

The Reasons for Cancellations of Elective Pediatric Surgery Cases at Queen Rania Al-Abdullah Children Hospital

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ABSTRACT

Objectives: To investigate the rate and the reasons of cancellation of elective pediatric surgery in our hospital and to formulate possible suggestions to minimize it.

Method: This is a retrospective study conducted between 1st of July 2012 to the 30th of June 2013. The study population included all patient listed in the operating list in the day before surgery. Cancelled case we defined as a case listed on operating list and did not undergo surgery on scheduled time during the same period. Data collected from operating room data base and from incident report for cancellation of surgery for each cancelled case. The data collected was analyzed to define the reasons for cancellation in our hospital.

Results: During the study period 6061 patients were scheduled for elective surgery. More than 50% of them were scheduled by general pediatric division. Four hundreds and ninety cases were canceled on the day of surgery making the cancellation rate of 8%. The highest cancellation rate (16.7%) was reported by ophthalmology department while lowest rate (2.8%) was reported by ENT department. patient related reasons were the commonest (69.8%). the commonest reasons were non- attendance on the day of surgery, followed by the presence of acute illness. treating surgeon related reason counted for 23.8% of cancellation. incomplete work up, no need for surgery, and lack of time were the major reason for cancellation. hospital related reasons counted for 6.4% of cancellations. the most common reason was non availability of ICU or ward bed.

Conclusion: This study clearly identifies that the reasons for elective surgery cancellation are multifactorial and complex, mostly non- attendance of patient is the major reason. Redesigning our work processes by involving the patient in the care plan such as selecting date of surgery, establishing pre-operative anesthesia clinic and optimum surgical list booking should reduce rate of cancellation in our hospital

Key words: Cancellation, Jordan, Pediatric, Surgery, Reason.

JRMS September 2015; 22(3): 18-22 / DOI: 10.12816/0013170

Introduction

The cancellation of planned pediatric surgeries is a common problem and reported worldwide. it

has a range of 10-40%,^(1,2) this cancellation adversely affect health care provider- hospital- by inefficient use of operating room, prolonging

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Manuscript received October 20, 2014. Accepted May 14, 2015

hospital stay of in-patient and rebooking visit for outpatient, wasting preoperative preparations such as investigations and blood cross matching and affect staff satisfaction with their the job. Patients' families experience anxiety due to cancellation. The reasons for this anxiety are multifactorial. There is fear from possible complication of surgical condition due to delay of surgery, and the need for making new arrangements for the care of their families in their absence. Some families' new appointment is financially by losing more workdays.⁽³⁻⁵⁾

Due to its effect on both the health care provider and patients and their families, it should be considered as quality care problem. Therefore; it should be monitored on regular bases, routinely investigated to minimize it.

The aim of this study was to investigate the rate and the reasons of cancellation of elective surgery in our hospital and to formulate possible suggestions to minimize it.

Method

This is a retrospective study conducted at Queen Rania Abdulla II Hospital for Children (QRAHC) Amman-Jordan. Queen Rania Abdulla II Hospital for Children is only pediatric hospital in Jordan and the region with a capacity of 200 beds. It's considered a pediatric referral central. It contains all branches of pediatrics. The surgical department provides services in general pediatric surgery, pediatric orthopedics, pediatric ENT, pediatric ophthalmology and pediatric dentistry.

After the approval by ethical committee of the royal medical service, data collected from operating room data base and from incident report for cancellation of surgery for each cancelled case. Each incident report for each patient contains demographic data of the patient, in addition to time, type of surgery, treating physician, and reason for cancellation.

The study population included all patient listed in the operating list in the day before surgery between 1st of July 2012 to the 30th of June 2013. Cancelled case we defined as a case listed on operating list and did not undergo surgery on scheduled time during the same period.

The data collected was analyzed to define the Reasons for Cancellation in Our Hospital.

Results

During the study period 6061 were scheduled for elective surgery. Fifty three percent of them were scheduled by general pediatric division. Four hundreds and ninety cases were canceled on the day of surgery making the cancellation rate of 8%. The highest cancellation rate (16.7%) was reported by ophthalmology department while lowest rate (2.8%) was reported by ENT department. (Table I)

There were many reasons for cancellation; patient related reasons were the commonest (69.8%) Fig. 1 the commonest reasons were non-attendance on the day of surgery, followed by the presence of acute illness. Treating surgeon related reason counted for 23.8% of cancellation. Incomplete work up, no need for surgery, and lack of time were the major reason for cancellation. Hospital related reasons counted for 6.4% of cancellations. The most common reason was non availability of ICU or ward bed. (Table II).

Discussion

The cancellation of elective surgical cases is of a major concern to all hospitals, as it leads to inefficient use of operating room time and wastage of resources especially in hospitals with limited resources such as ours, because of it is direct effect on patients and their families, health service, staff and sometimes the clinical outcome, it is considered as a well recognized quality problem in the clinical services.^(1,5,6)

Reported cancellation rate differ among hospitals ranging in 10-40%. Our overall cancellation rate was 8%. Our cancellation rate is lower than reported by M. Mahmood *et al* from Pakistan, El-Dawlatly *et al* from Saudi Arabia, both of them reported a rate in the range of 14-16%.^(2,7) S. Bathla *et al*, from India reported a rate of 7.68%, while C. Ctin from Hong Kong reported a rate of 5.5%.^(3,4) In new South Wales, Australia less than 2% was reported and W Sung *et al*, from Taiwan reported a rate of 0,75%.^(3,8)

There is no definition of accepted rate of cancellation, but generally less than 5% is recommended.⁽³⁾ In our hospital the surgical teams organize their operating list rather than central organization, in the first visit to outpatient department.

Table I: The cancellation rate for each department.

Department	Booked cases percentage of work (%)	Cancelled case	Rate of cancellation %
General Pediatric Surgery	3.251 (53)	246	7.5
ENT	1.146 (19)	32	2.8
Ophthalmology	1.080 (18)	180	16.7
Dentistry	298 (5)	10	3.3
Orthopedics	286 (5)	22	7.7
Total	6061 (100)	490	8

Table II: The Reason And Frequency Of Cancellation Of Booked Cases:

Reason	General Pediatrics Surgery	ENT	Ophthalmology	Dentistry	Orthopedics	Total (%)	
Patient Related Reasons 69.8%	Non- Attendance	78	9	99	1	13	200 (41)
	Acute Illness	73	11	16	4	3	107 (22)
	No Consent Given	8	1	3	0	1	13 (2.6)
	Request For Certain Surgeon To Perform Surgery	1	0	14	0	0	15 (3)
	Social Circumstances	1	0	1	0	0	2 (0.4)
	Change In Medical Status	2	0	2	0	0	4 (0.8)
Surgeon Related Reasons 23.8%	Incomplete Work Up	28	10	9	3	1	51 (10.4)
	Lack Of Time	12	0	13	0	0	25 (5.1)
	No Need For Surgery	17	1	12	0	0	30 (6.1)
	Referral To Other Hospital	2	0	3	0	1	5 (1)
Hospital Related Reasons 6.4%	Not Fasting	4	0	0	2	0	6 (1.2)
	Administration	4	0	3	0	2	9 (1.8)
	No Icu Or Word Bed	11	0	0	0	0	11 (2.2)
No Implants, Broken Equipment	2	0	6	0	0	8 (1.6)	

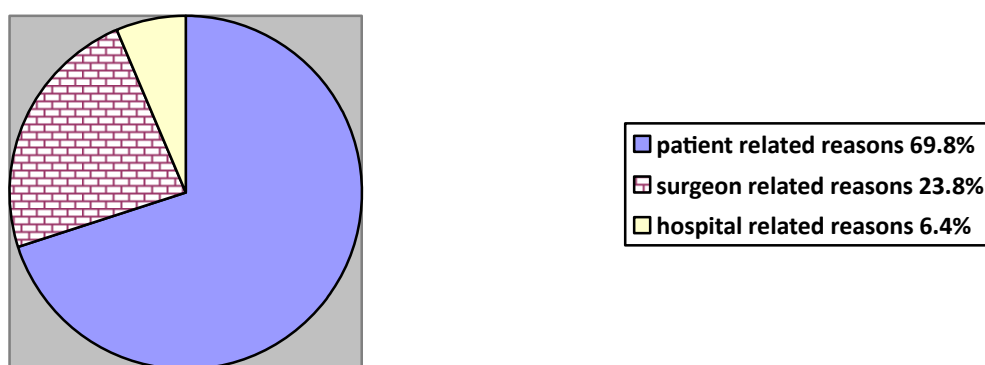


Fig 1: Percentage of cancellation

Patient is assessed and booked for surgery and instructed to come back to clinic within one week of intended date of surgery. In the second visit patient either admitted for in patient cases or given date, time, place and instruction regarding fasting for ambulatory cases. Investigations and medical consultation needed from the surgeon point of view are done. Anesthetic assessment is done the day before surgery for in patients and in the preoperative area for day cases. Our time interval between second visit and day of surgery for day cases is 5-6 days except in ENT and dentistry departments which is less than 24 hours. This short gap interval allows detection of any change in medical status or development of acute illness in patients leading to postponing their surgery and listing new cases from the waiting list, therefore lowering cancellation rate.

The reasons for cancellation of elective surgery are multifactorial. Some are related to patients or surgical team or hospital settings. In our study patient related factors counted for almost 70% of all cancellations; mostly due to non-attendance at day of surgery, followed by acute illness mainly upper respiratory tract infection. In a study published by Jordan university hospital, patients related factors for all branches of surgery counted for two thirds of cancellations, 40% of them due to non-attendance.⁽¹⁾ In neighboring Saudi Arabia with similar culture but different economical circumstances, El-Dawlatly *et al* reported that, 30% of cancellation due to non attendance.⁽⁷⁾ In Pakistan, India and Trinidad and Tobago, patients related factors counted for one third of all cancellations, only 5-10% counted for non-attendance.^(2,4,5) In countries with well established health system such as Hong Kong and Taiwan, patients related factor counted for 10% of cancellation, half of them due to non attendance.^(3,8) there are many reason for non attendance, which are related to socio-economic status of patients such as education, availability of transportation, lodging expenses, family structure, rank in the army and ability to take time off work. There several methods to reduce this rate, some centers suggested to fee for cancellation.⁽⁵⁾ this is not applicable in our insurance system. Others suggested in hospitals where preoperative clinics exist that the patient's failure to attend this clinic indicates failure to attend surgery. Therefore; this group of patients

should be cancelled and informed through the phone.⁽⁸⁾

We strongly believe that this issue of non-attendance should be investigated also studying the reasons and possible solutions to overcome it.

The cancellation due to acute illness is the second commonest reason in our study while it is the first common reason in others.^(2,4,5) This can be reduced by evaluating the patient within 24 hours of surgery as practiced by our ENT team, or educating and providing service for parents to inform hospital of any change in the medical status of their children allowing time to re-organize operating list.⁽⁵⁾

In our hospital, surgeons were responsible for 24% of cancellations. Improper and incomplete work up including the no need for surgery counted for more than half of this followed by the lack of time. Other reasons include the need for referral for other hospital and none fasting child due to improper communication.

T. Anatol *et al*, M. Mesmar *et al*, and W. Sung *et al* reported surgeon related cancellation rate of 14-20%. Most of their cancellation due to inadequate preparation.^(1,5,8) these reasons are avoidable and can be reduced, firstly, adequate pre-operative explanation for both children and their parents, and given clear simple instruction regarding fasting, attendance, and consenting. secondly patient with the need for medical evaluation should be referred to a pre-operative clinic which should include an anestheist.^(6,8,9) it was reported such clinic has reduced cancellation rate, unplanned hospital admission for day cases, investigations, and increased families satisfaction leading to proper utilization of hospital and operating room.^(8,9) the lack of time to complete the operating list counted for 5% of all our cancellation. M. Mahmood *et al*, C. Chiu *et al*, and S. Bathla *et al* reported a rate of 10%, 65%, 10% respectively.⁽²⁻⁴⁾ The reasons for shortage of time are list over booking due to growing waiting list and sometimes to enhance the perception that surgical team are working hard. Unanticipated finding during surgery may lead to change in surgical plan and longer time will be needed. Training of junior surgeon also should be counted as they need longer time.^(2,3) To overcome this problem the operating list should be organized by the chief surgeon, the set up of equipment and supplies should be prepared before the first case

which should be started on time. Patient flow to operating room also should be efficient.^(3,4)

Hospital related reason were responsible for 6.4% of our cancellations. The most common reason was the unavailability of ICU bed, followed by broken equipment such as x-ray machine.

Administrative reasons were the least 1.8%. This is similar to what reported by W. Sung *et al*, El-Dawlaty *et al*, C. Chiu *et al*, and Bathla *et al*, all reported nearly the same ratio with non availability of ICU bed was the commonest reason.^(3,4,7,8) we believe the establishment if high dependence unit will greatly resolve this issue.

To reduce our cancellation rate, we need to redesign our work process. We suggest new referral -new patients- to surgical clinics should be assessed by the consultant in charge. Patient who needs surgery, their families should be involved in selecting the date of surgery. This allows them to integrate not to force the planned surgery into their life. This type of health care service is patient centered and is of high quality service.⁽⁶⁾ this increase patient compliance, and satisfaction. Written pre-operative instruction instead of verbal should be given and explained to patient. Establishing pre-operative anesthesia clinic to screen and optimize medical condition of patient before the planned surgery. In this clinic all needed pre-operative work up such as laboratory investigation, x-rays and medical consultation are done the advantage of this clinic in addition to optimize patient, it improves patient safety and satisfaction leading to reduction in cancellation rate.^(6,9) the final step is a telephone call 48 hours prior to surgery for reminding the families and to screen for any change in medical status of patient. Unplanned and over booking surgical list should be controlled by the team leader allowing proper time estimation for each case considering the extra time needed by trainees.

Conclusion

The reasons for elective surgery cancellation are multifactorial and complex, mostly non-attendance of patient is the major reason. Redesigning our work processes by involving the patient in the care plan such as selecting date of surgery, establishing pre-operative anesthesia clinic and optimum surgical list booking should reduce rate of cancellation in our hospital.

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