Why is surgery cancelled? A retrospective evaluation

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Summary

Introduction. The cancellation of surgery wastes theatre time and creates hardship for patients, who often plan their working and family lives around the proposed operation date.

Methods. A retrospective evaluation of cancellations of scheduled elective and urgent operations was done using theatre records from May 2006 to April 2007. The reasons for cancellation were examined.

Results. Of a total of 5 786 operations, 5.6% were cancelled or postponed. Lack of medical clearance and patient preparation (65.1%) was the most common reason for cancellation. Lack or failure of instruments and patient cancellation constituted 2.8% and 1.8% of the cancellations respectively.

Conclusion. Last-minute cancellation of surgery was a significant problem, and appreciation of the usual reasons for cancellations can improve theatre utilisation and avoid inconveniencing patients and their families.

Cancelled elective and emergency surgery wastes theatre time and adds to hospital expenses, as well as inconveniencing patients and their families. This study examined the frequency and causes of cancelled elective and urgent general surgical and subspecialty cases at Prince Mishyeni Memorial Hospital (PMMH), Durban.

Patients and methods

Scheduled elective and urgent cases were reviewed using theatre records from May 2006 to April 2007. This study included only patients who were actually brought to theatre, and excluded those cancelled from the ward or who did not turn up. Five categories for cancellation were defined and the reasons examined.

Results

Over 12 months, during which 5 786 operations were completed (2 800 urgent and 2 986 elective), cancellations occurred in 333 (5.6%) of cases. The most common reason was lack of medical clearance and patient preparation (65.1%). More decisions for postponement came from surgeons (25.8%) than from anaesthetists (4.5%). Other reasons for postponement of surgery were: lack or failure of instruments (surgical or anaesthetic) – 2.8%, and cancelled by patients – 1.8%. No operations were cancelled because of lack of ICU beds, consent or scheduling error (Table I).

Discussion

This study investigated the fact that a significant number of surgical procedures were delayed or cancelled owing to inadequate preoperative assessment and preparation. Clearly, the cost-effective use of surgical facilities necessitates efficient use of theatre time and personnel. Repeated delays and cancellations result in increased costs for hospitals and frustration and anxiety for patients. Almost two-thirds (65.1%) of the cancellations were categorised as 'Lack of medical clearance'. Of these, more than half (N=119) were the result of acute change in cardiac or pulmonary status. Seventy patients were hypertensive, and 3 had chest pains. A good preoperative assessment and appropriate physician consultation with optimisation of medical treatment could have avoided some of these cancellations. Forty-six patients had an acute change in pulmonary status (acute chest pains, upper or lower respiratory tract infection); these conditions were largely not preventable, but timeous detection could have avoided an unnecessary trip to theatre. However, the 92 cases that were cancelled either due to abnormal blood results (N=41) or because the medical work-up was felt to be incomplete for other reasons (N=51), could certainly have been improved upon.

Unavoidable causes of cancellations included 6 patients who developed fever on the morning of surgery. Booking of theatre cases at PMMH is usually done after consultation between the juniors and seniors, but this did not always happen. The 5.6% cancellation rate in this study represents the tip of the iceberg since we only looked at the number of patients cancelled upon arrival in theatre, yet many more are cancelled from the wards.

Improved communication between surgeons, physicians and auxiliary services may expedite preoperative patient evaluation, Dufek *et al*. recommended improving the timeliness of response by consulted physicians, along with improvement of the protocol for preoperative patient evaluation as a means of addressing these problems.[1] No patients were cancelled because of scheduling error, lack of ICU beds or consent. Contrary to popular belief, more patients were cancelled by their surgeons (25.8%) than by anaesthetists (4.5%). The main reason for cancellation by surgeons was time constraints. In most cases, surgeons would have been willing to proceed but nursing staff and anaesthetists were unwilling to work after hours.

Nine patients could not be operated on because the surgeons were busy with emergencies elsewhere. Eight elective patients were cancelled because of the wrong

TABLE I. REASONS FOR CANCELLATION

Cancelled by anaesthetist	*N*
Patient ate breakfast	9
Consultant anaesthetist needed but not available	2
Failed anaesthesia (e.g. failed induction)	2
Epistaxis at induction	1
Aspiration on table	1
Total	15 (4.5%)
Cancelled by surgeon	
Time constraints	60
Surgeons involved with a different emergency	9
Wrong diagnosis	8
Improvement in patient condition; surgery no longer needed	9
Total	86 (25.8%)
Lack of medical clearance	
Acute change in cardiac status (chest pains, hypertension)	73
Acute change in pulmonary status	46
Fever on morning of surgery	6
Haematological abnormality	23
Biochemical abnormality	18
Medical work-up incomplete	51
Total	217 (65.1%)
Cancelled by patient	
Patient decided against procedure	4
Patient wanted to discuss with family/pastor	1
Patient unco-operative	1
Total	6 (1.8%)
Surgical or anaesthetic equipment problems	
Shortage/failure of surgical instruments	8
Anaesthetic machine failure	1
Total	9 (2.8%)

diagnosis. Nine patients were cancelled because their conditions had improved and they needed no further surgery; these would have been avoidable if they had been seen shortly before surgery and reassessed. In 6 cases, booked patients declined surgery: 4 decided against the procedure, 1 was unco-operative and the other wanted to discuss the matter with his pastor. It is difficult to establish why patients decide against a procedure. Whatever the reasons, improved communication between surgeon and patient would foster a better relationship that may reduce this type of cancellation. Nine procedures were cancelled because the patients had eaten breakfast on the morning of surgery. Some of these patients were operated on in the afternoon, but this was not possible in the majority of cases owing to time constraints. One patient had epistaxis on induction and the operation was postponed pending further investigations. Lack or failure of surgical instruments resulted in cancellation of 8 operations; this is mostly avoidable if instruments are checked prior to scheduled surgery. One operation was cancelled due to problems with the anaesthetic machine after hours.

Appreciation of the usual reasons for cancellations can improve theatre utilisation by permitting administrators and clinicians to anticipate those cases in which problems might arise so that additional attention can be paid to them. The cancellation of surgery creates hardship for patients, who often plan their working and family lives around the proposed operation date. Most are cancelled at less than 24 hours notice. The cost implications to the patients, their families and the institutions must be significant but have not been calculated.

In most Western countries, preoperative anaesthetic and surgical assessment of elective surgical patients on an outpatient basis combined with admission of the patient on the day of surgery is widely practised.[2] This form of 'same-day surgery' has become routine and has largely replaced the traditional method whereby patients entered hospital the day before elective surgery and underwent anaesthetic and other assessments as inpatients, staying overnight in the hospital. Same-day surgery is difficult to implement in our setting owing to transport and social issues that affect most of our patients, to say nothing of administrative and bureaucratic delays. Pre-admission anaesthetic consultations could not only improve efficiency of theatre use but also reduce the duration of hospital stay and hospital costs.[3] A

preoperative visit by an anaesthetist can reduce postoperative complications and the degree of anxiety about surgery and anaesthesia.[4] Many delays in our patients resulted from inadequacies in organising laboratory tests and failure to wait for or check the results. Preoperative assessment clinics have the potential to reduce operative delays and cancellations, and to reduce hospital costs, by making more efficient use of available facilities and personnel in a manner which is well accepted and appreciated by patients. Other centres in the UK (e.g. Solihull and Heartlands Hospital, Birmingham) have effective nurse-led preoperative assessment clinics which provide a general medical and anaesthetic preoperative assessment, to give written and verbal information to patients about their operations and to identify social problems which could delay discharge. Thus, the introduction of a comprehensive preoperative assessment clinic for all patients appears justified. The anaesthetists and surgeons at PMMH have indicated an interest in running a joint preoperative assessment clinic but the final impetus remains in the hands of provincial managers.

This study has identified common and avoidable causes of cancellation of surgical cases. The number of cancellations may be decreased and theatre utilisation improved by: (*i*) more thorough and timely clinical evaluation of patients before booking; (*ii*) improved communication with patients about the proposed procedure and preoperative preparation; (*iii*) ensuring that all patients are discussed and seen by the consultants before booking; (*iv*) avoiding unrealistic over-booking of patients; and (*v*) reviewing and re-assessing all patients prior to surgery.

Given the total number of procedures per year, the introduction of comprehensive preoperative assessment for all patients could result in a reduction in hospital costs and an improvement in theatre efficiency.

Conclusion

Last-minute cancellation of surgery was a significant problem at this hospital, and there is a need to review present protocols for screening patients prior to surgery. Appreciation of the usual reasons for cancellations can improve theatre utilisation by permitting administrators and providers to anticipate those cases in which problems may arise so that additional attention can be paid to them. Case cancellations can be decreased by improved preoperative patient evaluation, and improved communication between surgeons and anaesthetists.

REFERENCES

1. Dufek S, Gaucher E, Gialanella. The total quality process applied to the operating rooms and other clinical processes. *Surgery* 1993; 113: 255-259.
2. Anderson RP, Guyton SW, Paull DL, *et al*. Selection of patients for same-day coronary bypass operations. *J Thorac Cardiovasc Surg* 1993; 105: 444-451.
3. Conway JB, Goldberg J, Chung F. Preadmission anesthesia consultation clinic. *Can J Anaesth* 1992; 39: 1051-1057.
4. Leigh JM, Walker J, Janaganathan P. Effect of preoperative anaesthetic visit on anxiety. *BMJ* 1977; 2: 987-989.