at Agha Khan university hospital Karachi showed 4% cancellation rate<sup>9</sup>. One study at Ayub medical college Abbottabad showed 25% cancellation rate and other in Ganga Ram hospital showed 5.8% cancellation rate<sup>10, 11</sup>. An international study conducted by Haana et al from Australia have reported cancellation rate of 7.2% of all scheduled operation cases from elective operation theatre list. In our study most important cause of postponement was found to be due to operation theatre related issues 160(45.1%). Among these reasons most important was shortage of time. A study conducted in general surgery ward in Mayo hospital Lahore showed 35.7% cases postponed due to shortage of operation theatre timings<sup>12</sup>. Other international studies also showed similar results<sup>13-15</sup>. In our department operation theatre list is usually made to accommodate maximum patients but still there are factors that prolong estimated time for each operative case like cleaning of tables, shortage of Lenin and operation theatre medicine. An operation theatre in such a specialized pediatric surgery centre should follow international standards in shifting patients from ward to operation theatre to reduce time wastage. An international study showed 65.2% cases cancelled due to shortage of time<sup>16</sup>. Time consumption for each surgery is different for different surgeons. Usually trainee surgeons take more time than an expert consultant surgeon. Ogden et al showed that 27% cases are cancelled due to shortage of time<sup>17</sup>. So all these points should be considered while finalizing elective operation theatre list. Operation theatre in charge sister is responsible for managing operation theatre. She should be trained and up to date with operation theatre related issues resulting in postponement of elective surgeries.

In our study second most important cause of cancellation was directly related to patients and parents as well. In our study mostly patients were postponed due to chest infection and cardiac problems. There should be proper pre operative anesthesia assessment to reduce undue cancellation. There should be multidisciplinary team to optimize patients before taking them for elective operation theatre list. In our study some patients were also cancelled because of refusal of parents for surgical procedure. This was because parents were not properly counseled for surgical procedures. In some cases blood was not arranged in major surgical procedures. This factor can be minimized by proper communication with parents of patients. In our study third most important case resulting in postponement of elective surgery cases was shortage of human resources. 65(18.3%) cases were postponed due to anesthesia and surgeon team related problems. This is the duty of list in charge to mark every case by a surgeon and timely inform theatre in charge sister to arrange man power on operation theatre list. In our study 10 (2.8%) patients, cases were

postponed due to other administrative causes like unscheduled holiday, power and oxygen breakdown of operation theatre. Study conducted by Zahi Almajali found cancellation rate of 6.4% due to administrative causes<sup>18</sup>.

## CONCLUSION

Postponement of patients from elective surgery list is avoidable. Timely optimization and team work can reduce these issues.

## REFERENCES

1. Kumar R, Gandhi R. Reasons for cancellation of operation on the day of intended surgery in a multidisciplinary 500 bedded hospital. *J Anaesth Clin Pharmacol*. 2012; 28(1): 66-69.
2. Macario A. Is your operating room efficient? A scoring system with eight performance indicators. *Anesthesiology* 2006 Aug; 105(2):237-40.
3. Aafar A, Mufti TS, Griffin S, Ahmed S. Cancelled elective general operations in Ayub Teaching hospital. *J. Ayub Med Coll Abbottabad* 2007; 19(3): 64-66.
4. Robb WB, O'Sullivan MJ, Brannigan AE, Bouchier-Hayes DJ. Are elective surgical operations cancelled due to increasing medical admissions? *Irish J Med Sci*. 2004 Jul-Sep; 173(3):129-32.
5. EL-Dawlatly A, A Turkistani A, Aldohayan A, et al. Reasons of cancellation of elective surgery in a teaching hospital. *Int J Anaes* 2007; 15(2).
6. Garg R, Bhalotra AR, Bhadoria P, Gupta N, Anand R. Reasons for Cancellation of Cases on the Day of Surgery-A Prospective Study. *Indian J Anaes* 2009; 53:35-9.
7. Nasr A, Reichardt K, Fitzgerald K, et al. Impact of emergency admissions on elective surgical workload. *Ir J Med Sci* 2004; 173: 133-35.
8. Hussain AM, Fauzia A, et al. Anesthetic reasons for cancellation of elective surgical inpatients on the day of surgery in a teaching hospital. *J PMA* 2005;55(9):374-8.
9. Boudreau SA, Gibson MJ. Surgical cancellations: a review of elective surgery cancellations in a tertiary care pediatric institution. *J Perianesth Nurs*. 2011; 26:315-322.
10. Afzal F, Asad N, Ali K. Causes of postponement of elective surgery in mayo hospital Lahore; *Biomedical* 2010; 26: 148-51.
11. Vinukondaiah K, Ananthakrishnan N, Ravishankar M. Audit of operation theatre utilization in general surgery. *Natl Med J India* 2000; 13(3):118.
12. Bent S, Sherrier M, Peters M, et al. Analyzing first-case starts utilizing process engineering techniques. *Can J Surg* 2010; 53: 167-70.
13. Testi A, Tanfani E, Torre G. A three-phase approach for operating theatre schedules. *HealthCare ManagSci* 2007; 10(2): 163-72.
14. Ogden GR, Kershaw AE, Hussein I. Use of theatre time for dentoalveolar operations under general anaesthesia. *British Journal of Oral and Maxillofacial Surgery* 2000; 38:331-4.
15. Almajali Z, Bataresh E, Dagia M, Safadi E, Elnabulsi B. The reasons for cancellation of elective paediatric surgery cases at Queen Rama Al Abdullah children hospital; *J RMS* Sept 2015; 22(3):18-22.
16. Mypet CD. An audit of the use of ophthalmic theatre time. *Community Eye Health* 2002; 15:62-63.
17. B Cavalcante, Pagliuca LMF, Almeida PC. Cancellation of scheduled surgeries in a School hospital: an exploratory study. *Rev Latinoam Enfermagem* 2000 July-August; 8 (4): 59-65.
18. Almajali Z, Bataresh E, Dagia M, Safadi E, Elnabulsi B. The reasons for cancellation of elective paediatric surgery cases at Queen Rama Al Abdullah children hospital; *J RMS* Sept 2015; 22(3):18-22.