Same-day cancellations in an ambulatory surgery unit: assessment and improvement opportunities

A. Castro[1], M. J. Quelhas[1], A. Brandão[2], R. Fernandes[1] and A. P. Silva[1,2]

Abstract

Aim: Same-day surgery cancellations incur substantial costs for both patients and healthcare institutions, making it essential to understand the contexts in which they occur. This study aimed to characterize same-day cancellations and identify opportunities for improvement in our unit.

Methods: Same-day cancellations were retrospectively analyzed (February 2022–January 2023), including reasons for cancellation, surgical specialty, and anesthesia consultation. Descriptive analysis, proportion tests, and comparisons of quantitative variables (Chi-Square, Kruskal-Wallis) were performed (IBM SPSS Statistics, $P < 0.05$).

Results: We recorded 650 cancellations, corresponding to a cancellation rate of 6.1%. Differences in the distribution of cancellation causes were identified. Anesthetic/surgical risk and patient no-shows accounted for the greatest impact (52.5%).

Conclusion: The observed cancellation rate is consistent with that reported in the literature. We noted that most cancellations at our institution are potentially avoidable or could allow rescheduling without loss of surgical time and unnecessary disruption, where an evaluation before the procedure might have been beneficial.

Keywords: Day case, Ambulatory surgery, Quality indicators, Management & Quality, Same-day cancellations.

Authors' Addresses: [1]Departamento de Anestesia, Hospital Pedro Hispano, Unidade Local de Saúde de Matosinhos. Portugal. [2]Unidade de Cirurgia de Ambulatório, Hospital Pedro Hispano, Unidade Local de Saúde de Matosinhos. Portugal

Corresponding Author: A. Castro . *Email:* anaisabel.castro@ulsm.min-saude.pt

Introduction

Ambulatory surgery offers numerous advantages for patients, their families, and healthcare institutions, and has grown substantially in recent years as a result of advances in surgical techniques. This surgical model currently represents a substantial portion of all surgical procedures performed. Same-day surgery cancellations and patient satisfaction have been increasingly recognized as important quality indicators [1,2], making it important to evaluate the quality of this service. In this context, optimizing operating time and enhancing the efficiency of the ambulatory surgical unit is essential.

Same-day surgical cancellations have a considerable impact on both the patient's healthcare experience and the institution, generating associated costs and a loss of surgical opportunity. This issue has been discussed in the literature due to its significance, with efforts to identify risk metrics and determine potentially preventable factors. Factors such as age and distance from the patient's residence to the hospital have been associated with higher same-day cancellation rates [2,3]. It is also important to distinguish the type of cancellation, as this influences the appropriate management approach: cancellations after the patient's arrival at the hospital, patient no-shows, and cancellations prior to the patient's arrival but with no possibility of reallocating the surgical time [1]. While patient screening for ambulatory procedures is essential, same-day cancellations still occur. It is therefore essential to understand the contexts in which they occur [1,3].

Beyond understanding the incidence and risk factors, this analysis also enables the development of preventive strategies, particularly through the identification of patients who may benefit from preoperative assessment. Studies addressing this issue have highlighted the role of screening for conditions incompatible with ambulatory surgery, either during anesthesia consultations or by means of structured questionnaires [4], as well as the impact of preoperative telephone calls by nursing staff [5], which have shown encouraging results in reducing cancellation rates.

Despite these efforts, evidence suggests that the majority of same-day cancellations are preventable, and that institutional context plays a crucial role in shaping effective solutions [6]. In this study, we aim to retrospectively analyze data related to ambulatory surgery cancellations in our unit over a one-year period, with the goal of identifying potential areas for improvement and implementing strategies to mitigate this issue. This post-pandemic period was specifically chosen to reflect the phase in which preoperative screening tests were no longer mandatory, a factor that may have contributed to previous same-day cancellations.

Material and methods

This was a retrospective cross-sectional study that retrieved and analyzed records regarding same-day cancellations between February 2022 and January 2023 at our institution, after approval by the institutional ethics committee (N78/CES/JAS).

Data were obtained through a review of administrative information related to surgical and anesthetic scheduling management, as well as through the analysis of patients' medical records, with strict adherence to confidentiality and anonymity. Regarding scheduling management data, all confirmed appointments for the Ambulatory Surgery Unit, as well as all cancellations, were reviewed in order to determine the actual cancellation rate and identify characteristics associated with either cancellation or completion of the scheduled procedure.

A descriptive analysis of the collected data was performed, including an assessment of the cancellation rate across different variables, such as surgical specialty and day of the week. Cancellation subtypes described in the literature were classified and analyzed, including same-day cancellations and patient no-shows. Inferential analysis included correlation analysis, proportion tests, and comparisons of categorical (chi-square test) and quantitative variables (Kruskal–Wallis test). All statistical analyses were performed using IBM SPSS Statistics® software.

Results

During the period of analysis, 10,029 procedures were performed, and 650 same-day cancellations were recorded, corresponding to a cancellation rate of 6.1%. We observed that the average time from scheduling to the procedure was 23.8 days, with no relation to the final status. Table I shows the number and percentage of procedures performed and cancelled, and the distribution of reasons for cancellation by surgical specialty.

Among patients whose procedures were cancelled, 29.8% had undergone anesthesia consultation, compared to 22.1% of those whose procedures were performed, with no statistical difference between groups.

A significant difference in cancellation rate was observed between surgical specialties. Although Ophthalmology accounted for the highest absolute number of cancellations (427; 65.7% of the total), its high surgical volume resulted in a cancellation rate of 5.2%, below the overall rate.

Differences in the distribution of cancellation reasons were identified. Anesthetic/surgical risk and patient no-shows were the most frequent reasons, together accounting for 52.5% of cancellations. Strikes were responsible for 15.4% of cancellations, particularly affecting Urology and Orthopedics, whose dedicated operating room time happened to coincide with strike days. Anesthetic/surgical risk was the most frequent reason in Ophthalmology, Otorhinolaryngology, and Urology, likely related to intrinsic factors of the patient population.

Discussion and conclusion

The cancellation rate observed in our unit is within the values reported in the literature, with an overall rate of 6.1% [1,2]. Regarding the reasons for same-day cancellation, the most frequent were anesthetic/surgical risk and patient no-shows. Some reasons, such as strikes, are unavoidable; for others, a more timely evaluation could have reduced the cancellation rate. This applies to patient no-shows, patient refusals, changes in patient status/inadequate preparation, unverified diagnosis/no indication, and anesthetic/surgical risk (accounting for 62.7% of same-day cancellations). Organizational factors, such as shortages of staff, equipment, or beds and insufficient operating room time (8.9%), also warrant further analysis and intervention.

This issue is relevant not only because of the loss of surgical time and the waste of resources, but also because of the disruption to patients' and families' plans. Same-day cancellation is considered a quality indicator in ambulatory surgery [4,6] and is closely linked to appropriate patient selection [7]. Previous studies have sought to identify factors associated with an increased risk of same-day cancellation, including health determinants, social and economic factors, seasonality, health behaviors, as well as environmental factors such as distance from the hospital not only in ambulatory surgery, but also for inpatient surgeries [3,8,9]. These factors are closely linked to the characteristics of the patient population and the institution, which explains the variability in cancellation rates [10-12], and may help identify higher-risk patients for targeted intervention [13,14].

At our institution, patient no-shows were an important cause of same-day cancellations (23.7% of the total same-day cancellations), an issue addressed in the literature for both surgical procedures and medical appointments. Previous no-show records may predict future behavior, and demographic and social constraints also play an important role [15-17]. Lacy et al. [18] identified anticipatory fear and anxiety about both procedures and bad news, a sense of disrespect, and misunderstanding of the scheduling system as contributing factors, which should be taken into account when analyzing this issue.

Regarding interventions to reduce same-day cancellations, studies suggest that an evaluation closer to the procedure may decrease system-related cancellations [5,19]. This was observed in the pediatric population, in which preoperative nurse telephone calls reduced the cancellation rate from 16.8% to 8.8% [5], and Lima et al. [19] reported a beneficial impact of a structured preoperative evaluation clinic.

This study has limitations: owing to its retrospective design based on scheduling and cancellation records, misclassification of the cause of cancellation is possible. This was however an important step in describing the situation in our unit and devising strategies to reduce this incidence. We believe that similarly to what happens in other institutions, there is room for improvement and that changes in the scheduling process, or

Table I. Number and percentage of procedures performed and cancelled, and distribution of reasons for cancellation by surgical specialty. The most frequent reasons are highlighted in bold.

Reason for cancellation	GenSur (N)	%	PlasSur (N)	%	Stom (N)	%	Gyn (N)	%	OFT (N)	%	ORL (N)	%	Orto (N)	%	Uro (N)	%	Total	%
Patient no-show	7	14.3	0	0.0	6	33.3	19	28.8	113	26.5	1	2.7	6	23.1	2	7.7	154	23.7
Patient Refusal	3	6.1	0	0.0	0	0.0	1	1.5	11	2.6	0	0.0	5	19.2	2	7.7	22	3.4
Diagnosis Not Confirmed / No Indication	2	4.1	0	0.0	0	0.0	10	15.2	7	1.6	0	0.0	1	3.8	0	0.0	20	3.1
Change in Patient Status / Inadequate Preparation	1	2.0	0	0.0	1	5.6	4	6.1	12	2.8	1	2.7	0	0.0	5	19.2	24	3.7
Anesthesia/ Surgery-Related Risk	10	20.4	0	0.0	3	16.7	9	13.6	135	31.6	21	56.8	3	11.5	6	23.1	187	28.8
Operational Contingency	9	18.4	1	100.0	0	0.0	12	18.2	25	5.9	9	24.3	3	11.5	4	15.4	63	9.7
Constraints: Personnel, Equipment, or Beds	4	8.2	0	0.0	8	44.4	0	0.0	15	3.5	2	5.4	0	0.0	1	3.8	30	4.6
Insufficient Operating Room Time	12	24.5	0	0.0	0	0.0	5	7.6	10	2.3	0	0.0	1	3.8	0	0.0	28	4.3
Strike		0.0	0	0.0	0	0.0	4	6.1	81	19.0	3	8.1	6	23.1	6	23.1	100	15.4
Other	1	2.0	0	0.0	0	0.0	2	3.0	18	4.2	0	0.0	1	3.8	0	0.0	22	3.4
Cancelled Procedures Total	49	7.5	1	0.2	18	2.8	66	10.2	427	65.7	37	5.7	26	4.0	26	4.0	650	
Performed Procedures Total	695		9		80		640		7724		272		378		231		10029	
Cancellation rate (%)		6.6		10.0		18.4		9.3		5.2		12.0		6.4		10.1	**Over-all**	**6.1**

GenSur: General Surgery. PlasSur: Plastic Surgery. Stom: Stomatology. Gyn: Gynecology. OFT: Ophthalmology. ORL: Otorhinolaryngology. Orto: Orthopedics. Uro: Urology.

patient interview/re-evaluation closer to the procedure could have a beneficial impact. Following these preliminary results, in line with what has been proposed in the literature, a preoperative nurse telephone consultation was implemented within the 48 hours before surgery to assess the impact of this intervention on the cancellation rate, and possibly increase efficiency and productivity of our Ambulatory Surgery Unit.

Conflict of interest and funding

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