CHAPTER TWO

Balancing demand and supply in out-of-hours care

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In order to plan an effective out-of-hours primary care service it is necessary to organise a level of supply of services which balances the demand for that service from patients. In fact, as we shall see later, supply and demand for healthcare are not independent, but are inextricably linked. The level of demand is strongly related to the level of supply. When they are in balance the service is likely to run smoothly. Many aspects of health services operate under a constant tension with demand always exceeding supply, as exemplified by the perennial problem of waiting lists for operations. Improvements in the provision of services lead to greater demand, as more people seek to benefit from care. This problem is particularly acute in the context of out-of-hours primary care. As we discussed in the previous chapter, there has been a growing mismatch between an increasing demand from patients for out-of-hours services and a decreasing willingness from GPs to work at unsocial hours. This has led to pressures for change in the system. This chapter provides a more detailed understanding of the changing level of demand and of the factors which have influenced doctors' willingness to supply services.

What is the demand for out-of-hours care?

Accurate information about the demand for care is an essential prerequisite for the planning of appropriate services. However, the necessary information is not readily available from any one source and the data that are available

have often been collected in small local areas and may be of limited applicability elsewhere. This chapter seeks to draw together the results from a number of different studies, to provide essential guidance for those discussing new developments in out-of-hours care. Information is needed about the following.

- Who calls? Which groups of patients are most likely to request out-of-hours care?
- Why do they call? What are the most common problems about which people consult? What are the background factors which lead to a call and what do we know about the types of help that people are seeking?
- When do people call? What is the pattern of consultations, what are the times of peak demand and how does demand vary by day of the week or month of the year?
- Which services do people call? General practitioners are one part of a network which includes ambulance services, A&E departments and community nurses. What proportion of out-of-hours care is provided by these different agencies?
- How many people call and how does this vary in different settings?

What do we mean by 'demand'?

The concept of 'demand' needs clarification. The plain English idea of demand suggests the notion of a request or a perceived need. In considering health services, demand for care has often been equated with the level of activity of a service. However, this assumes that a patient's perceived need always results in a contact with the health service. This ignores the possibility that people may wish to contact a doctor outside surgery hours, but are unable to do so because of a lack of knowledge about how to make contact, communication and language difficulties or the lack of availability of a telephone. These problems may be widespread, particularly in inner-city areas. Apparent increases in demand may simply reflect increased accessibility, for example as more people have telephones in their homes. The level of expressed demand from patients is also related to their expectations of the service. People may feel they need help but not bother to contact a service if they feel that help will not be available.

Although the above points should be remembered, the only readily available information about demand for out-of-hours care is based on the recorded levels of activity of primary care services. This information is difficult to interpret because different organisations have collected different types of data. The reliability of the data, the definitions used and the time periods studied have

all varied. It is also apparent that there is a striking variation in demand in different settings and in different parts of the country, making it difficult to generalise or predict the demand for out-of-hours primary care in a particular situation.

Who calls?

In planning out-of-hours service, it is important to note that certain patient groups generate a large proportion of the primary care workload in the out-of-hours period. In particular, calls from parents about children aged less than five years account for up to a quarter of all out-of-hours calls.[1] These calls about young children are most frequent in the evening. Overall call rates are lower for older children and teenagers and then steadily rise with increasing age (Figure 2.1). Areas which contain a large number of young children may therefore expect a higher number of out-of-hours calls, although this may be counterbalanced by the high proportion of young adults in such areas, who tend to call infrequently.

Women are much more likely to call outside normal surgery hours than men, although it appears that calls about infants more often concern boys than girls. The difference in call rates is greatest during the reproductive years. This pattern of consultation rates in different age-sex groups is similar to that seen in daytime general practice.

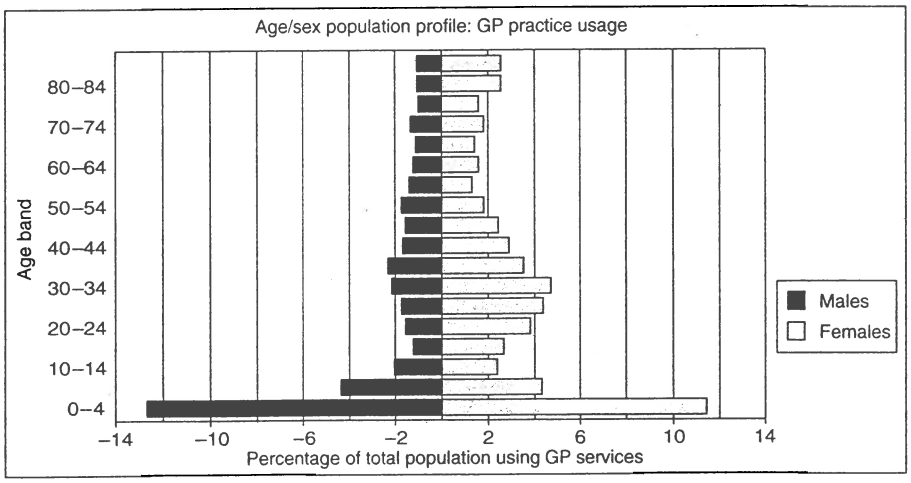

Figure 2.1: Contact rates by age and sex[2]

Why do people call?

A relatively small number of different problems account for a large proportion of the calls to out-of-hours services. In view of the frequency of calls about young children, the problems on this list are unsurprising. The most common problems presented to out-of-hours primary care services are:

- respiratory tract infections
- diarrhoea and vomiting
- children with earache
- children with a temperature
- minor injuries.

The question about why people call can, however, be addressed in a different way. There is a considerable body of literature about the factors which trigger a consultation with the doctor in the daytime. It is well recognised that one must consider the context to the problem and, in particular, the ideas and expectations of the patient with regard to their symptoms. Less attention has been given to these issues with regard to out-of-hours consultations.

Interviews with people after they have contacted a doctor in the evening suggest that their concern about the importance of particular symptoms (particularly the threat of meningitis), their previous experience of making out-of-hours calls and their need to gain a sense of control in a frightening situation are all important factors which lead to an out-of-hours call.[3,4] The severity, duration and acuteness of the complaint also help to determine whether a person seeks healthcare.[5] All these findings confirm that issues prompting patients' help-seeking behaviour outside normal surgery hours are similar to those that affect daytime consulting. The pursuit of a model of out-of-hours care based on medical necessity that neglects the psychosocial context of illness may not be appropriate.[4]

When do people call?

The peak levels of demand for out-of-hours care follow a fairly consistent pattern. Call rates are highest in the early evening and then tail off between 10.00 pm and 1.00 am. The number of calls between 1.00 am and 6.00 am is low, but rises between 6.00 am and 8.00 am (Figure 2.2). Call rates appear to be higher on weekend nights than on weekdays, although this finding is not consistently reported. For organisations such as co-operatives and deputising services, the time of peak demand is Sunday morning, with calls becoming less frequent in the afternoons. It is likely that more calls are made in the

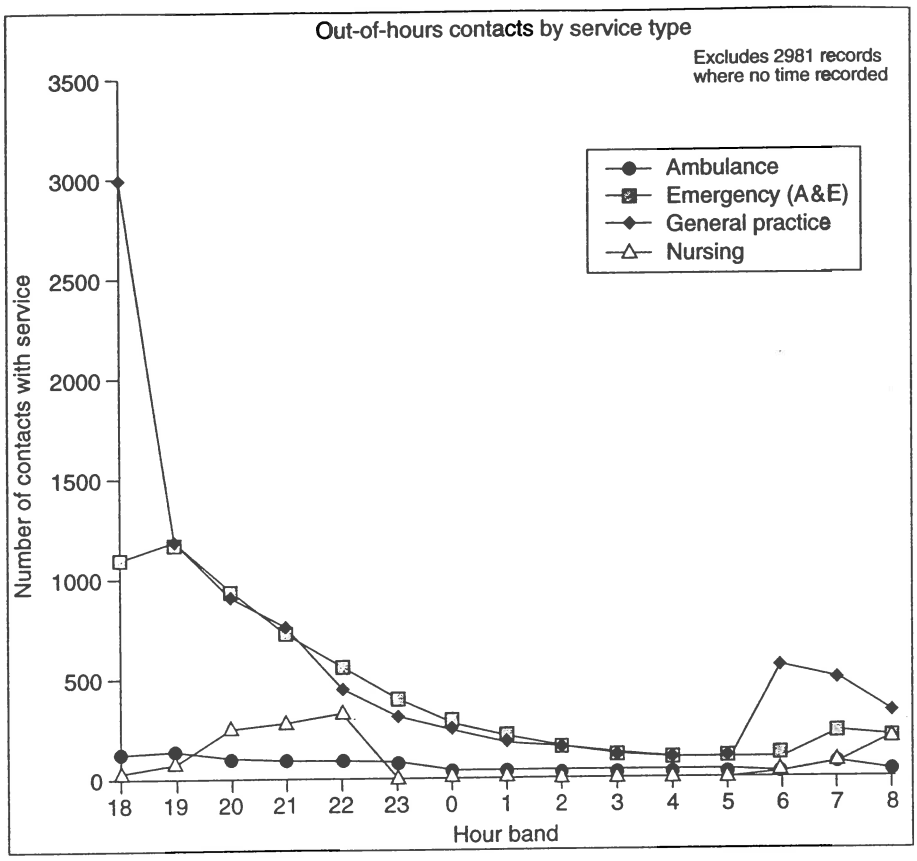

Figure 2.2: Times of calls to out-of-hours services in Buckinghamshire[2]

winter than in the summer, although reports on this issue are surprisingly contradictory and there is little robust evidence available.

Who do people call?

It is interesting to consider the proportion of care which is provided by general practice, in relation to the demands made on other services. One factor which will influence the rate of out-of-hours calls made to general practitioners is the range of alternative sources of help available to patients. Primary care is provided not only by GPs but also by A&E departments, ambulance services, pharmacists and community nurses. However, GPs appear to be the main providers of out-of-hours primary care, providing about half of all

contacts, with A&E departments providing a further third of contacts.[6,7] This balance is related both to the age of the patient needing attention and to the time of day or night. Calls about young children are more commonly made to GPs, but young adults are more likely to attend the local A&E department. In the early hours of the morning most calls are made to A&E, but during the day at weekends most callers contact their GPs.[8]

As with the overall level of demand, these findings may vary considerably in different settings. An important factor affecting where people attend for out-of-hours care may be the proximity and accessibility of A&E departments. There may also be differences between urban and rural areas. London in particular has a different tradition, with many people using A&E departments to meet their needs for primary care. General practitioners in London appear to carry out low numbers of out-of-hours calls. This is an important finding for the planning of health services, as it is in marked contrast to other metropolitan areas where call rates tend to be high.

How many people call? The variation in demand

An average GP co-operative might expect to receive between 140 and 240 out-of-hours calls (between 7.00 pm and 7.00 am or at weekends after mid-day on Saturday) per 1000 patients per annum. However, there is considerable variation in the numbers of out-of-hours calls reported from different parts of the country, between different local areas and even between different practices working from the same health centre.

What might be the reasons for this variation? In answering this question, we need to consider both characteristics of the patients and the local area ('demand factors') and issues related to the provision of services ('supply factors').

The balance of supply and demand

Demand factors

We have already seen that age and sex are related to rates of out-of-hours calls; therefore the demographic characteristics of local populations are likely to influence the demand on health services. We have also discussed the importance of understanding patients' health beliefs in determining whether an illness results in a call for professional help or whether it is managed at home. These beliefs are partly reflections of cultural values which may vary between and within different countries.

One approach to understanding the variation in demand is to relate out-of-hours attendance rates to characteristics of geographical areas. It has been found that out-of-hours call rates are strongly related to the levels of material deprivation of an area, indicated by areas with high levels of unemployment, overcrowded housing, low levels of car ownership and low rates of owner occupation.[7] Areas with high levels of illness, evidenced by high standardised mortality rates and high numbers of patients reporting chronic illness, not surprisingly generate high numbers of out-of-hours calls.[9]

Supply-related factors

Factors related to supply can be subdivided into those that relate to the national healthcare system (organisation and financing) and those related to the local situation (access, practice conditions and organisation of duty arrangements).

Features of the healthcare system can influence the use that is made of acute healthcare out of hours. An important aspect of the organisation of the healthcare system in this respect is 'gatekeeping' by general practitioners. The notion that effective primary care reduces patient usage of A&E departments is widely accepted. Gatekeeping by GPs is a central feature of healthcare in several countries in Europe, such as the United Kingdom and The Netherlands. The contractual obligation to provide 24-hour care to patients on a GP's list helps to reduce unnecessary use of A&E departments. In a study in France, the lack of a gatekeeping general practitioner was found to be a major risk factor for non-urgent visits to an A&E department.[10] It appears to be increasingly common, particularly in big cities, for patients to use A&E departments for non-urgent acute pathology that could have been dealt with by the general practitioner. Patients then reach a more specialised medical echelon which is less efficient, more expensive and damaging to the continuity of care.

The financing of healthcare is also relevant. It has frequently been suggested that if patients paid directly for out-of-hours care, this would reduce unnecessary calls. The contradictory argument is that charges would have the greatest deterrent effect on the poorest members of a community, who are likely to have the greatest needs for care.

There are two ways in which doctors can be paid: either by direct payment (by government, a sickness fund or insurer) or by the patient (who may be reimbursed for it). In the latter case, there are three possibilities:

- co-insurance: the patient has to pay a percentage of the costs of care
- co-payments: the patient pays a fixed amount of money per item of service
- deductible: the patient pays all the costs up to a ceiling.

The effects of co-payments have been studied in health maintainance organisations (HMOs) in the United States. In one study, the introduction of a small co-payment for the use of the emergency department was associated with a decline of about 15% in the use of that department, mostly among patients with conditions considered likely not to present an emergency.[11] In another study, based on data from the Rand Health Insurance Experiment, patients liable for co-payments were significantly less likely to visit the emergency department in the following three years.[12] The absolute size of the co-payment did not seem to be of influence and the effect of co-payments applied similarly to both urgent and less urgent diagnoses. For accidents or serious illness, the co-payments had no effect. Reductions in the appropriate use of services where even brief delays may be harmful and produce adverse effects on health were not demonstrated. It is important to note that the above studies were conducted in the United States; it cannot be assumed that the same findings would be made in countries with different traditions of healthcare.

The way in which physicians are paid is thought to affect physicians' behaviour and the outcome of this behaviour in turn affects healthcare utilisation and costs. This effect can be demonstrated by considering the payment systems in different European countries. The remuneration systems differ with respect to the relation between income, on the one hand, and time invested in providing care, on the other. In a fee-for-service system, a GP is rewarded for the investment of extra time, whereas the opposite occurs under a capitation payment system. Fee-for-service systems are well recognised to induce more activity. The impact of these differences is evident in the provision of out-of-hours primary care.[13]

In Denmark, for example, the fee-for-service system gave rise to ever-increasing costs for the night service. In 1990, out-of-hours services were reformed in Denmark. General practitioners continued to be paid on a fee-for-service basis, but different fees were set according to the type of care provided. Danish GPs receiving patients' out-of-hours telephone calls were given an incentive to complete calls by offering telephone advice alone, since the fee for this was higher than for offering patients a clinic consultation or home visit. Home visits were paid according to the time taken to complete a visit. Following the reforms, the proportion of calls handled on the telephone increased considerably.[14] In the UK, the effects of changes in the payment structure for night visits can also be seen. In 1990, the period during which general practitioners could claim night visit fees was extended by two hours and a differential payment was introduced with a higher rate for visits made by the GP personally and a lower rate for visits made by doctors from a deputising service. The number of night visits rose, which could not be completely attributed to the extended hours for which GPs could claim night visits, while the proportion of visits carried out by deputies fell by more than half.[1]

The organisation of general practice and of A&E departments at the local level varies in terms of accessibility, practice conditions and organisation of duty arrangements. Roberts and Mays[15] reviewed the literature on this subject and concluded that improved access to primary care where access was previously poor could reduce emergency department utilisation. Lack of access to a GP appears to be one of the major determinants of attending an A&E department[5] and the association between A&E attendance and distance has been shown in several studies, mostly set in rural areas.

An effective system of general practice requires an optimal level of accessibility and availability of services. These principles have consequences for the organisation of the practice. In fact, there are several barriers to seeking primary care, whether routinely or in a perceived emergency. These include difficulties in obtaining an appointment, problems in travelling and waiting times in the surgery.

There has been a suggestion that the use of deputising services increases the number of out-of-hours calls, but the evidence for this is doubtful.[9,16] Other features of practice organisation may be more important. In one study, there was a twofold difference in the number of night visits conducted by practices operating from the health centre and covering the same geographical area.[17] This finding, which is consistent with other research, suggests that factors within general practices lead to variation in out-of-hours call rates, which cannot fully be accounted for by differences in the characteristics of the population or the area. Although practice factors appear to be important, the exact nature of these factors is so far unexplained. There is no clear evidence that aspects of primary care organisation, such as appointment systems, deputising services, single-handed practitioners or primary care emergency centres, are related to the demand for out-of-hours care or the increasing demands on A&E departments.[15]

As well as variation within local areas, it is also likely that the number of calls varies around the country. General practices operate very differently in different areas and patients have differing characteristics and expectations. It would be surprising if the level of demand for out-of-hours care were the same in inner London and in rural Wales. At present, little is known about this issue, but one should beware of generalising from the experience in one area when planning services in another.

A sophisticated understanding of the factors which underlie the varying demand for out-of-hours primary care is necessary in order to increase the appropriate use of services. This is important to individuals as well as to those funding healthcare. For health services, the medicalisation of out-of-hours calls for non-urgent symptoms leads to an increase in the use of healthcare facilities and an unjustifiable increase in expenditure. For the patient, this is also undesirable since it generates unnecessary anxiety and dependency.

The increase in demand

A number of research studies have calculated rates of night visits and out-of-hours calls in different years, settings and areas. Although this evidence should be interpreted cautiously for the reasons discussed above, the overall results suggest that there has been a long-term increase in demand for care over several decades. This increase will have had a marked effect on the working life of a general practitioner within the length of his or her career. A specific fee for carrying out a night visit was introduced in 1967. A typical doctor entering general practice in that year might have expected to make a night visit about once every six weeks. By the time, they retired 30 years later, they could expect to make a visit during the night about once a week. This may cause significant disruption not only to their sleep pattern but also to their ability to work effectively in the daytime.

This trend of increasing demand over time is not unique to the United Kingdom. Many countries have faced problems in designing a system of out-of-hours care to cope with rising demand. An ideal system would be accessible, provide high-quality care for urgent problems, support rather than detract from daytime services, be affordable and be acceptable to both patients and doctors. Achieving these aims in the face of limited resources and increasing expectations is a challenge in the context of out-of-hours care as it is for many other aspects of health service planning.

In some ways, all countries face the same dilemmas, but in other ways each country is unique. The principles of understanding the balance between supply and demand in terms of characteristics of the local population and of the supply of services apply in all settings. However, the models which are proposed to solve the problems are clearly related to the rest of the health-care system. Although the attempts made elsewhere to resolve the problems are interesting, comparisons between the UK and other countries are of limited value because of the different traditions in daytime primary care. This is particularly true in terms of the provision of out-of-hours care. In most countries (with notable exceptions such as The Netherlands) there is less emphasis on continuity of care from one general practice, home visits in the daytime are rare and telephone advice is common. A major challenge in each country is to design a system which integrates with the daytime primary care service. The above differences highlight the fact that different solutions may be appropriate in the context of the overall healthcare system.

The changing expectations of patients and doctors

The level of demand on the health service is related to patients' expectations, as well as to their level of illness and to the socioeconomic factors listed previously. These expectations are largely conditioned by previous experiences, which are in turn related to the supply of services. Therefore, the level of health service activity cannot be considered a measure of the need for services, as activity is a function of this balance between supply and demand. There have been a number of important social and political trends affecting both patients' and doctors' expectations which may have influenced the demand on out-of-hours services.

Changing patient expectations

The 1990 GP Contract and the 1989 NHS White Paper reflected a philosophy of consumerism, which encouraged patients to have increasingly high expectations of the health service. This was in keeping with a much wider change in society from which the health service was not exempt. Many service industries had responded to consumer demand over the previous decade by increasing opening hours and accessibility. Convenience stores opened from early morning to late at night, shops opened on Sundays and 24-hour telephone banking and all-hours petrol stations became commonplace. It would be surprising if this had no effect on the demand for primary healthcare.

Over the period between 1966 and 1990, many aspects of general practice organisation developed and it is possible that some of these changes could have had an impact on patients' demands for out-of-hours care. The increasing use of appointment systems may have led to reduced availability of GPs in the daytime and this may have precipitated an increasing number of calls after doctors' surgeries were closed. It has also been suggested that the use of deputising services led to an increase in out-of-hours calls, as patients learnt that they could expect a home visit virtually on request. Conversely, if patients prefer to contact a doctor they know, the use of an unknown deputy could have prevented some calls if patients decided to wait until their surgery reopened. As previously described, the evidence for an inflationary effect from the use of deputising services is inconsistent.

Change in the attitudes of doctors and in the medical workforce

The increasing demand from patients was met by an increasing reluctance from general practitioners to work at night, leading to serious dissatisfaction within the medical profession and demands for change. The most important stimulus to change in the attitudes and expectations of doctors was probably the 1990 GP Contract, which not only had a direct effect on night visiting but also had an impact on many other aspects of primary care, the role of GPs and, more subtly, on their attitude to their work. The financial disincentives against using deputising services created by this new Contract provoked an angry response from doctors, particularly in deprived areas, who had come to rely on those services. This led doctors to question whether it was really necessary or advantageous for patients to be visited at night by a doctor who knew them. Heath[18] suggested that the philosophy of the market engendered by the Contract led GPs to consider the financial value attributed to various aspects of their work and this resulted in an 'attrition of vocation'.

> *'As patients became consumers, doctors became purveyors of a commodity rather than members of a vocational profession providing a public service. They then begin to look at precisely what they are paid for offering a 24 hour service 365 days of the year and they find that it is very little for the discomfort of having to get out of a warm bed after a long day's work and with the prospect of another one only a few hours away.'*

The extent to which GPs resented out-of-hours work became clear when the GMSC undertook a major national survey of all GPs in the UK in 1992.[19] Almost 25 000 doctors replied, a response rate of 70%. More than half the respondents disagreed that 24-hour responsibility should remain an integral feature of general practice. 82% thought it should be possible to opt out and 73% of doctors personally wished to opt out. The opposition to the 24-hour commitment was most marked amongst younger GPs.

The strength of feeling which was apparent from this survey gave support to those who argued for a political campaign to change GPs' terms of service, a campaign which led to threats of mass resignation and eventually to some contractual changes. Why had GPs become so unwilling to continue their 24-hour responsibility for patient care?

First, there had been a long-term trend for GPs to decrease their personal commitment to out-of-hours work in terms of the number of hours spent on call.[20] The demand from doctors for shorter working hours and greater leisure time reflects the same trend in other areas of society.

Second, doctors who qualified before the mid-1980s had been trained into a profession which accepted long hours on call as the norm, having worked every other night or every third night as a hospital doctor. During the 1980s, the issue of junior hospital doctors' working hours became highly politicised. Doctors who entered general practice regarded frequent on-call duties as exploitative, rather than an essential feature of medicine, and were unwilling to accept partnerships in practices which involved onerous rota commitments. Amid growing recruitment difficulties, out-of-hours work was perceived to be one of the most important negative aspects deterring doctors from entering general practice.[21]

Third, there were important changes in the medical workforce. Between 1983 and 1995 the proportion of women doctors increased from 17% to 30% and 31% of these principals were part time.[22] Many of these doctors had domestic commitments and were seeking to work more defined hours.

Fourth, women doctors particularly, but also their male colleagues, increasingly expressed concern about the rise of aggression and actual violence when working at night. A survey in 1991 found that most general practitioners had experienced abuse or violence in the previous 12 months. There had been 90 incidents of assault and 37 physical injuries, of which 22 (66%) occurred during night calls.[23] One response to the fear of violence was to increase the use of deputising services.

The changes in the medical workforce, in the nature of general practice and in the 1990 GP Contract may have led to subtle changes in how GPs viewed their professional responsibilities. It is clear from articles written in the 1970s and 1980s that the delivery of out-of-hours care within a small practice rota was assumed to represent good practice, as it embodied the concept of personal and continuing care which was central to the professional values of general practice. The use of deputising services was at best a necessary evil. In many regions of the country, practices which used deputising services were not considered suitable to undertake vocational training of GPs. However, by the 1990s, general practitioners were redefining the nature of professional responsibility and suggesting that personal 24-hour care was unnecessary, inefficient and possibly harmful. Iliffe and Haug[24] argued that the demand for 24-hour care was unrealistic and fuelled ideas of omnipotence in doctors. They asserted that it was impossible to justify disturbing the sleep of GPs, thus making them tired the next day and effectively wasting a precious and expensive resource, for the sake of one or two calls.[24]

The attempts by GPs to change their contractual arrangements and devise new models of out-of-hours care can be seen as a creative response to the challenges of meeting the demands of patients. A negative manifestation of their unwillingness or inability to meet these demands was the evidence of poor morale in general practice and difficulties in recruiting young doctors. The reluctance of general practitioners to offer out-of-hours care may have

been partly due to their general demoralisation after the imposition of the 1990 Contract. The 24-hour commitment was only one further stress for doctors who were facing many new demands, for example in health promotion and in purchasing secondary care.

Increasing concern about out-of-hours care led to the threat of industrial action by GPs. Negotiations eventually resulted in several changes, including a restructuring of the payment system for night visits. This removed the differential fees which penalised doctors who delegated visits to deputising services or co-operatives. Other changes included a patient education campaign to encourage appropriate use of the out-of-hours service, an agreement to identify a national price for the out-of-hours component of GP workload and a new right for GPs to transfer their out-of-hours responsibilities to another GP principal. The government also instituted a £45 million development fund to support new initiatives such as primary care centres.

The incentives created by these changes seemed likely to lead to a growth in centralised out-of-hours care provided by co-operatives and deputising services, with fewer GPs making visits personally. Earlier changes to the GP's terms of service had made the doctor responsible for deciding whether and where a consultation should take place, which was likely to lead to more telephone advice and primary care centre consultations and fewer home visits. By 1995, therefore, the combination of financial support and more flexible regulations had created the conditions necessary for a period of innovation in developing new ways of delivering 24-hour primary care. These innovations came about in response to pressure from doctors for change in the system because of a perception of increasing demand, the changing expectations of both patients and doctors and changes in the medical workforce.

References

1 Salisbury C (1993) Visiting through the night. *BMJ.* **306**: 762–4.

2 Brogan C, Eveling D, Fairman S, Gray A, Pickard D (1996) *Evaluation of Out of Hours Services.* Buckinghamshire Health Board, Aylesbury.

3 Kai J (1996) What worries parents when their preschool children are acutely ill, and why: a qualitative study. *BMJ.* **313**: 983–6.

4 Hopton J, Hogg R, McKee I (1996) Patients' accounts of calling the doctor out of hours: qualitative study in one general practice. *BMJ.* **313**: 991–4.

5 Singh S (1988) Self-referral to accident and emergency department: patients' perceptions. *BMJ.* **297**: 1179–80.

6 Brogan C, Pickard D, Gray A, Fairman S, Hill A (1998) The use of out of hours services: a cross sectional survey. *BMJ.* **316**: 524–7.

7 Carlisle R, Groom LM, Avery AJ, Boot D, Earwicker S (1998) Relation of out of hours activity by general practice and accident and emergency services with deprivation in Nottingham: longitudinal survey. *BMJ.* **316**: 520–3.

8 Shipman C, Longhurst S, Hollenbach F, Dale J (1997) Using out-of-hours services: general practice or A&E? *Family Pract.* **14**: 503–9.

9 Majeed FA, Cook DG, Hilton S, Poloniecki J, Hagen A (1995) Annual night visiting rates in 129 general practices in one family health services authority: association with patient and general practice characteristics. *Br J Gen Pract.* **45**: 531–5.

10 Lang T, Davido A, Diakité B *et al.* (1996) Non-urgent care in the hospital medical emergency department in France: how much and which health needs does it reflect? *J Epidemiol Commun Health.* **50**: 456–62.

11 Selby JV, Fireman BH, Swain BE (1996) Effect of a co-payment on use of the emergency department in a health maintenance organisation. *NEJM.* **334**: 635–41.

12 O'Grady KF, Manning WG, Newhouse JP, Brook RH (1985) The impact of cost sharing on emergency department use. *NEJM.* **313**: 484–90.

13 Boerma WGW, Fleming DM (1998) *The Role of General Practice in Systems of Health Care.* WHO/Stationery Office, London.

14 Olesen F, Jolleys JV (1994) Out of hours service: the Danish solution examined. *BMJ.* **309**: 1624–6.

15 Roberts E, Mays N (1997) *Accident and Emergency Care at the Primary–Secondary Care Interface: a systematic review of the evidence on substitution.* King's Fund, London.

16 Whynes D, Baines D (1996) Explaining variations in the frequency of night visits in general practice. *Family Pract.* **13**: 174–8.

17 Usherwood TP, Kapasi MA, Barber JH (1985) Wide variations in the night visiting rate. *J R Coll Gen Pract.* **35**: 395.

18 Heath I (1995) *The Mystery of General Practice.* Nuffield Provincial Hospitals Trust, London.

19 Electoral Reform Ballot Services (1992) *Your Choices for the Future: a survey of GP opinion, UK report.* ERBS. London.

20 Hallam, L. (1994) Primary medical care outside normal working hours: review of published work. *BMJ.* **308**: 249–53.

21 Rowsell R, Morgan M, Sarangi J (1995) General practitioner registrars' views about a career in general practice. *Br J Gen Pract.* **45**: 601–4.

22 Anonymous (1995) *General Medical Services Statistics for England and Wales.* HMSO, London.

23 Hobbs FD (1991) Violence in general practice: a survey of general practitioners' views. *BMJ.* **302**: 329–32.

24 Iliffe S, Haug U (1991) Out of hours work in general practice. *BMJ.* **302**: 1584–6.

24-Hour Primary Care

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