

## Cancellations in day-case ENT surgery

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### Abstract

**Introduction:** In excess of two million operations are performed in a day-case/ambulatory setting in the United Kingdom each year. Cancellations in elective surgery cost the National Health Service (NHS) over £265 million per year.

**Methodology:** This is a retrospective study in which the total number of elective ENT operations performed at The Guy's & St. Thomas' NHS Trust in a 6-month period were investigated for a range of demographic factors including, age, gender and ethnicity with regards to their relationship to operative cancellation rates.

**Results:** The overall cancellation rate was 19.9% (21.7% for females and 18.5% for males—this was statistically significant ( $p < 0.001$ )). There was a statistically significant difference between the three age groups ( $p < 0.001$ ). There was a significant difference between the two commonest reasons for cancellation—"patient failed to arrive" and "patient unfit". The cancellation rate for day-case operations was 11.4% and this was significantly lower than that for elective operations at 21.6% with ( $p < 0.001$ ). The cancellation rates were 16.0% for Caucasians, 23.7% for blacks and 22.6% for Asians. There was a significant increase in cancellations during the winter months.

**Discussion/recommendations:** Attention should be paid to subgroups at higher risk of operative cancellation (0 to 20-year olds, ethnic minorities, non-day case) especially in the winter months. The reason(s) for cancellation should be clearly recorded in the patient's notes. Medical staff at all levels should be given appropriate training as to the clinical significance of good note-keeping and its enforcement. The coding system for the classification of operative cancellations should be extensive and descriptive so as to include a broad range of categories.  
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### 1. Introduction

Day-case surgery has rapidly expanded as a cost-effective and resource-conserving surgical intervention to the point that well in excess of two million operations are performed in a day-case/ambulatory setting in the United Kingdom alone each year. Cancellations in elective surgery can cost the National Health Service (NHS) up to £266 million per year [1,2]. Studies have shown that 5% of patients fail to attend when summoned from a waiting list for routine ENT surgery [3]. One of the most common reasons cited for the wastage of theatre time is failure of patients on waiting lists to attend

for operations when sent for [4,5]. This is not the sole reason for cancelled operations and previous studies have failed to investigate the plethora of alternative demographic factors that may play a significant role.

The literature shows that theatres are only used for 50–60% of the time for which they are available [6]. This suggests that valuable theatre time is being wasted and waiting lists are unnecessarily prolonged due to cancelled operations. Pre-admission clinics can improve efficiency and alleviate the financial burden of cancelled operations [7], although this view has not been unanimously accepted [8]. Whether the patients are assessed 24 h prior to the operation or 30 days before, makes no significant difference to the cancellation rate [9]. Attention to a multitude of factors involved with patient operative care including pre-operative screening, lab testing, compliance with fasting guidelines

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and pharmacological advice coupled with suitable explanation about the operative procedure can help to reduce morbidity and cancellation rates [10].

By taking advantage of the vast numbers of ENT operations performed at The Guy's & St. Thomas' NHS Trust, London, UK the present study aims to address the issues, which have been largely ignored in the literature including detailed breakdowns of reasons for operative cancellation. These reasons will then be demographically sub-classified in terms of age, gender, ethnicity and seasonal variation so that meaningful recommendations can be formulated so as to improve current clinical practice.

## 2. Methodology

This is a retrospective study in which the total number of elective ENT operations performed between the period of 1st July and 31st December 2002 were investigated. All ENT patients operated on during this period were selected from The Guy's & St. Thomas' NHS Trust database. The total number of ENT operations performed in this 6-month period was 1414. After the removal of emergency operations, the total sample size was 1100.

An overall cancellation rate was determined. There are a myriad of reasons for cancelled operations and the commonest have been displayed along with their associated frequencies. The most frequent causes of cancellations were analysed in the context of a range of demographic factors including, age, gender and ethnicity were investigated with regards to their relationship to cancellation rates. Appropriate statistical analyses were performed when required on a number of different variables.

## 3. Results

The overall cancellation rate was 19.9% (219/1100) Table 1.

The Fig. 1 shows the reasons for cancellation that had a frequency greater than 5%.

A chi-squared test revealed that there was a significant difference between "patient failed to arrive" and "patient unfit" Table 2.

Age (see Table 3).

Gender: the overall cancellation rate was 21.7% (102/469) for females and 18.5% (117/631) for males—this difference was statistically significant ( $p < 0.001$ ).

Table 1  
Comparison of the overall cancellation rates of studies in ENT surgery

Study	Overall cancellation rate (%)
Thomson [11]	30.1 (89/296)
Current study	19.9 (219/1100)
Hampal and Flood [3]	16.93 (548/3236)
Dingle et al. [7]	9.5 (415/3739)

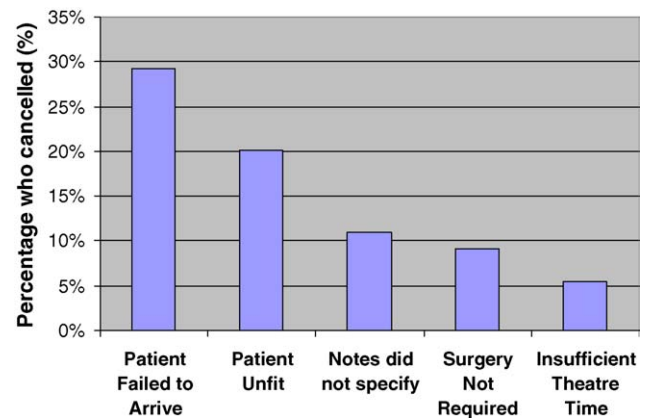


Fig. 1. The five commonest reasons for cancellation of ENT operations.

Table 2  
The average ages and frequencies for the five commonest reasons for operative cancellations

Reason for cancellation	Average age (years)	Frequency (%)
Patient failed to arrive	32.1	29.2
Patient unfit	34.4	20.1
Notes did not specify	35.6	11.0
Surgery not required	22.1	9.1
Insufficient theatre time	37.4	5.5

Table 3  
The frequencies of cancellation amongst different age groups

Age group (years)	Frequency of cancellation (%)
0–20	21.6 (80/371)
21–40	19.4 (64/330)
>41	19.0 (76/399)

There was a statistically significant difference between the three age groups ( $p < 0.001$ ).

Table 4  
The frequency of cancellation amongst different ethnic groups

Ethnic group	Frequency of cancellation (%)
White	16.0 (118/739)
Black	23.7 (36/152)
Asian	22.6 (14/62)
Mixed	24.1 (7/29)
Other	30.4 (7/23)
Not specified	40 (38/95)

Ethnicity (see Table 4).

Monthly non-attendance rate (see Fig. 2).

Day-case and elective cancellation rates: the cancellation rate for day-case operations was 11.4% (20/175) and this was significantly lower than that for elective operations at 21.6% (200/925) with  $p < 0.001$ .

## 4. Discussion

The overall rate of operative cancellations was 19.9% in the sample of 1100 patients. This is similar to the 16.9% found

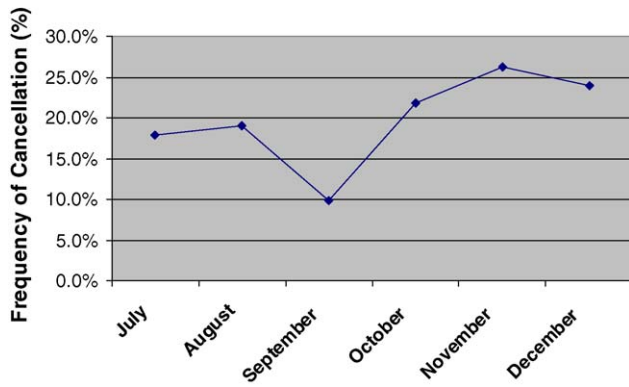


Fig. 2. The monthly variation of cancellation rate.

by Hampal and Flood [3] but significantly greater than the 9.5% found by Dingle et al. [7]. In the sample, a total of 24 different reasons were stated in the patient records for operative cancellations with the patient failing to arrive being the commonest at 29.2%. This contrasts with Thomson's study (1991) where the majority of patient's were cancelled for unknown reasons [11]. Hampal and Flood found that 14.6% of operations were cancelled due to non-attendance of the patient, which compares with 12.8% being cancelled by the hospital [3]. 5.5% of cancelled operations were due to insufficient theatre time—undoubtedly a hospital-based reason.

Patients self-cancelled in 3.2% of operations. Previous recommendations suggest that patients should be reminded of their operative date either by a letter or a telephone call [3]. Forgetfulness was not found to be a major source of operative cancellations in our study, but has been found to be significant by others [12].

There was a statistically significant correlation between increasing age and decreasing frequency of operative cancellation and this is consistent with the literature [3]. This may be due to generational differences in attitudes towards doctors as well as differences in time commitments with children subject to the scheduling of their parents (e.g. difficulty being released from work) as well as their school (e.g. public exams). The nature of ENT illnesses may be a contributing factor with many being self-limiting and many patients self-medicaling [13].

Similarly, the greater cancellation rate among women may be due to the extra commitments in the home or at work. This contrasts with Hampal and Flood's study where non-attenders were significantly more likely to be males [3]. They cited a lack of desire among males to take time off work during a relative economic depression at the time [3]. The cancellation rates were 16.0% for Caucasians, 23.7% for blacks and 22.6% for Asians.

The dip in cancelled operations in September may relate to the holiday season with many doctors on annual leave and children returning to school. The significant increase in cancellations during the winter months may relate to worsening of the weather, increased transport difficulties and a greater strain on the health service at this time of year may

lead to disproportionately more hospital-based cancellations. This trend is consistent with that found by Leese et al. [13] when they studied ENT outpatient clinic attendance. It has also been reported that the commonest cause of patient self-cancellation is upper respiratory tract infection, which is commoner in winter and is considered to be a contraindication for ENT surgery [7].

The advantages of the pre-admission clinic have been discussed at length in other studies [7,8,11]. The timing of the pre-admission clinic may have a role to play. If the pre-admission clinic is too close to the date of the surgery, then should a cancellation occur, there is less time for adjustment of the lists. If the pre-admission clinic is too early with respect to the date of the surgery, the parameters relating to the fitness of the patient could change significantly between pre-admission and the operation. This should be taken into account when deciding how far in advance of an operation pre-assessment should occur.

The significantly greater cancellation rate for non-day case operations compared with day-case procedures is intriguing. In one respect the longer post-operative recovery time with non-day case operations requires an improvement in planning on behalf of the patient and the hospital and scheduling difficulties could be a contributing factor. Conversely, patients scheduled for non-day case procedures are more likely to have serious illnesses and thus one can infer that cancellations would be less likely. We found that only 15% (3/20) of day-case cancellations were due to the patient failing to arrive and only 5% (1/20) due to the patient being unfit. This compares with 29.2 and 20.1% for non-day case operations, respectively. Thus increasing the number of procedures performed as a day-case will lead to a lower overall cancellation rate with the time and resource savings that accompany that change.

A limitation with this study is that 11% of cancelled operations had no specific reason recorded in the notes i.e. 'notes did not specify'. These outcomes illustrate the need for a more concerted effort with regards to the accuracy of note-keeping for reasons relating to audit, maintenance of standards, clinical governance and strengthening the hospital's medico-legal position.

The principal problem of almost 30% of cancellations being due to a failure of the patient to arrive requires further investigation. Previous studies have shown that this can be due to the patient being incorrectly listed, another intervening illness, the inability to take time off work, social reasons, poor communication, short notice, having the procedure performed elsewhere, improvement in their medical condition, a change of mind or postal address [3,4,11,14]. In contrast with Hampal and Flood's study though, this study did not find forgetfulness to be a major source of operative cancellations [3].

## 5. Conclusion

This study has evaluated a variety of factors that may lead to the cancellation of ENT operations. An attempt has been

made to explain these factors and trends and whether they are fully understood determines the scale of cost and resource saving which can be made in ENT. A number of changes have been proposed to attempt to improve efficiency in this regard which can be universally applied in all ENT centres across the UK.

## 6. Recommendations

As a result of this study the following recommendations are proposed:

1. Meticulous attention should be paid to subgroups at higher risk of operative cancellation (0 to 20-year olds, ethnic minorities, non-day case) especially in the winter months.
2. The timing of the pre-assessment clinic should be evaluated to ensure that it allows for maximum flexibility within the system.
3. Patients should be provided with a telephone reminder 3 days prior to their operation and this should be used as a mechanism to confirm their intention to attend.
4. The maximum number of ENT operations should be performed in the day-case setting as appropriate.
5. A concerted effort should be made to ensure that medical records are kept up to date and that the reason(s) for cancellation of an operation is clearly stated in the patient's notes. Medical staff at all levels should be given appropriate training as to the clinical significance of good note-keeping and its enforcement.
6. The coding system for the classification of operative cancellations may need to be expanded to include a broader range of categories.

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