OUT-OF-HOURS CARE IN WEST KENT

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1. Background

The changing face of out of hours provision

The provision of medical services outside of normal surgery hours was once considered a key feature of the general practitioner's duties. In recent years, however, there has been a fundamental shift in the organisation of 'out of hours' care. Research has shown a long-term trend towards increased patient demand, but a decline in GPs' willingness to provide that service personally. Many in the profession have questioned whether the increased volume of out of hours work reflects a growth in genuine health need, or, in unreasonable demand from patients.

Over the last 25 years the number of GPs providing a 24-hour service to their patients has decreased, leading to greater proliferation of rotas, commercial deputising services, and more recently, GP co-operatives. In 1964 39% of GPs were on call five or more nights a week, but by 1991 less than 4% were on call 16 or more nights per month.[1] Commercial deputising services began to grow from the late 1960s. In 1965 only 9% of GPs were 'sometimes' using these services,[2] whereas later studies report a gradual increase,[1,3,4,5,6] and by 1989 deputies carried out 46% of night visits.[7]

More recently, there has been a rapid expansion in the number of GP co-operatives, following policy changes introduced in 1995. Co-operatives were defined as 'non-profit making organisations entirely owned and staffed by the general practitioner principals of the area in which they operate.'[8] The reforms included reimbursement for night visits uniformly whenever they occurred, and permission for transfer of responsibility to another GP principal. The number of out of hours co-operatives registered with the National Association of General Practice Co-operatives rose from six in 1990 to 124 in October 1996. There have been some concerns expressed about the rapid growth of GP co-operatives. Unlike commercial deputising services, [7,9,10], co-operatives do not have to face external controls and vary widely in composition and service delivery.[16]

A survey of all co-operatives registered with the national association[11] found that they all offered home visits, 98% provided telephone advice, and 97% also offered consultations at a base site. However, 89% of those surveyed estimated that under half of calls received resulted in a home visit. This may reflect a growing shift away from home visiting towards increased telephone advice and base consultations. Data from 1994-5 showed that less than 1% of callers to four commercial deputising services, and 20% of callers to GP rotas were dealt with by telephone advice,[14] whereas data for 1996 showed rates of 19% for commercial deputising services and 58% for a GP co-operative.[15] The move towards telephone advice has recently become national policy with the establishment of the 'NHS Direct' advice line, although the service is not yet linked to the provision of home visits. The establishment of walk-in centres, (often located in stations and supermarkets) may also enable patients to obtain care when their surgery is closed.

1.2. Patient Expectations

It has often been suggested that expectations of primary care have increased because of a new emphasis on consumer rights, for example, in the 'Patient's Charter'. However, the growing reluctance of GPs to provide a personal out of hours service to their patients appears to lack public support. Studies have shown that patients prefer to see their own GP or a doctor from the same practice,[12,13] as they believe that this service may be better [14] than that from an agency which provides an on call service.[15,16] Research has also shown that patients often express a desire to be consulted about the planning and delivery of services [17,18] and there is evidence that practices find it worthwhile to consult patients,[18,19] yet radical changes in out of hours provision have taken place without a great deal of patient consultation.

McKinley and colleagues [20] developed a tool to measure patient satisfaction with out of hours care and found far greater dissatisfaction than had been reported in earlier studies. Speed of response is often cited as a key issue in patient satisfaction with out of hours care[21,22] and this remains the main source of dissatisfaction.

Access to services is also a problem, particularly for patients with special needs.[23] Difficulties encountered included language and cultural barriers, limited knowledge about what services were available out of hours, not being registered with a GP, and problems of accessing services during normal opening hours because of employment patterns. These problems tend to be particularly prevalent in deprived inner city areas. Evidence regarding the desirability of telephone advice is mixed. Many patients expressed a need for readily available telephone advice to help them determine the severity of symptoms. And the ambulance service has reported that the public often use the 999 emergency service to get advice when a non-emergency help-line would be more appropriate.[23] However, a different study[12] found lower satisfaction with out of hours services from patients who received telephone advice, especially among those who originally wanted a home visit.

1.3. GPs attitudes and 'inappropriate' use of services

The debate about factors influencing demand for out of hours care has been accompanied by concern from GPs that many patients use the service inappropriately. A growing body of published research suggests a significant difference between public and professional beliefs about what constitutes legitimate grounds for an out of hours visit.[24] Attempts have been made to address this 'inappropriate' or unnecessary demand by developing patient education programmes. However, there are differing views regarding the size of the problem. One research review found that 41-60% of contacts were considered unnecessary, although less than 8% of night calls were felt to be inappropriate.[26] Also, in a study of out of hours contacts in Buckinghamshire, GPs found 5% of calls to be urgent, 55% necessary, 26% to be able to wait until the next morning, and 14% unnecessary.[25] The definition of an inappropriate visit appears to be highly subjective. Another study asked GPs to rate

factors which would lead them to make a decision to visit. Important factors included considering the patient's definition of urgency, demand for a visit or patient problems in travelling to the surgery. 'Inappropriate' calls included requests concerning minor ailments, repeat prescriptions and chronic complaints that GPs felt could have waited until the following day. [26]

1.4. Characteristics of out of hours users

Although, there has been an overall increase in the demand for out of hours care, there are wide variations in demand between regions, and even between practices. Various studies have attempted to explain these differences. Social deprivation, high expectations in more affluent areas and high proportions of young children have all been shown to increase the number of out of hours calls. [27, 28,29,30,31, 32,33] One study found that areas with overcrowding, unemployment, more non-owner occupation, low car ownership and a high proportion of people from minority ethnic groups all had higher levels of use of out of hours services – both GP and accident and emergency. Areas with higher numbers of single parents were also associated with more use of out of hours services, but this was more for GP services than Accident and Emergency.[34] Other studies have focussed on the relationship between supply and demand, suggesting that organisational factors in the practice such as list size, number of partners, doctor-patient relationships, and GP attitudes might also influence variations. [35,36, 37,38]

Patients' accounts of calling doctors out of hours [39] show that although particular symptoms are often given as the main reason for calling the out of hours service, there are other factors which also influence the decision to call. These include concerns about the nature of the illness, previous attempts to manage the problem themselves, and past experience with health services (for example a negative consultation with a health professional may lead to a lack of confidence in the diagnosis given and anxiety about self management leading to further consultations). Other studies have shown that decisions to seek medical advice are also based on ideas about 'normal' and 'abnormal' illness,[40] and that there is often a great deal of self-management of the illness before any decision is made to get professional help. [41,42] This suggests that initiatives that aim to develop more appropriate and efficient out of hours care should consider the complicated psycho-social factors that influence the decision to request an emergency home visit, rather than simply focussing on patient education about symptoms and treatment. [39]

Conclusion

The way in which out of hours care is provided has radically changed, most notably with the growth of co-operatives. There is also evidence that this transition has been marked by a reduction in the proportion of out of hours home visits, with one estimate suggesting that home visits by GP co-operatives have fallen from 32% to 23%, and that there has been an increase in primary care centre consultations. [43]
Commentators have raised doubts about this move away from home visits, [44] particularly where transport is difficult, and in poorer areas where there is less car

ownership, and there is a pressing need to demonstrate that telephone advice, and base consultations are effective alternatives to home visits.[23,44,45] Where a telephone consultation can be substituted for a home visit, it is important to ensure that GPs are properly trained, as a recent study has found low levels of confidence amongst GPs conducting telephone consultations.[46]

The West Kent study aimed to examine the demographic characteristics of patients who made frequent use of out-of-hours services and to ascertain whether their beliefs about what constituted reasonable grounds for an out-of-hours home visit differed from those of the rest of the population. Time permitting, the study also aimed to compare patients' perceptions with those of a small number of local GPs working within the co-operatives. However, as the following section reports, fundamental ethical, methodological and organisational difficulties arose, compromising the study's original aims and objectives.

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2. Methodology

Only a modest budget was available, and it was considered important that the study should yield quantitative data. For these reasons it was decided that the main method of data collection should be a postal survey. More specifically the research design was to comprise the following elements:

- A brief literature search and review.
- A postal survey of the adult population of West Kent, using a random sample (n=4500) drawn from the age-sex register held by Kent Health Authorities Support Agency.
- A postal survey of heavy users of the out of hours service, (i.e. patients who had used the service twice or more in the previous six months), identified from digitised records held by the seven co-operatives in West Kent.
- A small survey of GPs working in the seven co-operatives.
- Analysis of complaints received about the out of hours service.

The success of the study depended very much on the full participation and support of the seven co-operatives. In a more lengthy study, time would have been spent visiting the co-operatives and building up a trusting and collaborative relationship with the key stakeholders. However, the budget only allowed for 16 days of research consultancy, in which to obtain the sampling frames, extract the samples, design and revise the questionnaire, conduct the survey, analyse the data and write the report. This meant that time was not available for protracted consultation with the co-operatives, and in any case it was assumed that as the impetus for the study had come from the Doctor Patient Partnership and addressed a key concern of local GPs, the support of the co-operatives could be taken for granted. The appropriate managers at the seven co-operatives were all sent a letter (appendix 1) explaining the background to the study and requesting their participation. All seven co-operatives refused to participate, despite the best efforts of West Kent Health Authority staff to persuade them of the value of the study.

These difficulties were compounded by the necessity of obtaining approval for the study from the four Research Ethics Committees in West Kent. After considerable deliberation and negotiation the Maidstone and Tunbridge Wells committees gave permission to proceed, Medway gave approval on the condition that the co-operatives agreed to participate, and Dartford & Gravesham refused permission.

The above difficulties had significant methodological consequences. The non-participation of the co-operatives meant that three elements of the research design could not be implemented: the postal survey of heavy users of the out of hours service, (to be identified from digitised records held by the seven co-operatives); the survey of GPs working in the seven co-operatives; and the analysis of complaints. All that remained of the original proposal was the literature review and a postal survey of the adult population, (limited to Maidstone and Tunbridge Wells, where ethical approval had been forthcoming). This meant that the original aims and objectives were unlikely to be met. However, given that a substantial proportion of the budget had already been committed, (in salary), it was felt that the study should continue as it would at least provide base-line data and a piloted questionnaire that might be used in future studies.

The survey was conducted between August and October 1999. Members of the sample were sent a questionnaire (appendix 2) with a covering letter and a reply paid envelope. Two weeks later, those who had not responded were sent a duplicate questionnaire and reply paid envelope. The deadline for returns was 14th October, at which time the data were entered into the Statistical Package for Social Sciences.

2.1. Sampling & Response Rate

A sample of the adult populations of Maidstone and Tunbridge Wells was obtained from the Kent Health Authorities Support Agency's age-sex register. Table 1 indicates the sample size and response details.

	Maidstone	Tunbridge Wells	All
Sample	1084	1144	2228
Completed questionnaires received	627	677	1304
Refused to participate	38	38	76
Others (deceased, under-age, not at address, incapacitated)	32	40	72
Not returned	387	389	776
Sample minus others	1052	1104	2156
Response rate	59.6%	61.3%	60.5%

Table 1. Sample and response details.

Although typical for postal surveys of this kind, the response rate was sufficiently low for concerns about response bias to be raised. This was particularly pertinent because demographic characteristics such as age and social deprivation may influence use of out of hours services. For this reason, the demographic characteristics of the respondents were compared with those of the two populations, to assess representativeness. Some variation may be due to changes over time and slight differences in the way the variables are calculated, however, the comparison is broadly indicative.

Indicator	Maidstone		Tunbridge Wells	
	Population (%)	Respondents (%)	Population (%)	Respondents (%)
Male	48	45.5	47	44
Female	52	54.5	53	56
18-24 years	13	8	13	5
25-44 years	39	35	37	33
45-64 years	29	36	29	38
65+ years	19	21	22	24
Ethnic minority	1.5	2	1.1	1.8
Owner occupancy	74	83	71	80

Sources: OPCS 1991 Census, ONS Local Health Area Profile

Table 2. Comparison of demographic characteristics between population and respondent groups.

As table 2 illustrates, women and people in the older age groups were more likely to complete the questionnaire than were men or younger people. Similarly, the higher rate of owner occupancy among the respondent groups suggests that the socially deprived may be under-represented. This is consistent with other surveys of this kind, however, it does suggest that valid aggregated data, for instance, on total usage of the out-of hours service, cannot easily be compiled, although rates within the above groups should be valid. Respondents from black and minority ethnic groups do not appear to be under-represented, although their numbers are very small.

In conclusion, analysis of the response rate and the demographic profile of respondents suggests that the findings of the survey should be treated with some caution, although reliable and valid generalisations can be made about specific demographic groups. Future studies should aim to increase the response rate particularly amongst the young, the socially deprived and men. This might be achieved by shortening the questionnaire, increasing the number of reminders, offering an incentive to responders, or adopting an alternative sampling strategy.

3. Results

3.1 Use of General Practice Services

Respondents were asked how many times during the previous three months they had visited their doctor's surgery to see the GP or practice nurse. The range was from 0 to 18 visits, although over 90% had visited 3 times or less. Table 3 illustrates the percentage of respondents who had attended at least once, broken down by gender, social class and age band.

	Attended surgery once or more during previous 3 months (%)
All respondents	59
Men	49
Women	66
Social classes 1+2: professional, managerial & technical	58
Social classes 5+6: partly skilled and unskilled	62
18-23 years of age	58
24-34 years of age	66
35-44 years of age	51
45-54 years of age	56
55-64 years of age	60
65+ years of age	63

Table 3. Variations in attendance at GP surgery.

A majority (59%) of respondents had visited their GP's surgery during the previous 3 months, however this masked significant gender differences, with two-thirds of women having attended, compared to slightly less than half of the men. In order to increase the numbers in each cell, social classes 1 and 2 (professional, managerial and technical workers) were combined, as were classes 5 & 6 (partly skilled and unskilled,). This revealed a slightly higher attendance rate among the less affluent classes, although the difference was not great. Similarly, although the two older age-bands had higher rates of attendance than younger respondents the differences were not as great as one might have expected, nor was there a consistent increase in attendance across the age bands. Differences between the two localities were not great, (Maidstone 60%, Tunbridge Wells 57%).

3.2 Home Visits

The questionnaire also asked how many times a home visit had been requested during the previous three months. As table 4 indicates, 97% of respondents had not requested a home visit during that period, and the number requesting a home visit on more than one occasion was negligible. This pattern varied little by gender, social class, or, locality. However, it is worth noting that of the 42 home visits, 30 were to people aged 65 or older, and that this difference is unlikely to be attributable to chance, (Pearson's chi-square 60.298, df 1, asymp. Sig. (2-sided) 0.000).

	Number of times that a home visit had been requested during previous 3 months							
	0		1		2		3	
	n	(%)	n	(%)	n	(%)	n	(%)
All	1238	(97)	35	(3)	5	(<1)	2	(<1)
Men	558	(97)	16	(3)	1	(<1)	0	
Women	680	(97)	19	(3)	4	(<1)	2	(<1)
Social classes 1 & 2	530	(97)	11	(2)	3	(<1)	0	
Social classes 5 & 6	137	(96)	5	(4)	0		0	
18-23 years	68	(99)	1	(1)	0		0	
24-34 years	200	(98)	4	(2)	0		0	
35-44 years	243	(98)	4	(2)	0		0	
45-54 years	260	(99)	2	(<1)	1	(<1)	0	
55-64 years	211	(100)	0		0		0	
65+	256	(90)	24	(9)	4	(1)	2	(<1)
Maidstone	599	(97)	14	(2)	2	(<1)	2	(<1)
Tunbridge Wells	638	(97)	21	(3)	3	(<1)	0	

Table 4. Home visits requested during previous 3 months.

The data in table 4 suggest either that very few people in Tunbridge Wells and Maidstone had requested home visits from their doctor, or, that members of the sample who had requested home visits were less likely to return their questionnaires. The problem is compounded when we look at patients who had requested a visit from their doctor outside of normal surgery hours. Of the 42 respondents who had requested a home visit only 14 (1.1% of respondents) had asked their doctor to visit when the surgery was closed. If we applied this proportion to the population as a whole, then a GP with a list size of 1900 (approximately the average) would expect to have about 5 home visits per week, one or two of which would be out-of-hours, (depending on the age and gender mix of the list and seasonal variations – the study was conducted in the summer when demand is relatively low). If a significant section of the populations of Maidstone and Tunbridge Wells made frequent use of out-of-hours services, this study failed to identify them.

If comparable data are available, it would be interesting to compare the above data with those collected by the co-operatives in Maidstone and Tunbridge Wells. In the absence of such data, there is some value in comparing our findings with those of a national survey conducted in 1998, (Airey C & Erens B, October 1999, National surveys of NHS patients: General Practice 1998, NHS-E). The national survey found that 14% of people had called the out-of-hours service in the previous 12 months, of whom 45% had received a home visit. Interestingly, 16% of people who had called the out of hours service had called three or more times in the twelve month period. Data from the national survey were disaggregated by Health Authority district, although the numbers are very small, (n = 650 for West Kent). There are no statistically significant variations between the West Kent and national data for the above variables.

Irrespective of whether or not the rates of home visiting reported in this study accurately reflect actual rates, the small numbers severely limit the type of analysis that can legitimately be conducted on the data. We had hoped it would be possible to identify frequent users of out of hours services, describe their socio-demographic characteristics, and see if they were more likely than other respondents to say that they would request a home visit under a series of hypothetical illness scenarios. If as initially planned, the questionnaire had been sent to a list of known frequent users of the out of hours service, or if the survey of the general population had picked up a greater number of frequent users, then such an analysis would have been viable, but given the low numbers identified this will not now be possible.

A series of questions were addressed directly to those who had requested an out of hours or other home visit. Again the numbers are generally too small to warrant detailed analysis. However, it is worth noting that 40 of the 42 requests for a home visit had been met. Similarly, in anticipation of the introduction of NHS Direct, those who had requested a home visit during the previous three months were asked if they would be willing to use a 24 hour medical advice line staffed by nurses. Eighty-three percent said that they would be willing to use the service, but just under half (49%) felt that it would make them less likely to request a home visit.

3.3. Variations in potential demand

A key aspect of the out-of-hours debate is the extent to which requests for home visits are appropriate. Many doctors can provide anecdotal evidence of grossly inappropriate requests, while non-clinicians might reply that 'peace of mind' justifies an emergency consultation, even if the diagnosis is minor. We wanted to explore variations in beliefs about what constitutes legitimate grounds for requesting a home visit out-of-hours. How serious do symptoms have to be before an out-of-hours visit is requested? Does this threshold vary between different sub-groups of the population? Initially, we had also intended to compare public perceptions with those of local doctors involved in the provision of out-of-hours services, but the co-operatives unwillingness to participate in the study meant that this was not possible.

Attitudes were explored by presenting a series of hypothetical ill health scenarios, or, vignettes, for example, *If in the evening after your doctor's surgery had closed you had a fall and hurt your leg, and had difficulty walking, would you...* Eight alternative courses of action were then listed, and respondents were asked to state which they would take in response to the health problem outlined in the vignette. The options were:

- Wait until the surgery opens and telephone for advice.
- Wait until the surgery opens and request a home visit.
- Telephone to request an immediate home visit by a doctor.
- Telephone the surgery emergency number for advice.
- Go straight to casualty/accident and emergency.
- Visit the chemist/pharmacist for advice.
- Not seek professional advice
- Other.

The list could have been extended to include other courses of action, but it was considered important to limit the number of options to avoid confusion.

Table 5 lists the vignettes with the percentage of respondents who chose each of the options. Two columns concern use of the out-of-hours service; *"Telephone to request an immediate home visit by a doctor"* and *"Telephone the surgery emergency number for advice."* The claim that large numbers of people are prepared to insist upon an out-of-hours visit for relatively minor conditions is not supported by this study. Just 1% or less of respondents claimed that they would request a home visit for conditions such as earache, sleeplessness, or headache, and 3% said that they would request a visit if they were suffering from sickness & diarrhoea. Even for more severe problems, those who would request an out-of-hours visit were in the minority; 2% of those experiencing a fall that hurt their leg and gave them difficulty walking would request a visit; and 16% of those experiencing chest pains and breathlessness would request a visit.

Telephoning the emergency number for advice was a more common response even for some relatively minor complaints, such as, earache (22%), and sickness & diarrhoea (26%), although this was less so for other minor complaints, such as, headache (6%) and sleeplessness (1%). Of the more serious symptoms, 44% indicated that they would call the emergency number if they had chest pains and breathlessness, although just 11% would call if they had a fall resulting in a leg injury.

What course of action would be taken by those who would not contact the out-of-hours service either to request a visit or for advice? Of those suffering sleeplessness 75% would not seek professional advice at all, and 9% would wait for the surgery to open and then telephone for advice. Similarly, with headache, a majority (53%) would not seek professional advice and 24% would call the surgery when it opened. Waiting until morning before telephoning the practice was also a common response to earache (38%), and diarrhoea (25%). There were only two conditions for which significant numbers would go directly to an accident and emergency dept., chest pains (28%) and following a fall which resulted in a leg injury (49%).

Rather than simply demanding an out of hours home visit for any ailment, the respondents appear to have a relatively complex way of assessing the severity of their condition and selecting an appropriate course of action. For minor complaints many respondents would either not seek professional advice, or wait until morning before consulting their doctor or pharmacist. Conversely, at the other end of the spectrum, following a severe injury resulting from a fall, many respondents indicated that they would go directly to A&E. Recourse to the out-of-hours service appears to be more common under conditions of uncertainty about the severity of a condition, for instance, sickness & diarrhoea could indicate a minor problem treatable at home without professional intervention, or, it could be indicative of a much more serious illness that requires immediate clinical intervention. Similarly, chest pains and breathlessness can be symptoms of indigestion, or, of heart attack. It may be the indeterminacy of such symptoms that leads many people to seek advice, (if not an actual emergency home visit), from the out-of hours service.

We were interested in exploring the socio-demographic factors that influence the decision to use the out of hours service, rather than waiting till the following morning, or, not seeking professional advice at all, i.e. do some people tend to seek a greater degree of clinical intervention than others, across a range of scenarios? In order to do this we needed to combine the responses to the different scenarios into a single variable, that would capture variations in the potential demand for intervention. We did this by weighting the different courses of action according to the degree of demand for intervention that they implied. The weightings are listed below:

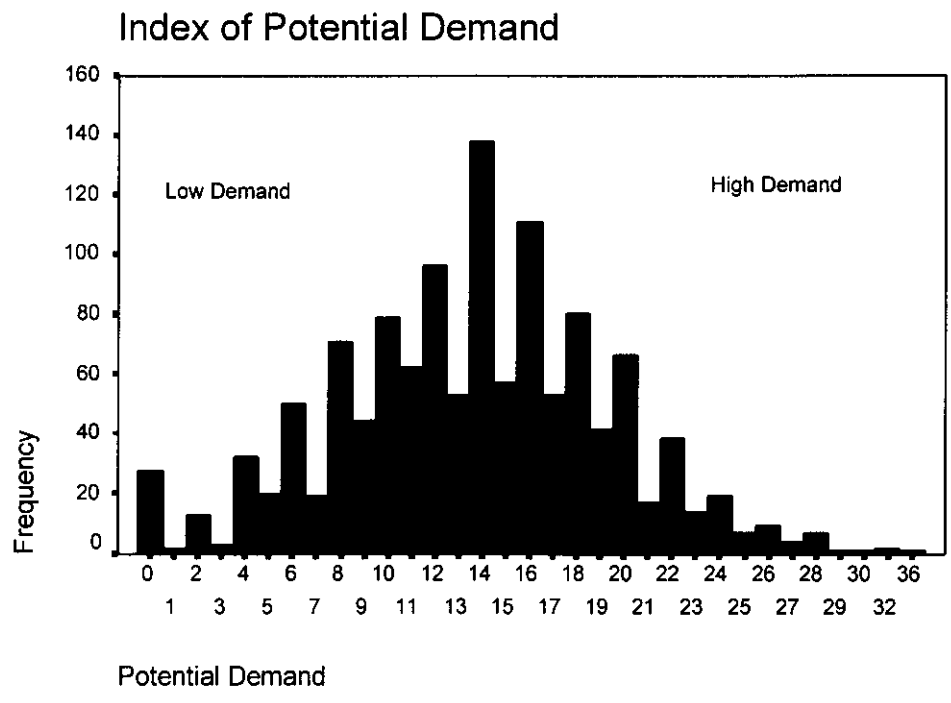
	Wait until the surgery opens and telephone for advice. n (%)	Wait until the surgery opens and request a home visit. n (%)	Telephone to request an immediate home visit by a doctor. n (%)	Telephone the surgery emergency number for advice. n (%)	Go straight to casualty / accident & emergency. n (%)	Visit the chemist / pharmacist for advice. n (%)	Not seek professional advice. n (%)	Other. n (%)
If in the evening after your doctor's surgery had closed you had a bad earache, would you…	488 (38)	7 (1)	12 (1)	281 (22)	53 (4)	222 (18)	154 (12)	55 (4)
If … you had sickness & diarrhoea and stomach pains, would you…	322 (25)	20 (2)	43 (3)	333 (26)	31 (2)	168 (13)	281 (22)	75 (6)
If … you had a dull headache (not a migraine) for which you were taking pain killers, would you…	300 (24)	5 (<1)	6 (1)	80 (6)	7 (1)	105 (8)	676 (53)	98 (8)
If … you had chest pains and felt out of breath, would you…	78 (6)	4 (<1)	197 (16)	555 (44)	356 (28)	11 (1)	39 (3)	35 (3)
If … you couldn't sleep…	110 (9)	2 (<1)	1 (<1)	14 (1)	4 (<1)	42 (3)	961 (75)	148 (12)
If … you had a fall and hurt your leg and had difficulty walking, would you…	301 (24)	29 (2)	20 (2)	135 (11)	622 (49)	7 (1)	110 (9)	53 (4)

Table 5. Likely course of action taken in response to different illness scenarios.

- 6 – Go straight to casualty/accident & emergency.
- 5 – Telephone to request an immediate home visit.
- 4 - Telephone the surgery emergency number for advice.
- 3 – Wait until the surgery opens and request a home visit.
- 2 – Wait until the surgery opens and telephone for advice.
- 1 – Visit the chemist/pharmacist for advice.
- 0 – Not seek professional advice.
- 0 – Other.

The ranking is somewhat arbitrary, and can be questioned, for example, there may be circumstances in which attendance at A&E is considered a less severe response to a given scenario than a request for a home visit would be. However, it was felt that generally speaking immediate resort to hospital without the mediation of a primary care gate-keeper constitutes the more extreme response. Similarly, the content of the 'other' category is unknown and may comprise, for example, an immediate visit to a co-operative base surgery, or, one of a range of self-treatment options. It was because of this uncertainty that it was felt best to code the category as 0; effectively excluding it from the analysis.

Once the alternative courses of action had been weighted, the response to each of the scenarios could be summed to give an individual score for each respondent, ranging from 0 to 36, (a score of 0 would indicate that the respondent had ticked *"Not seek professional advice"* or *"Other"* in response to all of the scenarios, and a score of 36 would indicate that *"Go straight to casualty / accident & emergency"* had been selected in each case). The resulting statistic amounts to an index of potential demand, with low scores indicating a tendency to self-treat or to wait and seek advice during working hours, and high scores indicating a tendency towards requesting out of hours visits, or, attending A&E. Graph 1 shows the range of scores and the number of respondents with each score.



Graph 1.

As one would expect from the analysis of the individual scenarios, with a few exceptions, most respondents tended to avoid the extreme options of doing nothing or demanding immediate intervention in all scenarios. Rather the distribution appears to be close to the bell-shaped curve of the normal distribution, with the majority of respondents close to the mean. Even so, there are significant numbers of respondents at either tail of the distribution. And it is here that the inappropriate users of the out of hours service are likely to be found, either because they are likely to 'over-react' or 'under-react' to scenarios in which the majority of their peers would take a more moderate course of action.

We were interested in which socio-demographic sub-groups tended to score more highly on the potential demand index. To make this comparison, the means for different sub-groups were compared, and the significance of the variations was tested using the analysis of variance (ANOVA) test. The findings are illustrated in table 6.

Men had a slightly higher mean than women, but this was not significant at the 95% confidence level. Age, social class, housing tenure, qualifications and information variables all showed significant variation at the 95% level. The greatest variance was found between respondents in different age-bands. Generally, there was a tendency for the means to rise across the age bands, increasing quite sharply after age 55. This may be because one of the vignettes referred to chest pains and breathlessness, which older respondents might have been more likely to interpret as a possible heart attack, given the greater prevalence of this condition among the over 55s. Similarly, the consequences of a fall which causes a leg injury are more likely to be severe among the elderly, which might make them more inclined to seek professional help.

There was also marked variation between respondents with different educational qualifications. Those with no formal qualifications had a mean of 14.82, compared with a mean of 12.22 amongst those with a degree or higher degree. This may partly be a function of age and social class, as older age groups tend to have fewer qualifications, as do those in the less affluent social classes. However, the variation between social classes, though significant, was not as great as that between different groups of educational attainment, with social classes 1 and 2 (professional, managerial & technical) having a mean of 13.43, compared with 14.33 for classes 5 and 6 (partly skilled and unskilled). Mean variation between those who owned their homes and those who rented was even less decisive than that between the different social classes, (13.43 and 14.33 respectively).

It is often suggested that the inappropriate use of out-of-hours services might be reduced by the provision of medical information to patients. The survey included two questions on this topic. First, *"Some people keep books or leaflets in their home about what to do if they or members of their family have certain types of illness. Do you have in your home any books or information that tell you how to treat certain illnesses?"* Secondly, *"Have you ever obtained from your doctor's surgery a booklet or information on how to treat yourself or look after yourself when you are ill?"* The mean potential demand index scores for those who answered yes to the above questions were compared with those who answered no. In both cases those who claimed to have such information had lower means than those who did not. However, although statistically significant, these variations were not great, and any relationship

	MEAN Tables			ANOVA Tables				
	Mean	N	Std. Dev.	Sum of squares	DF	Mean sq.	F	Sig.
Gender				27.653	1	27.653	0.848	0.357
Male	13.76	555	5.8809					
Female	13.46	682	5.5671					
Total	13.60	1237	5.7096					
Age				1980.022	5	396.004	12.724	0.000
18-23	12.39	67	6.2254					
24-34	12.32	196	5.5850					
35-44	12.88	244	5.5103					
45-54	12.80	254	5.3310					
55-64	14.33	206	6.0442					
65+	15.67	270	5.3207					
Total	13.60	1237	5.7096					
Social Class				242.975	1	242.975	7.722	0.006
SC1&2	13.25	533	5.6426					
SC5&6	14.74	137	5.4773					
Total	13.56	670	5.6374					
Housing Tenure				137.445	1	137.445	4.262	0.039
Owner occupied	13.43	1002	5.989					
Rented	14.33	205	6.0557					
Total	13.58	1207	5.6374					
Qualifications				976.460	3	325.487	10.582	0.000
None	14.82	311	5.2925					
CSE / O'Levels	13.15	317	5.4176					
A'Levels	13.17	245	5.7310					
Degree / higher degree	12.23	229	5.8498					
Total	13.43	1102	5.6181					
Information								
Medical books				184.681	1	184.681	5.755	0.017
Yes	13.18	655	5.5422					
No	13.98	536	5.8110					
Total	13.53	1191	5.6760					
Information leaflets				185.894	1	185.894	5.827	0.016
Yes	13.04	396	5.2525					
No	13.87	798	5.8346					
Total	13.60	1194	5.6598					

Table 6. Aggregate potential demand – Mean & ANOVA tables

between uptake of information and potential demand for services might be confounded by other factors such as educational attainment and social class.

3.4. Potential demand among parents with sick children

A quarter of respondents (n=332) reported that they were the parent or guardian of one or more children under the age of 16. In most instances one would expect that the parent would decide upon the course of action to be taken if their child became ill outside of normal surgery hours, (although this may not always be the case with older children). Seeking help on someone else's behalf is quite different to seeking help for one's self, so we were interested to see how parents would respond to illness vignettes relating to their children. Four such vignettes were included in the questionnaire, using the same alternative courses of action used with the adult vignettes. The findings are given in table 7.

Two of the sick child vignettes, (concerning earache and sickness and diarrhoea), were similar to those relating to adults. And we were interested to compare the course of action taken by adults on their own behalf, with that taken by parents on behalf of their children. To avoid demographic variations between parents and the adult population as a whole, we compared the parents' response to the child vignettes with the parents' response to the adult vignettes. In both cases, parents exhibited a higher rate of potential demand on behalf of their children than they did for themselves. For earache 6% of parents would take their child directly to A&E, but only 3% would take this course of action if they themselves had earache; 10% would request an immediate home visit from their doctor on behalf of their child, compared with 1% for themselves; and 64% would call the surgery emergency number for advice about their child, compared with 21% who would do so for themselves. The differences are not as marked for sickness & diarrhoea, 5% would request an immediate home visit for their child, compared with 3% on their own behalf; and 27% would call the surgery emergency number for advice about their child compared with 27% for themselves.

In response to the influenza vignette, 9% of parents would request an immediate home visit, and 41% would telephone the emergency number for advice. As with the adult vignettes, accidents were likely to prompt immediate resort to a hospital A&E department - 71% claiming that they would take this course of action if their child swallowed a bottle of shampoo, compared with 25% who would call the emergency number for advice, and 1% who would request an immediate home visit. The child illness vignettes were not cross-tabulated with socio-demographic variables, because the number of parents was too small.

	Wait until the surgery opens and telephone for advice. n (%)	Wait until the surgery opens and request a home visit. n (%)	Telephone to request an immediate home visit by a doctor. n (%)	Telephone the surgery emergency number for advice. n (%)	Go straight to casualty / accident & emergency. n (%)	Visit the chemist / pharmacist for advice. n (%)	Not seek professional advice. n (%)	Other. n (%)
If in the evening after your doctor's surgery had closed your child had a bad earache, that did not respond to a pain-killer, would you...	48 (15)	1 (<1)	34 (10)	212 (64)	21 (6)	9 (3)	1 (<1)	3 (1)
If ... you thought your child had influenza (flu) and he/she had a temperature that was not getting any better or worse, would you...	86 (26)	2 (1)	30 (9)	135 (41)	11 (3)	20 (6)	36 (11)	9 (3)
If ... your child (over one year old) had sickness and diarrhoea, would you...	91 (28)	2 (1)	16 (5)	88 (27)	3 (1)	34 (11)	75 (23)	15 (5)
If ... your child swallowed most of a bottle of shampoo, would you...	2 (1)	0	3 (1)	84 (25)	234 (71)	2 (1)	2 (1)	4 (1)

Table 7. Likely course of action taken by parents in response to illness scenarios concerning their children.

4. Discussion

This has been an extremely difficult study to conduct. Not just because the question of why some people appear to make inappropriate use of the out-of-hours services is inherently complex, but because of the difficulties encountered in obtaining ethics committee approval for the study and the failure to obtain the active participation and support of the GP co-operatives. In a larger project these difficulties could have been overcome, but the available budget only allowed for 16 days of research consultancy, so there was little time available to enter into detailed negotiations with the four ethics committees and seven co-operatives in West Kent. By mid-summer the obstacles seemed so great, and the timetable had slipped so much, that it seemed likely that a substantial part of the budget would have been spent with nothing to show for it. However, despite the difficulties, we have managed to produce: a detailed literature review; a piloted questionnaire, base-line data on requests for home visits in the Maidstone and Tunbridge Wells districts, and most importantly, we have developed a methodology for examining socio-demographic variations in potential demand for out of hours care that has given us some understanding of the subjective processes that shape help seeking behaviour. Although, this does not meet the original aims and objectives of the study, it does mean that we have managed to salvage something of value.

Initially, we had planned to directly survey people whom we knew to be frequent users of the out-of hours service. This was not possible because of the problems described above, so we were obliged to rely on a general survey of the adult populations of Tunbridge Wells and Maidstone, in the hope that this would pick up a significant number of frequent users. In fact, just 14 respondents (1.1%) had requested an out of hours home visit during the previous three months. This may partly reflect response bias; the less affluent social classes appear to be under-represented amongst the responders, and they may be more frequent users. However, other studies suggest that the percentage of people who use the out-of hours service is actually very small. The recently published National Survey of NHS Patients, (Airey & Erens, October 1999), found that just 6% of the population had received an out-of-hours home visit during the previous twelve months. Given that our study asked about home visits during the previous three months, a rate of 1.1% is not totally inconsistent with that found in the national study. Similarly, just 2% of respondents in the national survey had contacted the out-of-hours service 3 or more times during the previous 12 months, so frequent users do appear to be extremely rare.

Whether the rates of service use found in this study are accurate or not, the small number of users meant that there was little point in examining their socio-demographic characteristics. This is regrettable, however, such analysis would have revealed little about the characteristics of *inappropriate* users of out-of-hours services, because socio-demographic variations in actual use may simply reflect socio-demographic variations in actual health need, for example, the elderley appear to request more home visits than younger people, but this might reflect (or even fail to keep pace with) their greater morbidity. In order to draw any conclusions about inappropriate use of services we need to look at variations in the way that different socio-economic groups respond to the *same* health problems.

This was achieved by asking respondents to indicate how they would respond to a number of different illness scenarios or vignettes. The alternative responses were weighted according to the degree of demand they represented. Responses to the different vignettes could then be summed to give an individual potential demand index score for each respondent.

The findings suggest that rather than immediately calling their doctor at the first signs of illness, most respondents appeared to base their course of action on a complex model of risk assessment. Low risk illnesses such as headache or sleeplessness tended to be self-treated or ignored. Conversely, severe injuries, for example, resulting from a fall, were more likely to result in direct attendance at an Accident & Emergency department, without resort to the mediation of the out-of-hours service. Use of out-of-hours services was more common where symptoms were indeterminate, or more precisely, when the risk posed by an illness could not be assessed with a high degree of confidence, for example, chest pains could be symptomatic of indigestion, or, of heart attack, and it is this indeterminacy that may lead some people to seek immediate clinical advice. It is, therefore, important to consider the social, cultural and demographic factors that influence peoples subjective assessments of the threat posed to them by different sets of symptoms.

Those aged over 55 years tended to score more highly on the potential demand index than those in younger age bands. Obviously, qualitative follow-up interviews would be required to ascertain the reasons for this. However, it may reflect the way in which older people interpret the threat posed to them by a particular set of symptoms. Heart attack, for instance, is rare amongst people under the age of 55, but increasingly common amongst older people, it might, therefore, be that older people perceive chest pains to be more threatening, and therefore, more worthy of professional investigation. More generally, older people may simply feel more vulnerable than younger people, because higher rates of morbidity and mortality amongst this age-band lead them to expect more severe consequences to emerge from what others might assess to be minor symptoms, for example, a heavy fall is more likely to lead to a fracture in an elderly person than in a young person.

The more deprived social classes and those who rented their homes tended to score more highly on the potential demand index than more affluent respondents. Again, this may reflect a greater subjective assessment of risk, based on objective social inequalities in the distribution of morbidity and mortality. However, this explanation does not fit the socially deprived as well as it does the elderley. Objectively, it may be that the socially deprived are more likely than their affluent peers to suffer adverse consequences from the same set of symptoms, but the extent of this inequality and public awareness of it, is much less than that which exists between young and old.

That there is more to class differences in potential demand than variations in perceived vulnerability to disease, is reinforced by the finding that differences in educational attainment had a greater impact on potential demand than either social class or housing tenure. Why, if it is not purely a matter of class based variations in vulnerability, should those with a degree or higher degree be less likely to seek immediate clinical advice for a given set of symptoms, than those with no formal educational qualifications? It could be that the highly educated have greater information and intellectual resources that enable them to develop a more accurate

diagnosis of their problems, thereby reducing the degree of uncertainty about the risk involved. There is some evidence to support this, because those who claimed to possess medical books or information leaflets tended to score less highly on the potential demands index than those who did not have such information. Alternatively, this apparent variation could be attributable to age differences.

Interestingly, parents tended to be more likely to seek help for their children than for themselves, at least for some conditions. Again, this may reflect the belief that children are more vulnerable than adults, but it could also be attributable to differences in the social desirability of seeking help on behalf of others and for oneself, i.e. reluctance to trouble the doctor with one's own problems might be considered socially desirable, but failing to seek help for a sick child is not.

It seems that the key issue in demand for out of hours care is uncertainty about the risks posed by a given set of symptoms. People appear to have a very complex model that they use to subjectively assess risk, based on their age, affluence and the information available to them. However, as well as considering the health risks posed by under-reacting to a set of symptoms, we should also consider the social and personal consequences of over reacting, (i.e. of seeking help unnecessarily), which can include, loss of face, shame, and damage to self-identity. Those who seek help out-of-hours run the risk of appearing weak, foolish or irresponsible, and the strengths of these disincentives should not be underestimated. Choosing a course of action involves balancing the risks associated with an inappropriate request for help against subjective assessments of health risk. Both sides of this calculation are probably influenced by demographic and cultural factors, particularly regarding perceptions of vulnerability to disease. Ultimately a decision has to be made under conditions of uncertainty, because laymen lack the knowledge to accurately predict the outcome of their illness. If the perception of health risk is great enough, or if the social disincentives are reduced, for instance, as they are when seeking help for a child, then the individual will inevitably err on the side of caution and seek advice or (more unusually) a home visit from the out-of-hours service. A more detailed understanding of this highly subjective process, and the identification of ways in which it can be improved, can only be arrived at by the adoption of a qualitative research methodology.

Finally, it might be possible to obtain funding for a more comprehensive study from the NHS-E South project grant scheme, but it is important that ethics committee approval and the full participation of the seven co-operatives in West Kent are obtained before an application is made.