

A particular aspect of the problem posed by the overwhelming number of joints needing replacement is that of which surgeon should carry out the operation. Joint replacement procedures are not always technically simple, and it is reasonable to think that the failure rate expressed as a percentage of all joints operated on would be lower if the operations were to be confined to surgeons specialising in these procedures. On the other hand, if this were to be done the number of operations performed in the National Health Service annually would fall. If as happens at present all surgeons (including registrars at the start of their training in

orthopaedics) were to be pressed into service to carry out these operations, the total number of procedures done would be greater but the failure rate expressed as a percentage of the total of operations carried out would be higher. The choice may be summarised by saying that for 100 patients needing a joint replacement the first approach to the problem might provide successful surgery for 59, failure for one, and no surgery at all for 40. The second approach to the problem might provide successful surgery for 90 and unsuccessful surgery for 10. Which is to be preferred?

General Practice Observed

Nurses and nursing in primary medical care in England

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Summary

In 1974 we sent questionnaires on attachment and employment of nurses to 9214 general practices in England. There were 7863 replies (85%), of which 551 were excluded from the study. A total of 2654 nurses were directly employed by 24% (1774) of the practices, and 68% (4972) had attached nurses. Practices in health centres were larger and had greater nursing resources than those in other premises. We suggest that practices may employ nurses to compensate for ineffective nursing attachments, and we conclude that general-practice-employed nurses are becoming "professionalised."

Introduction

Since the concept of "the team" emerged in primary care in about 1967^{1, 2} an apparent ambiguity in its nursing structure has become increasingly evident. Apart from the now widespread "attachment" to general practices of nurses employed by area health authorities, general practitioners have themselves recruited and employed nurses, and since 1966 have received reimbursement of 70% of these "practice" nurses' salaries from the National Health Service. Extensive studies³ of the work of both kinds of nurse have shown that health authority nurses have worked mainly in patients' homes, whereas practice nurses have worked mainly in surgeries and health centres.⁴

We did not know how many practice nurses there were, and we assumed that they might be employed mainly in practices with no attached health authority nurses. Returns made by

general practitioners in England and Wales since 1968 indicate that the total hours worked by practice nurses have increased yearly by 18%, on average,⁵ while the total hours worked by health authority nurses increased yearly by only 5%.⁶

A new feature of the work of health authority nurses became apparent in 1973 when the number of first treatments given by them in health centres and general practices to patients aged under 65 was found to be almost double the number given in patients' homes,⁷ with an increase of 31% over 1972. Thus it was surprising that the number of full-time-equivalent practice nurses was also rapidly increasing and that they seemed to be developing a corporate identity and aspirations towards specialised training and standardised terms of employment.⁸

Because of these apparent anomalies we decided to investigate the nursing, reception, and administrative duties of qualified nurses employed by general practitioners in England.

Method

After carrying out a pilot study of 152 practices in Scotland, in the autumn of 1974 we sent a short questionnaire to each partnership, group practice, and single-handed practice on the lists of family practitioner committees in England asking for as complete an enumeration as possible of the nurses they employed. We used a computer to handle the data returned, to organise the sequential posting of the 9214 questionnaires in eight weekly batches, and to monitor the returning questionnaires. This greatly simplified sending to non-responders a first and a second reminder 23 and 46 days respectively after each posting. We telephoned a 10% random sample of the remaining non-responders to ask for the necessary information.

Results

Questionnaires were returned by 7863 of the 9214 practices, giving a response rate of 85.3%. After we had excluded 551 returns that were duplicate or from special practices, such as those in universities, we found that 88% (6435) of the remaining 7312 practices occupied privately owned premises, while 12% (877, with 2911 principals) were based in health centres. Fifty-seven practices occupying both types of premises were treated as health-centre practices in our analyses. Health-centre practices had on average 3.4 principals, while practices in other premises had 2.4 principals per practice. We used the number of principals as an estimate of practice size.

A total of 2654 practice nurses were directly employed by 24% (1774) of the 7312 practices. Two-thirds of the practices employed

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TABLE I—Number of practice nurses employed by 1774 general practices in England in 1974

	No of nurses employed									Total
	1	2	3	4	5	6	7	8	13	
No (%) of employing practices	1199 (67.6)	375 (21.1)	136 (7.7)	43 (2.4)	13 (0.7)	3 (0.2)	3 (0.2)	1 (0.1)	1 (0.1)	1774 (100.0)
No (%) of nurses employed*	1199 (45.2)	750 (28.3)	408 (15.4)	172 (6.5)	65 (2.5)	18 (0.7)	21 (0.8)	8 (0.3)	13 (0.5)	2654 (100.0)

*About 490 nurses were employed among the 1351 practices that did not respond to the questionnaire.

TABLE II—Combinations of attachment and employment by type of premises. Figures are percentages with whole numbers in parentheses*

Practices with/without attached nurse	Health centres			All practices	Other premises		All practices	
	Employed nurse		Yes		Employed nurse			No
	Yes	No			Yes	No		
With	21.8 (189)	70.0 (606)	} 100.0 (n = 866)	18.3 (1148)	49.6 (3106)	} 100.0 (n = 6265)		
Without	2.2 (19)	6.0 (52)		6.4 (400)	25.7 (1611)			
$\chi^2 = 0.3$; NS				$\chi^2 = 36.9$; $P < 0.001$				

*For 181 practices the data were not applicable or not obtained.

only one nurse, and one-fifth employed two nurses, but one practice employed 13 nurses as well as having nurses attached (table I). In 145 cases a nurse was the wife of a general practitioner. Non-responding practices employed about 490 nurses. Thus in 1974, general practitioners in England were employing over 3100 qualified nurses.

Health authority nurses were attached to 68% (4972) of the 7312 practices, and these practices were more likely to employ nurses as well ($\chi^2 = 33.0$; $P < 0.001$). Table II, however, shows differences in this and other respects between health centres and other premises. Health centres had more practices with attached nurses (92%), whereas 26% of the practices in other premises had neither attached nor employed nurses, which suggests that their patients may be less well served for nursing.

The rates of both attachment and employment of nurses increased with size of practice independently of premises (table III), but whereas the rate of nurse-employment rose to over 50% of the practices with six or more principals in other premises it remained constant at about 28% of the practices with three or more principals in health centres. Not only the rate but the number of nurses employed in each practice increased with practice size, from an average of 1.15 nurses in single handed practices to 2.32 in practices with seven or more principals.

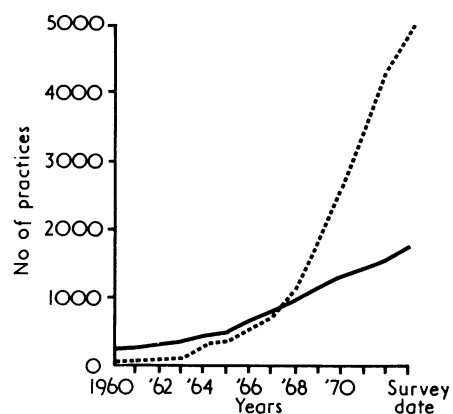
TABLE III—Rates of attachment and employment of nurses with size of practices (as determined from numbers of principals). Results expressed as percentages of practices*

	No of principals							Total practices
	1	2	3	4	5	6	≥ 7	
Health Centres } Attached	80.3	88.1	93.6	97.6	94.3	94.6	91.8	794
} Employed	12.3	15.9	26.4	31.1	27.6	26.8	28.6	206
Other premises } Attached	49.0	63.6	80.7	85.2	89.6	87.5	79.5	4229
} Employed	14.4	18.9	29.1	38.2	46.0	55.0	52.3	1542

*For 541 practices the data were not applicable or not obtained.

Independently of size, practices in health centres employed an average of 1.74 nurses, while those in other premises employed an average of only 1.47. The existence of a nursing attachment had no effect on the number of nurses employed. Of the 1199 practices employing a single nurse only 296 (25%) did not have an attached nurse. Thus 89% (2358) of all practice nurses had an opportunity to contact a nursing colleague of one kind or another.

The figure shows the trends in employment and attachment of nurses since 1960. Only experimental schemes of attachment existed in 1960, and the major increase in attachments coincided with the Health Services and Public Health Act 1968, which encouraged this relationship between general practitioners and health authorities. Nevertheless, 64% of practices with attached nurses had their first nurse attachment in 1970 or after. By contrast, 147 practices were employing nurses before 1955, and one practice had done so contin-



Trends of employment and attachment of nurses in general practice from 1960 to 1973. Dashed line indicates attachment of health authority nurses. Solid line indicates employment of practice nurses.

uously since 1910. The increase in 1966 in the rate of employment of nurses coincided with the implementation of the "charter" for general practitioners. The figure suggests that as nurses are attached to 70% of all practices in England a limit to creating further attachment is approaching but that this does not yet apply to the employment of practice nurses.

CHARACTERISTICS OF PRACTICE NURSES

Most (89%) of the practice nurses were State-registered or registered general nurses, though 10% were State-enrolled nurses, 16% State-certified midwives, 4% registered sick children's nurses or registered fever nurses, 2% certified district nurses, and 1% certified health visitors.

The proportions of State-registered and State-enrolled nurses did not differ greatly from those in Hockey's sample of 446 health authority nurses.⁹ Forty employees claimed as nurses by general practitioners were excluded from the analysis because their qualifications were not registrable. A total of 502 nurses (19%) held more than a basic qualification, however, including 443 (17%) with two qualifications and 59 (2%) with three or more. Only nine of the nurses were men.

On average practice nurses worked 23.1 hours a week, which included nursing duties (11.7 hours), reception (7.1 hours), and administration (2.7 hours). The distribution of nursing hours and total hours worked is shown in table IV. Although 294 nurses (11%) did no nursing 752 (29%) did nothing but nursing, and they differed greatly from the remainder. They were more likely to be State-registered nurses ($\chi^2 = 48.1$; $P < 0.001$) and they included half of the

TABLE IV—Nursing hours/week and total hours/week worked by nurses. Figures are numbers (percentages) of nurses

	No of hours weekly								Total
	0	1-4	5-10	11-16	17-22	23-28	29-34	≥35	
Nursing	294 (11.4)	470 (18.3)	672 (26.1)	429 (16.7)	355 (13.8)	164 (6.4)	84 (3.3)	105 (4.1)	2573 (100.0)
All activities		92 (3.6)	315 (12.2)	398 (15.5)	602 (23.4)	360 (14.0)	241 (9.4)	565 (22.0)	2573 (100.0)

nurses with three or more qualifications. A significantly higher proportion of them were employed by health centre practices ($\chi^2_1 = 26.5$; $P < 0.001$) and by practices with four or more principals ($\chi^2_1 = 174.3$; $P < 0.001$). They were more often employed by practices that also had attached nurses ($\chi^2_1 = 7.9$; $P < 0.01$). Registered nurses spent more time in nursing duties (11.9 hours) than enrolled nurses (9.5 hours) but worked a shorter week on average (22.8 hours) than enrolled nurses (25.8 hours). The proportion of registered nurses was smaller in practices with fewer than four principals ($\chi^2_1 = 13.5$; $P < 0.001$).

The total hours worked by the practice nurses did not depend on the practice premises (health centre or other) or on the size of practice. Nevertheless, table V shows that the average time spent in nursing work was independently affected by both these variables and the proportion of a practice nurse's time spent in nursing is greater in health-centre and larger practices. Since their total hours remain unchanged the difference must reflect a change in the balance of activities between what are, a priori, "more" professional and "less" professional duties.

TABLE V—Average weekly nursing hours per practice nurse according to practice premises and practice size

	No of principals		All sizes
	1-3	4 or more	
Health centre	12.7	16.5	14.8
Other premises	9.1	13.9	11.2
All premises	9.5	14.3	11.7

Discussion

The high response to our survey gives what is probably the best information available about the development of both employment and attachment of nurses in general practices in England. More nurses were employed by general practitioners than was generally expected and, excluding health visitors and midwives, they numbered in 1974 about 20% of the nurses working in the community. Our study will also dispel some myths—for example, very few nurses were the wives of general practitioners, and even fewer were, by the usual criteria, unqualified. They spent more time in nursing than in any other kind of activity. It could also be argued that the additional time spent in reception may not be an improper use of their training and experience.

Contrary to expectation, practices with attached nurses were more likely also to employ practice nurses, although this was not the case in the relatively few practices occupying health centres. Unfortunately we cannot specify fully which came first in each practice, attachment or employment, but our findings refute the belief that nurses are generally employed when there is no attached health authority nurse. Nevertheless, possibly nurses are employed by general practitioners in other premises because the existing nursing attachments are ineffective and the attached nurses have created an awareness of the deficiencies.

In health centres the rate of nurse attachment was very high and was not associated with the rate of nurse employment. These practices were larger than those in other premises, however, and they all employed more nurses who spent proportionately more of their time in nursing work—presumably in the treatment rooms—than nurses in other premises. This might partly be explained by differences in the availability of resources. In 1971¹⁰ a treatment room was available to 71% of

doctors in health centres but to only 31% of doctors in other premises. Apart from this, increase in the size of an organisation tends to promote differentiation of function and specialisation among its members—a process that was already discernible among general practice staff in 1969.¹¹ In health centres this tendency would be increased by the presumably bureaucratic nature of their administration, and the rational allocation of resources for "non-nursing" functions such as reception and administration would therefore tend to free the nurses for nursing duties.

State-registered nurses were more often employed in large practices and worked more hours in nursing than State-enrolled nurses. They also formed a higher proportion of the nurses who did only nursing work. Together with their claims to special status⁸ (recently acknowledged by the provision of access for them to in-service training given by area health authorities)¹² our findings suggest that the social process of "professionalisation" may be occurring among practice nurses. If so, then their occupational identity will have been established in the absence of any career opportunities such as advancement in nursing administration. Practice nurses in England therefore differ from health authority nurses, for whom promotion is within a management hierarchy. Instead they may more closely resemble nurses in North America, whose careers are centred on the development and elaboration of clinical nursing roles by specialisation and innovation.¹³

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Are onions and garlic beneficial for patients with a raised risk of developing heart disease?

There is no scientifically based evidence to support the suggestion that onions and garlic may benefit such patients.