Interprofessional collaboration in primary health care

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SUMMARY. A study of interprofessional collaboration involving 148 general practitioner and district nurse pairs and 161 general practitioner and health visitor pairs was undertaken in 20 health districts throughout England in 1982–83. Data were collected using personal interviews and a prospective record of referrals and consultations. The ratings of collaboration recorded showed that only 27% of general practitioner–district nurse pairs and 11% of general practitioner–health visitor pairs were working in partial or full collaboration. Structural arrangements such as attachment, the number of general practitioners that community nurses work with, and working from the same building were found to be strongly associated with collaboration.

Introduction

SINCE the inception of the National Health Service it has become generally accepted that the future development and efficient delivery of primary health care depends on cooperation between the various health professions and occupational groups working within primary health care. This is reflected in the literature on 'teamwork'[1] and the importance placed on interprofessional collaboration in primary health care by recent government publications.[2-5]

Much of the literature concerning interprofessional collaboration within primary health care is not empirically based. Nevertheless, a number of studies have highlighted potential barriers to successful collaboration. Attention has been drawn to the futility of promoting interprofessional collaboration without giving different primary health care professionals equal status, prestige and power.[6] Davies[7] has suggested that working relationships in primary health care reflect the broader social divisions of class and gender as well as the hospital-centred experience of health professionals in which medical power predominates.

There have been a number of changes in primary health care over the last 40 years, such as the attachment of community nurses to general practice, the growth of group practices and the development of health centres. However, these changes have not led inevitably to patterns of joint working.[8]

The aims of this study were to ascertain the extent of collaboration throughout England among district nurses, general practitioners and health visitors, the three most numerous health professionals working in primary health care, and to develop indices of collaboration.

Method

Population and sampling

Since collaboration is an attribute of groups rather than individuals, the target population in this study was pairs of professionals sharing the care of some patients. The pair was known as a 'potential collaborative unit' and two types were studied: general practitioner–district nurse pairs and general practitioner–health visitor pairs.

First, district health authorities were stratified by the attachment rates of district nurses and health visitors to general practices, by the proportion of general practitioners working in health centres, and by whether the district was predominantly urban or rural. A random sample of 20 districts was then produced. There were no significant differences in the characteristics of the sampled and non-sampled districts (chi-square test).

Secondly, in order to avoid the bias inherent in a sampling method based on general practices a technique was used which derived random samples from each of the three professional groups studied. Lists of district nurses and health visitors were obtained from each of the 20 districts and stratified by profession, the number of hours worked and whether attached to a general practice. From these lists three district nurses and three health visitors from each district were randomly sampled. Lists of general practitioners were obtained from the appropriate family practitioner committee and stratified by practice size and whether the practice was in a health centre. From this list six doctors from each district were randomly sampled. These stratifications ensured that the sample contained the same proportion in each category as existed in the district as a whole. These 12 first members in each district were invited to participate in the study and asked to complete a short questionnaire. General practitioners estimated what proportions of nursing and health visiting time devoted to their patients had been contributed by different district nurses and health visitors while community nurse respondents estimated the proportion of their time spent with patients of different doctors.

Thirdly, a second member for each potential collaborative unit was randomly sampled from the lists provided by the first members with probability proportional to the estimated proportion of time provided by each community nurse to each general practitioner. Eighteen pairs were sampled in each district. Non-responders were replaced whenever possible from the same stratum.

This sampling procedure ensured that the description of collaboration would not be biased toward high collaboration or toward low collaboration and would reliably represent the position throughout England.

Data collection

A structured interview questionnaire was used to collect demographic data and information about collaborative activities,

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Levels of collaboration	*Definition*
1. Isolation	Members who never meet, talk or write to one another
2. Encounter	Members who encounter or correspond with others but do not interact meaningfully
3. Communication	Members whose encounters or correspondence include the transference of information
4. Collaboration between two agents	Members who act on that information sympathetically; participate in patterns of joint working; subscribe to the same general objectives as others on a one-to-one basis in the same organization
5. Collaboration throughout an organization	Organizations in which the work of all members is fully integrated

Figure 1. *Five-point scale of collaboration.*

organization of the respondent's work, background, working environment and working relationship with the other member of the pair. At the end of the interview the interviewer (a member of the research team) rated the closeness of the respondent's working relationship with his or her partner on a five-point scale of collaboration[9] (Figure 1) based on variables produced for the interview questionnaire as well as general attitudes towards his or her partner revealed by the respondents. When all interviews in a particular health authority had been completed, the interviewers met to discuss the ratings that had been made for each member of a potential collaborative unit and they then made a judgement as to the 'rating' to be given to the pair itself.

In addition, each respondent was asked to complete a prospective record in order to provide an account of what respondents actually did in the working week following the interview, in terms of the type of patients seen and referrals made and received. Table 1 shows the response of subjects to the data collection instruments. There were no differences among the district nurses and health visitors between those interviewed and those who refused with respect to gender or working hours. The doctors who were interviewed did not differ from those who refused in respect of the number of partners they had, their position in the practice list, their gender, or whether they practised in a health centre. However, those who had qualified before 1950 were more likely to refuse than those who had qualified in 1950 or later.

Table 1. Response rates to the data collection instruments.

	District nurses	General practitioners	Health visitors
Target number of respondents	180	240	180
Number of respondents approached	203	340	205
Number (%) who agreed to take part	173 *(85)*	316 *(93)*	180 *(88)*
Number (%) interviewed	168 *(97)*	294 *(93)*	176 *(98)*
Number (%) completing prospective record	149 *(86)*	199 *(63)*	164 *(91)*
Number (%) of pairs responding	148 *(82)*	161 *(89)*	

Results

Patient encounters

Data from the prospective record showed that health visitors saw mainly younger patients up to nine years of age, district nurses mainly patients aged 60 years or over and doctors encountered patients in all age groups (Table 2). The pattern was the same for referrals made and received by respondents.

Professional interaction

Health visitors were more involved in clinics than district nurses or doctors. Most clinics attended by health visitors were provided by the health authority and the professional interaction involved was usually with professionals other than district nurses or general practitioners. The majority of respondents attended meetings with members of their own profession but only approximately half of each profession attended interprofessional meetings. More health visitors attended interprofessional meetings than district nurses or general practitioners but these were more likely to be with other professional groups.

Table 2. Age of patients seen by respondents in one week.

Age of patients (years)	Percentage of patients seen: District nurses ($n = 9243$)	General practitioners ($n = 21\,226$)	Health visitors ($n = 11\,437$)
0–9	*2*	*13*	*62*
10–19	*1*	*10*	*6*
20–39	*7*	*28*	*27*
40–59	*12*	*20*	*2*
60–79	*48*	*23*	*2*
80+	*30*	*6*	*1*

n = total number of patients seen.

Joint working

District nurses and health visitors worked with a median of five doctors and with one practice but the range was from one to 50 doctors and from one to 17 practices. In contrast general practitioners worked with a median of two district nurses and two health visitors and with a maximum of 10 district nurses and 10 health visitors. The community nurses who worked with a large number of doctors tended to be assigned to a geographical area rather than a general practitioner or practice. Respondents were asked to identify the length of time they had worked with their potential collaborative unit partner and a median of three years was reported.

Proximity

Nearly 40% of respondents reported being based in the same building as their partner. These respondents tended to work from health centres or practice premises where office space had been provided for community nurses. Understandably, community nurses who were attached to a practice were more likely to work from the same base as the doctor. However, approximately one quarter of respondents were based more than a mile from the partner's base. It was in heavily populated urban areas that community nurses tended to be based some distance away.

Consultations and referrals

The majority of respondents reported consulting and being consulted by their partner (Table 3). However, health visitors reported a lower level of consultation by their partner than the other two groups.

In this study referral was defined as 'asking a colleague to

Table 3. Respondents' perceptions of whether they consulted their partner and whether they were consulted by their partner.

	Respondent and partner			
	District nurse and doctor	Doctor and district nurse	Doctor and health visitor	Health visitor and doctor
Percentage of respondents who consulted partner	*93* (*n*=167)	*85* (*n*=166)	*77* (*n*=173)	*83* (*n*=178)
Percentage of respondents consulted by partner	*82* (*n*=166)	*91* (*n*=163)	*85* (*n*=168)	*63* (*n*=178)

n = number of respondents.

take over some aspect of patient care temporarily' or to 'accept the care of a patient entirely for a period of time'. As with consultations, between 80% and 90% of respondents referred to or received referrals from their partner. However, the majority of respondents only made or received referrals between one and five times in the four weeks prior to the interview. District nurses reported making and receiving the largest proportion of referrals to and from general practitioners. In contrast, health visitors reported receiving the largest number of referrals from diverse nursing sources such as other health visitors, district nurses, midwives and school nurses. The larger proportion of referrals made by health visitors was to doctors. General practitioners reported both making and receiving most referrals to and from other doctors, but made substantially more referrals than they received.

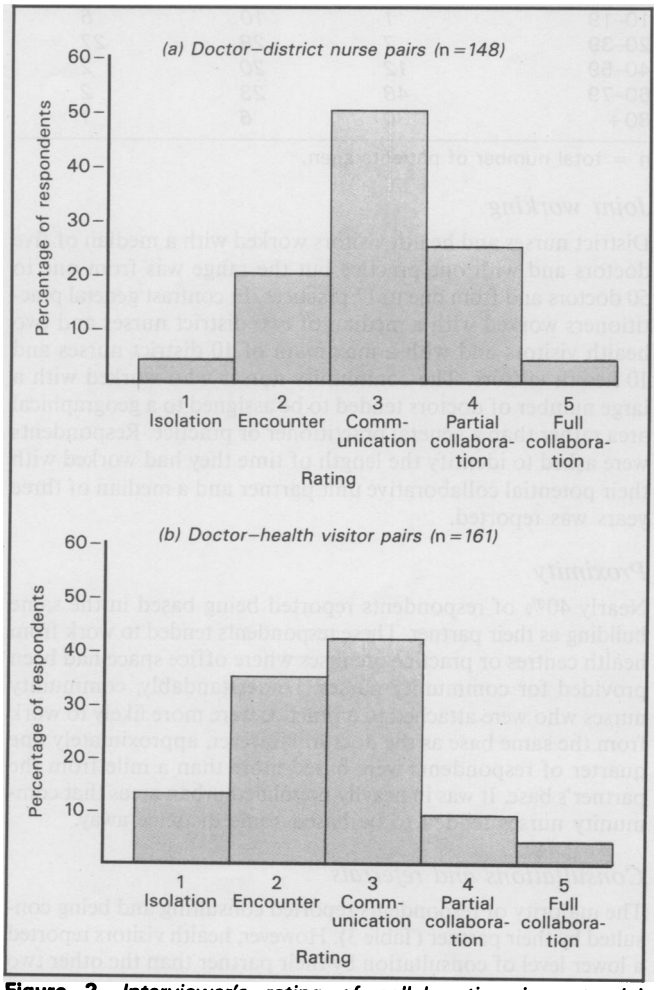

Figure 2. *Interviewer's rating of collaboration in potential collaborative units using the five-point scale of collaboration.*

(a) All potential collaborative units

Attachment of community nurse to doctor's practice
The lower the number of general practitioners community nurses worked with
Based in the same building
The longer partners were in the building at the same time
Interprofessional meetings where both partners present
High frequency of consultations and referrals
Shared decision-making following consultation
Chance meetings
Working in a district stratified as rural
Comment on each others work

(b) Doctor–health visitor pairs only

The lower the number of practices health visitor works with
The longer the health visitor had worked with the doctor
More hours with doctor's patients
Appropriate referrals from doctor
Doctor understands health visitor's role
Clinics where both partners present
Mutual consulting of records
Health visitor writes in doctor's records
Health visitor sees relationship as friendly and informal
Mutual use of first names

Figure 3. *Variables which were associated with higher ratings of collaboration.*

Collaboration

Using the five-point rating scale of collaboration (Figure 1) the interviewer rated the collaboration for the 148 doctor–district nurse pairs and 161 doctor–health visitor pairs (Figure 2). Judged in this way there was a higher level of collaboration between district nurses and doctors than between health visitors and doctors. For both types of pairing, the most common level of collaboration was level 3 which describes regular communication between pairs with exchange of mutually meaningful information. There were more doctor–district nurse pairs rated at a higher level of collaboration than doctor–health visitor pairs.

Figure 3 lists features associated with higher levels of collaboration (chi-square test).

Discussion

To date studies of collaboration have focused on a few atypical primary health care organizations, the results of which have often been interpreted as indicating that interprofessional collaboration is widespread. However, some studies have led to more cautious conclusions.[6,7,10,11] Because of its sampling strategy, this study gives estimates of interprofessional collaboration which are representative of the variety of primary health care organizations throughout England. It has been shown that although collaboration *per se* does exist, it exists at a low level. It was found that 27% of doctor–district nurse pairs and 11% of doctor–health visitor pairs were rated by the interviewer as working in partial or full collaboration. The majority of pairs, 50% of doctor–district nurse pairs and 41% of doctor–health visitor pairs, were rated as working in 'communication'.

The promotion of teamwork has been undertaken on the assumption that high levels of joint working have a positive ef-

fect on patient care. This study has shown that a number of variables are associated with an independent rating of collaboration. Structural arrangements including the attachment of community nurses to general practice, the number of doctors that community nurses work with and working from the same building were found to be particularly important. If collaboration between primary health care professionals is to be encouraged then it is suggested that policy initiatives should continue to promote attachment of district nurses and health visitors to general practice, and the development of group practice based in health centres. For these initiatives to be implemented and accepted, commitment to joint working from those involved, including health authorities, family practitioner committees, community nurse managers, general practitioners and community nurses is needed.

The concept of neighbourhood nursing has been proposed as a method of improving the delivery of community nursing services.[4] If neighbourhood nursing is to be promoted then family practitioner committees should sub-divide their districts into areas which are coterminous with the neighbourhood nursing service. By encouraging general practitioners to arrange their practices in zones neighbourhood primary health care encompassing the community nursing services would provide the structural arrangements necessary for the development of increased interprofessional collaboration. If general practice does not respond to the idea of neighbourhood primary health care then an increase in the extent of interprofessional collaboration is unlikely. Increasing collaboration by making such structural changes is one way in which the effectiveness of primary health care could be improved.

Before any major structural changes in the delivery of primary health care are undertaken research which examines the effectiveness of interprofessional collaboration on patient care is necessary.

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The following structure has been suggested for annual reports:

1. History/development of the practice
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3. Personnel
4. Needs of the local community
5. Patients — including information on personal lists of partners if appropriate
6. Relationships with patients — including patient liaison groups
7. Practice activities:
   a) Operational — reporting the numbers and rates of surgery consultations and home visits for doctors; activity analysis for practice nurses, community nurses and health visitors; operational policies; medical records and referral rates
   b) Clinical activities — encompassing preventive medicine, child care surveillance, disease management and prescribing
   c) Educational — including matters relating to the doctors, nurses and health visitors
   d) Social
   e) Research
   f) Writing — publications by team members
8. Financial analyses — including the practice annual accounts
9. Planned targets for the next year
10. Index

Source: Gray DJP. Practice annual reports. In: Gray DJP, Gray JP (eds). *The medical annual 1985.* Bristol: Wright, 1985: 282-300.