

Nurse practitioners in the accident and emergency department

M. R. JAMES & N. PYRGOS

Department of Accident and Emergency Medicine, Lincoln County Hospital, Lincoln, England

SUMMARY

The theoretical management of walking wounded patients by experienced nurses was compared with that of middle-grade doctors.

Out of 400 patients seen, 332 were assessed by the nurses. The theoretical management by the nurses of 298 of these patients was satisfactory. The nurses mismanaged 12 of the patients according to local practice. They also requested X-rays in 22 more patients than the doctors, none of whom returned with a fracture. Out of the patients suitable to be seen by the nurses 94% said that they would use a nurse practitioner system if introduced. The theoretical waiting-time saving for the patients during the trial was 11 min.

The authors recommend that if nurse practitioners are introduced in this country there should be an adequate training programme along nationally debated guidelines.

INTRODUCTION

The increase in attendances in many accident and emergency departments and increasing difficulty in medical staffing is resulting in longer waiting-times for patients. Several solutions have been put forward, including the reduction of inappropriate attenders, financial deterrents, general practitioners (GPs) resident in accident and emergency departments and the introduction of nurse practitioners. This latter option has been pioneered in Oldchurch Hospital (Head, 1988).

The concept of nurse practitioners is not new: nurses already treat patients in industry and in GPs' surgeries, therefore it seems logical that they should do so in the accident and emergency department. This trial was designed to assess whether the investigations and treatment suggested by experienced nurses and doctors were the

same. In addition, we wished to ascertain whether there was any saving of time for patients if nurses undertook treatment.

The legal implications of nurses practising independently in this way are considerable but are covered in *DHSS Health Circular HC (77) 22*, which makes the Health Authority liable for the extended role of the nurse. The nurse must be specifically and adequately trained for the role and the training must have been recognized by the Employing Authority. The other conditions are that the role has been recognized by the professions and the Employing Authority, and is one that can be properly delegated to a nurse.

METHOD

In the Lincoln Accident and Emergency Department there are four nursing sisters who have worked in accident and emergency departments for more than 5 years. For the duration of the trial, these sisters saw the patients and recorded their findings and theoretical management plan. They did not institute any treatment. A middle-grade doctor then examined and treated the patients without being aware of the nurse's findings. The patients were seen by the doctors at their original position in the patient queue in order to assess any potential saving in waiting time. The patients were given the option not to take part in the trial. After the nurse had assessed them they were asked if they would be happy to be seen and treated by a nurse if she was appropriately trained.

The patients seen by the nurses were limited to walking wounded over the age of five who did not have any head, eye, chest or abdominal complaints apart from superficial wounds to the skin.

Each nurse saw 100 walking wounded patients. In addition to clinical details she recorded any X-ray that she would request and if no X-ray was required what treatment she would institute. If she believed that the management of the patient was beyond her capability then she referred the patient 'directly to the doctor'. Each patient was examined and treated by one of six middle-grade doctors who were either post-fellowship registrars or full time clinical assistants in accident and emergency.

The patients' arrival time and their waiting-time until seen by the nurse and the doctor were recorded to assess any potential saving to the patients.

The notes of those patients for whom an X-ray was requested by the nurse but not the doctor were reviewed after one month to see whether a return attendance had revealed a fracture.

RESULTS

Of the total of 400 patients seen, three refused to take part in the trial. Out of the remaining 397 patients, 65 were referred directly to the doctor. The nursing staff therefore saw and assessed 332 patients (Table 1).

Table 1 The doctors' and nurses' management of the 400 patients involved in the study

Refused to take part in study	3
Referred directly to doctor	65
X-ray requested by nurse and doctor	150
X-ray requested by nurse only	22
X-ray requested by doctor only	18
X-ray not requested by either nurse or doctor	142
Total number of patients	400

There were 150 patients whom both the nurse and doctor thought needed an X-ray. The nurses' requests differed from the doctors' in 18 patients. The differences were usually in not sufficiently specifying the area to be X-rayed, such as a request for a hand rather than a specific finger.

There were 22 patients for whom the nurse would have requested an X-ray but who were not X-rayed by the doctor. None of them had returned within one month with further problems from the injury.

Conversely, there were 18 patients who had an X-ray requested by the doctor but whom the nurse did not think warranted an X-ray. Of these 18 patients, four had a fracture revealed on the X-ray. One of the remaining 14 patients with normal X-rays had abnormal clinical findings which had not been observed by the nurse.

The remaining 142 patients were thought not to require an X-ray by either the doctor or the nurse. In 137 of these patients the doctor's and nurse's diagnosis coincided, but five of these 137 patients received treatment that was thought to be unsatisfactory according to local practice. Of the five patients who had a different diagnosis recorded by the sister one had the same treatment. Of the four patients remaining two received unsatisfactory treatment.

In 12 out of the 397 patients seen by the nurses the investigations or treatment suggested by the nurses differed significantly from that of the doctor (Table 2).

Of the 332 patients assessed by the nurses 311 (94%) said that they would be happy to be treated by a suitably trained nurse for appropriate conditions if this was ever implemented in the department.

The average waiting time to see the doctor for the patients taking part in the trial was 28 min, and the average time to see the nurse was 17 min, a theoretical saving of 11 min.

DISCUSSION

During the period of the study the nurses performed well in treating most of the patients; only 3% were mismanaged. They were assessed against experienced doctors and had had no specific training for the role. The numbers of mismanaged patients would have been reduced from 12 to eight if the criteria for patient selection used at Oldchurch Hospital were applied (Table 3). This would have included three of the four

Table 2 Details of those patients who were mismanaged by the nurses according to established policy within the department

	Age (years)	Duration of symptoms (days)
1. Missed fractured hallux	37	10
2. Missed fractured nose + septal deviation	21	1
3. Missed greenstick fracture of radius	9	0
4. Missed greenstick fracture of radius	12	"
5. Missed ganglion on flexor tendon	37	7
6. Tetanus toxoid given to patient stated to be allergic to it	52	0
7. Contaminated wound—no antibiotic given	38	"
8. Tetanus toxoid booster missed	43	"
9. Tetanus toxoid booster missed	28	"
10. Flammazine given for allergic rash	20	"
11. Dog bite—no antibiotic given	44	"
12. Infected wound—no antibiotic given	43	1

Table 3 The types of patients seen and treated by the nurse practitioners at Oldchurch Hospital

1.	Minor injuries—walking/wheelchair
2.	Over 14 years old
3.	No head injuries
4.	No chest pains
5.	No abdominal pains
6.	No assaults

fractures missed leaving the patient with the fractured toe undetected. Two of the patients would have been excluded because they were under 14 years old and one because she had sustained a head injury. The patient who was said to be allergic to tetanus toxoid would hopefully not have received it because any drug therapy would have to be signed for by a doctor.

The nurses' examination technique relied more on experience and intuition than on method. They all needed to undergo a training programme to give them a greater insight into the medical diagnostic approach. And, although the format of the training would have to be nationally debated, it could be based on the American model where the training for enrolled nurse practitioners is about 9 months (Geolot *et al.*, 1977). This course consists of a combination of academic work and supervised secondments in approved hospitals. There are now several formal training schemes in the USA to complete this training but acceptance of the role of nurse practitioner by other health workers is slow (Hayden *et al.*, 1982).

The potential time-saving to patients was small because the waiting-time to see the

doctor in this department is already short. Possibly there would be more substantial savings at peak periods but the busy times are often when an experienced nurse is unavailable to take on this further role. The patients who would have been sent to X-ray by the nurse and for whom the doctor would have required an X-ray (150) were potentially saved the waiting-time to see the doctor initially. The 22 whom only the nurse would have X-rayed and in whom no subsequent fracture was found would all have been X-rayed unnecessarily. These findings are consistent with those of Jones (1986), who found that of 641 patients seen by nurses in four accident and emergency departments 46.7% would have spent less time in the accident and emergency department if the nursing staff had been able to intervene in management and treatment. At Oldchurch Hospital there has been a marked reduction in waiting time since the introduction of the role of nurse practitioner (Head, 1988).

The patients seemed to be happy with the proposed arrangement: 94% of those suitable to be treated by the nurses said that if a nurse practitioner system was introduced they would agree to use it. This finding is consistent with the findings at Oldchurch Hospital where 91% of patients seen by the nurse practitioner were satisfied with the management (Head, 1988). The medical establishment appears to be less ready to accept extending the role of the nurse towards that of the nurse practitioner. Yates (1987) found a cautious interest in extending the role of the nurse but the majority of consultants he surveyed thought that 'nurses should not step outside their traditional role.'

The number of errors made by the nurses could be reduced by limiting the type of patients they saw but most of the mistakes could have been avoided by effective training. At a time when the nurse's role is being extended the concept of the nurse practitioner in accident and emergency should be seriously considered. In order to fulfill the criteria of HC (77) 22 and to reduce errors to a minimum an adequate training programme would be necessary. The feelings of the nursing staff should also be taken into account. There are considerable implications in terms of training, responsibility and stress. Many do not wish to extend their role closer to that of the doctor in order to fill in for inadequate medical staffing levels.

ACKNOWLEDGEMENTS

The authors wish to thank Dr C. Abbas, Mr P. Ancill, Dr V. Pyrgos, Mr T. Rajah, Dr R. Sultan and SR R. Cook, SR J. Henderson, Mrs S. Lyons, SR M. Rawdon, SR R. Telfer for their participation in this study.

REFERENCES

- Department of Health and Social Security (1977) *Health Circular. HC (77) 22: The Extending Role of the Clinical Nurse: Legal Implications and Training Requirements*. HMSO, London.
- Geolot D., Alongi S. & Edlich R. F. (1977) Emergency nurse practitioner: an answer to an emergency care crisis in rural hospitals. *Journal of the American College of Emergency Physicians* 6, 355-7.

- Hayden M. L., Davies L. R. & Clore E. R. (1982) Facilitators and inhibitors of the emergency nurse practitioner role. *Nursing Research* **31**, 294–9.
- Heads S. (1988) Nurse practitioners: the new pioneers. *Nursing Times* **29 June**, 27–8.
- Jones G. (1986) Behind the times. *Nursing Times* **15 October**, 30–3.
- Yates D. W. (1987) Nurse practitioners for accident and emergency? *British Journal of Accident and Emergency Medicine* **2**, 10–11.