



“Waste not, want not”: making better use of house officers in the Otolaryngology Department at Christchurch Hospital, New Zealand

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Abstract

Aim To quantify the surgical preadmission workload for ORL house officers, to outline a protocol for enhancing nurse-led preadmission, and to consider the effects of implementing nurse-led preadmission for selected patients.

Methods Clinical records for patients undergoing ORL procedures in February 2008 were retrospectively audited, noting ASA score, patient age, procedure type and duration, and duration of hospital stay. Adults undergoing inpatient procedures were deemed suitable for nurse-led preadmission if they had an ASA score of 1, procedure length <90 minutes, and were aged less than 60 for females and 50 for males.

Results 171 procedures were performed in February, of which 164 (96%) were elective procedures, on patients with a mean age of 24 years, and range 0–93 years. The mean procedure length was 51 minutes, with a range 2–374 minutes. 92 patients were assessed as ASA 1, 62 as ASA 2, and 9 as ASA 3. The ASA score was not recorded for 1 patient. House officers do not preadmit paediatric day cases or cases performed under local anaesthesia. 23 (23%) of the 99 patients preadmitted by house officers fulfilled all three criteria for nurse-led preadmission.

Summary Surgical preadmission is a significant part of the workload for ORL house officers. Many patients who are preadmitted are well. Nurses currently preadmit paediatric day-case patients and we found no significant barriers to implementing nurse-led preadmission in a larger patient group. Patient safety is very unlikely to be compromised provided a strict protocol is followed for selection of appropriate patients. The time saving for house officers by implementing nurse-led preadmission is approximately 3 hours per week in our service.

Preadmission surgical clinics allow efficient use of health resources by assessing patient fitness prior to surgery and having any required tests, minimising gaps on operating lists. Preadmission allows patients who are not fit for surgery to be identified and replaced. Nurse-led preadmission already occurs at Christchurch Hospital using a preoperative health questionnaire, for fit paediatric patients undergoing day-stay procedures.

Many patients attending oto-rhino-laryngology (ORL) preadmission surgical clinics are well, and preadmission clinics contribute significantly to the workload of ORL house officers. Reducing their workload is important given the shortage of junior medical staff in the New Zealand health system. Identifying fit patients listed for short elective procedures, for whom medical preadmission is less likely to be of value, could increase the amount of time available for clinical apprenticeship.

The aim of the study is to investigate the elective surgical preadmission workload of ORL house officers at Christchurch Hospital and to identify a larger group of patients who may be suitable for nurse-led preadmission. The preadmission workload of house officers in New Zealand has not been studied before.

Methods

A retrospective audit of the records for all surgical procedures performed by the Otolaryngology Department at Christchurch Hospital during February 2008 was undertaken. Minor operations performed in the outpatient department under local anaesthesia were excluded.

Procedure length, procedure type, and patient National Health Index (NHI) and American Society of Anesthesiologists (ASA) score were extracted from the Homer Patient Management System (iSoft, Banbury, Oxfordshire, UK). Most data was entered by theatre nurses at the time of the procedure. Length of stay was added at the time of discharge. ASA score was assigned by the anaesthetist at induction of anaesthesia. Additional data was obtained from electronic patient records held in the Concerto 6 Portal for physicians (Orion Health, Auckland, New Zealand) application.

The ASA score classifies patients on the basis of physical status on a 6 category scoring system. A score of 1 denotes a normal healthy patient; 2, a patient with mild systemic disease; and 3, a patient with severe systemic disease.¹

Patients who may not require house officer assessment are those with an ASA score of 1, procedure duration of 90 minutes or less, who are aged less than 60 years if female, and less than 50 if male.²

This patient group has the lowest perioperative risk for any procedure. Christchurch Hospital anaesthetic policy recommends that asymptomatic patients do not require a chest radiograph or preoperative blood tests for procedures where minimal blood loss is expected. ECG examination is not required for asymptomatic females less than 60 years and males less than 50 years.²

Results

171 procedures were performed by 12 surgeons and trainees during February 2008. Of these, 7 (4.1%) were to treat patients admitted acutely. 164 patients (95.9%) underwent elective procedures (Table 1).

Table 1. Procedures during February 2008

Variables	n	%
Total	171	100
Elective	164	95.9
Acute	7	4.1
Elective	(n=164)	
ASA 1	92	56.1
ASA 2	62	37.8
ASA 3	9	5.5
ASA not available	1	0.6
Length ≤90min	131	79.9
Length >90min	33	20.1
Age <60yrs	145	87.9
Age ≥60yrs	19	12.1
Day-stay	84	51.2
Inpatient	80	48.8

The range of elective operation times was from 2 minutes to 374 minutes (6 hours, 14 minutes) with a mean time of 50.3 minutes. The mean age of elective patients was

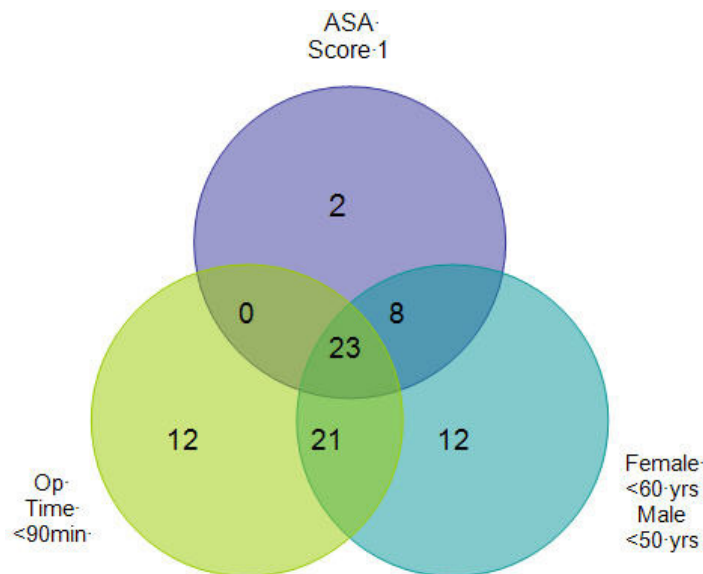
23.7 years, with a range from 0 to 93 years. 95 (57.9%) elective patients were paediatric (defined as age 15 years or less) and 69 were adult patients. 84 (51.2%) of the elective patients had day-stay procedures. For the remaining 80 patients, the mean length of inpatient stay was 1.74 days. The most commonly performed elective procedures were myringotomy with ventilation tube insertion (49, 29.9%), tonsillectomy with adenoidectomy (15, 9.1%), and adenoidectomy (11, 6.7%).

Paediatric day-stay procedures and procedures performed under local anaesthesia already have no house officer input in pre-admission. Excluding these groups, 99 patients were pre-admitted by house officers during the study period. There were 23 patients who fulfilled the criteria of having an elective procedure of less than 90 minutes duration, aged less than 60 years for women, and 50 for men, and with an ASA score of 1. This represents 23.2% of the patients treated in Christchurch in February 2008. This data is outlined in Table 2.

Table 2. Patients preadmitted by house officers (n=99)

Variables	n	%
ASA 1	33	33.3
ASA >1	66	66.7
Procedure <90min	56	56.6
Procedure ≥90min	43	43.4
Age <50M, <60F	64	64.6
Age ≥50M, ≥60F	35	35.4
Patients meeting 0 criteria	21	21.2
Patients meeting 1 criterion	26	26.3
Patients meeting 2 criteria	29	29.3
ASA 1, <50/60 years, procedure < 90min	23	23.2

Figure 1



Note: Paediatric day-stay patients and patients undergoing local anaesthetic procedures are not included in the figure above. 21 patients did not meet any of the criteria (see Table 2).

Discussion

This data shows that a modest proportion of the patients currently assessed by ORL house officers are fit, young, and attending for short procedures. These are ideal characteristics for nurse-led pre-admission, avoiding routine clerking and examination. The time freed up could allow house officers to gain more clinical experience in ORL. This should increase house officer job satisfaction, without compromising patient safety. It may also streamline the preadmission clinic, with less time spent waiting to see another staff member. This approach has been implemented in ORL departments overseas and by other specialties in New Zealand with some success.³⁻⁵

Currently at pre-admission, the house officer reviews any medical conditions, previous surgery, alcohol and smoking history, medications, and allergies. Brief cardiovascular, respiratory, gastrointestinal, and ORL examination is performed. Investigations such as a chest radiograph, ECG, or blood tests are ordered based on the results of history and examination, with reference to the Canterbury District Health Board (CDHB) guidelines.² This is documented on a 'Multidisciplinary Care Pathway' (C240198) pro forma, used for all adult patients having short-stay surgery.

Other departments within CDHB have implemented nurse-led preadmission, (e.g. Burwood Hospital for elective orthopaedic procedures). Identification of health problems prior to the procedure is achieved by sending out a preoperative questionnaire (C17001A) (Appendix 1) at the time of booking. This questionnaire covers cardiovascular, respiratory, neurological, endocrine, haematologic, and gastrointestinal problems. It also assesses functional status, as well as asking about medications and allergies, and potential anaesthetic issues. Questions mirroring those found in the questionnaire have been validated for use in a pre-anaesthetic screening questionnaire.⁶

If a patient has no serious health problems, he is seen in the preadmission clinic by a nurse specialist, with an anaesthetist available as required. Anaesthetic consent is still obtained by an anaesthetist, and surgical consent by the operating surgeon. If the questionnaire reveals more complex health problems the patient is seen in pre-admission clinic by the anaesthetist. More than 75% of elective orthopaedic patients in one study were seen by a nurse with no further medical input.³

Patient safety should not be affected by nurse-led preadmission, provided an accurate screening tool is in place to identify patients with complex health problems. This has been the experience of other elective nurse-led preadmission clinics in New Zealand.³

The in-depth anaesthetic questionnaire (C17001A) outlined above could be adopted, as an indicator of ASA score, for use in assessing patient suitability for nurse-led preadmission. Patient age and the proposed procedure should also be taken into account. Surgery for head and neck malignancy, thyroid surgery, and complex otological surgery would be excluded on the grounds of procedure length. Examples of procedures that would be appropriate include tonsillectomy/adenoidectomy, septoplasty, and myringoplasty. A list of procedures appropriate for nurse-led preadmission would need to be formulated before the program was implemented.

In an ORL preadmission clinic in the United Kingdom, the doctor added to or altered preadmission nursing management in only 26% of patients, in the absence of a protocol for ordering preoperative investigations.⁴ Preoperative investigations such as ECG, chest radiographs, and blood tests could be ordered according to CDHB anaesthetic guidelines.²

Having a strict protocol in place for ordering investigations is important from an economic perspective, as there is evidence that preadmission nurses tend to over investigate patients.⁵ A close working relationship between nursing and junior medical staff is important for efficient operation of the clinic, but if a house officer is still continuously available to see patients, one of the main benefits of the nurse-led clinic (i.e. time freed up for other tasks) is negated. Patients would still be seen by the surgeon.

In reality, the most important staff members for the patient to meet are the surgeon and the anaesthetist. There can be a significant amount of overlap in history taking and examination roles performed by these staff members, nursing staff and the house officer. The protocol outlined focuses on adult patients, as fit paediatric patients undergoing day-stay surgery at Christchurch Hospital already have no assessment by house officers. With the addition of appropriate questions regarding developmental, social and immunisation history, the protocol could also be applied to paediatric patients. This arrangement is consistent with protocols from ORL nurse-led preadmission clinics in the UK.⁵

At a time when junior staff shortages are prevalent, increasing job satisfaction among junior staff should be a priority for hospitals in New Zealand. The nurse-led preadmission process has been shown to increase house officer job satisfaction and manage reduced house officer availability in a New Zealand study.³ There is evidence that a nurse-led preadmission clinic may also improve patient satisfaction.⁷

The reduction in working hours for junior staff during the past two decades has led to 'service' roles taking precedence over 'training', particularly in high-volume outpatient specialties like ORL.⁸ A nurse-led preadmission process has been shown to increase the opportunities for junior medical staff to attend theatre and other educational opportunities, and work more closely with consultants.³

Based on the demographics of patients treated in February 2008, the estimated time saving to house officers by implementing nurse-led preadmission would be approximately 3 hours per week (based on a 30-minute preadmission duration). This is a modest time saving, but it would enable attendance at a further clinic or operating list each week.

In conclusion, there do not appear to be significant barriers to broadening the scope of nurse-led elective ORL preadmission clinics in Christchurch from paediatric day-stay procedures, and procedures under local anaesthetic, to all low risk patients, as outlined above. Existing anaesthetic and ORL documentation could be adopted for use by nursing staff without requiring significant alteration. There are a number of administrative issues that need to be addressed prior to implementation. Nurse-led preadmission is unlikely to pose a risk to patient safety, provided an appropriate patient screening process takes place.

Finally, a change in practice will allow more efficient use of house officers' time, which is vital given current junior medical staff shortages in New Zealand.

Competing interests: None known.

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