

Nurses versus clinicians—who's best at pre-operative assessment?

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Abstract

Previous studies have emphasised the lack of relevant medical history information available for patients attending for surgery. The records of 57, consecutive patients attending the nurse-led Pre-Admission Clinic (PAC) at the Oral Surgery Day Case Unit at Newcastle Dental Hospital were reviewed to determine whether nurses or clinicians were best at identifying potential medical problems. For 22 patients, nurse-led PAC interview revealed additional information not recorded by clinicians, most frequently cardiovascular disorders (9), arthritis (5) and drug allergies (2). Pancreatitis, epilepsy, recurrent epistaxis and a history of a fractured mandible were other conditions only identified following nurse consultation. Medical history taking by nurses at PAC thus provides an important screening function prior to successful ambulatory surgery.

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1. Introduction

A nurse-led Pre-Admission Clinic (PAC) was introduced in the Oral Surgery Day Unit at Newcastle Dental Hospital in 1996 in order to help reduce patient failures and cancelled operations on the day of admission. Following initial consultation, patients requiring day surgery are referred to PAC for pre-operative assessment 2–3 weeks prior to operation.

Using an established code of practice and anaesthetic guidelines, PAC has improved both patient assessment and education prior to oral day surgery [1,2]. In many hospitals pre-operative assessment has been largely taken over by trained nurses, who have been shown to perform as effectively as pre-registration house officers [3].

Previous studies of PACs have emphasised the lack of relevant information in both general practitioner referral letters and surgical out-patient histories when patients are referred for assessment before surgery [4].

Review of patients' medical histories is an integral part of our PAC process [1], and we have gained the impres-

sion that patients often reveal more details of their medical histories during nurse-led PAC consultations than when first interviewed by clinicians at out-patients. A standardised questionnaire is used by the PAC nurse to carry out a comprehensive medical review. It includes 32 specific 'YES/NO' general health questions together with space to record relevant details and any additional information (Table 1).

Most clinicians concentrate on the presenting complaint and tend to seek additional information about patients' general health in an unstructured manner, often recording their findings in a relatively unorganised fashion in the medical records.

We decided to review the clinical records of a series of consecutive patients attending for day case oral surgery, to compare the medical histories obtained by clinicians with those recorded by the nursing staff, with a view to determining which group was better at identifying medical problems.

2. Results

Fifty-seven consecutive hospital records were obtained for patients attending nurse-led PAC during a 3-month period

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Table 1
PAC general health proforma

		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Details
1.	Do you suffer from or have you had any serious illnesses?			
2.	Have you had an operation before?			
3.	Did you have any problems with the anaesthetic?			
4.	Has any member of your family had problems with an anaesthetic?			
5.	Have you any allergies (eg drugs or elastoplast)?			
6.	Are you on any regular medication?			
	FOR FEMALE PATIENTS ONLY:			
7.	Is it possible that you may be pregnant? Date of your last period:			
8.	Are you taking the contraceptive pill?			
	Do you suffer from or have you ever had any of the following?			
9.	Chest pain on exertion or at night?			
10.	A heart attack or heart murmur?			
11.	A stroke or mini stroke?			
12.	Swollen ankles?			
13.	High Blood Pressure?			
14.	Breathlessness? Asthma <input type="checkbox"/> Bronchitis <input type="checkbox"/>			
15.	Do you have blackouts or faint easily?			
16.	Have you ever had a fit or a convulsion?			
17.	Do you have any blood disorders?			
18.	Do you bleed badly or bruise without cause?			
19.	A history of thyroid disease or treatment?			
20.	Kidney or urine problems?			
21.	Jaundice?			
22.	Diabetes?			
23.	Bowel problems?			
24.	Heartburn or indigestion?			
25.	Gastric/stomach ulcers?			
26.	Any type of hernia?			
27.	Problems with mobility?			
28.	Muscle Disease?			
29.	Back problems or neck problems?			
30.	Arthritis?			
31.	Do you drink alcohol? How much?			
32.	Do you smoke? How many per day?			
	Additional Information			

between September and December 2002. All patients were initially seen in consultation clinics within the Oral & Maxillofacial Surgery department at Newcastle Dental Hospital for diagnosis and treatment planning. Twenty-five male and 35 female patients with an age range of 5–67 years were included in the study. Fig. 1 illustrates their age distribution.

Table 2 summarises the surgical procedures undertaken in this group of patients; the majority attended for surgical removal of teeth (most commonly impacted third molars), whilst others underwent detailed examination or required

biopsy or excision of various oro-facial lesions. All procedures were carried out under general anaesthesia.

In 22 patients (39%), the nursing staff in the PAC identified additional medical information which had not been recorded

Table 2
Surgical procedures

Operation	No. of patients	Percentage
Surgical removal of teeth	43	75
EUA oropharynx and biopsy	9	16
Excision facial skin lesions	5	9

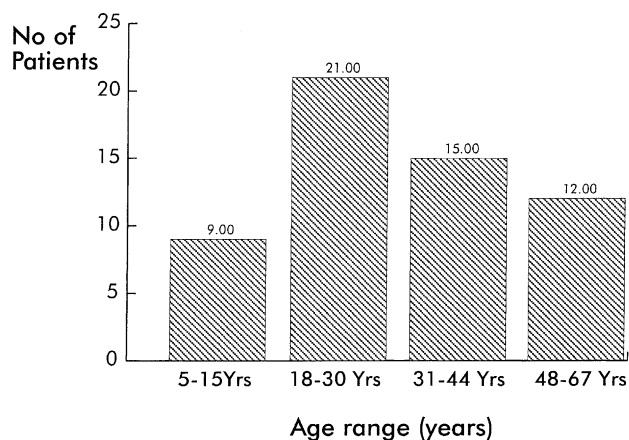


Fig. 1. Patient age distribution.

by clinicians, most commonly relating to cardiovascular disorders (nine patients) or arthritis (five patients) together with two cases of undisclosed drug allergy (Table 3).

The majority of patients were seen in the clinic by consultant oral and maxillofacial surgeons, but a proportion were 'clerked' by experienced 'middle-grade' clinicians (specialist registrar or clinical lecturer) with a smaller number assessed by house officers (Table 4).

Of the 22 patients from whom additional medical details were obtained at PAC, most had been seen initially by 'middle grade' clinicians (Table 5).

Table 3
'Additional' medical information obtained at nurse-led PAC

Medical problem	No. of patients
Cardio vascular disease	
Hypertension	4
Ischaemic heart disease	3
Heart failure	1
Anaemia	1
Skeleto-motor disorders	
Arthritis	5
Drug allergies	2
Head and neck problems	
Recurrent epistaxis	1
History of fractured mandible	1
Others	
Recurrent pancreatitis	1
Epilepsy	1
Obesity	1
Anxiety disorder	1

Table 4
Who saw the patient initially?

Grade of clinician	No. of patients	Percentage
Consultant Oral & Maxillofacial Surgeon	33	58
Registrar/Lecturer in Oral & Maxillofacial Surgery	16	28
SHO/House Officer	8	14

Table 5
Who 'missed' the medical data?

Grade of clinician	No. of patients	Percentage
Registrar/Lecturer in Oral & Maxillofacial Surgery	16	73
Consultant Oral & Maxillofacial Surgeon	6	27
SHO/House Officer	0	0

3. Discussion

Nurse-led PAC has proved popular with patients and staff within our day unit and is clearly effective in medical screening of patients [2]. It is interesting to note both the number and range of additional medical details obtained at PAC (Table 3), but it remains unclear why patients volunteer more information during nurse consultation.

It is noteworthy that four cases of hypertension were identified at PAC. High blood pressure has been reported to occur in 13% of patients in a dental hospital setting [5,6], and is clearly a significant pre-operative finding. All patients attending PAC are screened for hypertension by measurement of their blood pressure on three separate occasions. If necessary, patients are referred back to their general medical practitioner for further measurement – in a more familiar environment – and for treatment.

Other potentially important conditions not noted by the clinicians included histories of chest pain and drug allergy. We found it particularly surprising that in two patients, maxillofacial staff had apparently overlooked recurrent epistaxis and a previous mandibular fracture!

Not all the patients who revealed a history of medical problems required intervention, nor was all the additional information obtained at PAC necessarily of operative or anaesthetic relevance, but it is interesting to speculate why patients provide more information to nursing staff. A number of factors may contribute to the apparent increased reliability of PAC:

1. *Time available:* PAC appointments are booked at 30 min intervals. Whilst an interview with a generally fit patient may take significantly less time, this is nonetheless considerably longer than most clinic appointments, which generally last only 5–10 min. This lack of time pressure probably encourages a more relaxed and discursive approach to interview.
2. *Structured questionnaire:* This is designed to collect all potentially relevant information, and specifically, to identify conditions that the anaesthetist should be informed about prior to surgery. It may be that by combining general questioning with specific systems review PAC acquires additional patient information, although this may be less appropriate for patients with complex medical backgrounds.
3. *Purpose of visit:* PAC appointments are designed with the specific purpose of ensuring patients' fitness for general

anaesthesia. In contrast, maxillofacial clinicians are concerned primarily with clarification of the presenting complaint and treatment planning.

4. *Patient–staff relationships*: It is probably the case that patients feel more at ease conversing with a nurse rather than the clinician planning their surgical treatment. This may be helped by nurse communication skills, more general discussion of health issues (as opposed to focusing on specific problems) and patients feeling more relaxed about both answering and asking medical questions.
5. *Organisation of PAC appointment*: By the time patients reach PAC they have usually had time to think about their initial meeting with the clinician. It is well recognised that many patients are unable to recall a significant part of their discussion with a clinician (perhaps because of anxieties over hearing a potentially adverse diagnosis) and the opportunity for reflection before attending PAC may encourage them to talk more freely.

It is interesting that whilst the majority of patients (33) were initially seen by consultant oral & maxillofacial surgeons, it was within the 16 patients ‘clerked’ by ‘middle-grade’ clinicians that most additional medical data was discovered at PAC. The most junior clinicians saw fewer patients (8) but appeared to miss no medical details (Tables 4 and 5).

Specialist registrar and clinical lecturer staff are likely to have more knowledge than house officers and are usually more familiar with clinical problem solving and treatment planning. This means they usually work at a faster pace and see more patients. Perhaps the relative lack of experience of these ‘middle-grade’ clinicians, compared with consultant

staff, may account for the unusually high number of medical details missed in their patients (Table 5).

4. Conclusions

Nurses and clinicians working together and utilising their complementary skills are essential features of modern ambulatory surgery. We believe this study clearly demonstrates that PAC provides a reliable and efficient means of pre-operative assessment. Not only does it improve theatre utilisation (by minimising non-attendance of patients) but it also helps to ensure that significant details of patients’ histories are not overlooked. In this way, nurse-led PAC undoubtedly contributes to greater patient safety during anaesthesia and surgery.

References

- [1] Clark K, Voase R, Fletcher IR, Thomson PJ. Improving patient throughput for oral day case surgery. The efficacy of a nurse-led pre-admission clinic. *Ambul Surg* 1999;7:101–6.
- [2] Clark K, Voase R, Cato G, Fletcher IR, Thomson PJ. Patients’ experience of oral day case surgery: feedback from a nurse-led pre-admission clinic. *Ambul Surg* 2000;8:93–6.
- [3] Kinley H, Czoski-Myrray C, George S, McCabe C, Primrose J, et al. Effectiveness of appropriately trained nurses in preoperative assessment: randomised controlled equivalence/non-inferiority trial. *Br Med J* 2002;325:1323–6.
- [4] Reed M, Wright S, Armitage F. Nurse-led general surgical pre-operative assessment clinic. *J R Coll Surg Edinb* 1997;42:310–3.
- [5] Carter LM, Godlington FL, Meechan JG. Screening for hypertension in dentistry. *J Dent Res* 1997;76:1037 [Abstract 152].
- [6] Greenwood M, Lowry RJ. Blood pressure measuring equipment in the dental surgery: use or ornament? *BDJ* 2002;193:273–5.