

Unity or diversity? Recent developments in the organization of out of hours general medical services in Scotland

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The objective of this paper is to describe variations in the different models of out of hours general medical services and identify explanations for variation and the possible influence on patient satisfaction and service costs. A cross-sectional survey of all models of out of hours care was undertaken, including co-operatives, deputizing services, practice rotas and rural general practitioners doing their own cover. Fifteen sites were chosen representing 10 models of care, for more detailed case study; 65 semistructured interviews with key informants were conducted within the case study sites. A postal patient satisfaction questionnaire and an economic analysis were also carried out. Out of hours organizations have developed in response to a complex mix of the population served, geography, resources available and political expediency, leading to considerable structural heterogeneity, even within co-operatives. There was little evidence of formal integration with other services. Only the largest co-operatives showed any evidence of utilizing guidelines/protocols or of providing formal staff training. There were clear differences in the structure of out of hours care in urban and rural areas. Increasing the use of centralized call handling and triage will not address the needs of rural GPs, who would still be required to be available for work. Neither patient satisfaction nor costs varied by model of service provision. The English out of hours review has outlined an integrated model of service provision with consistent standards within an accountability framework. It would appear that only the largest organizations will be in a position to address these standards and that they are likely to be inappropriate to the needs of GPs in rural areas.

Key words: out of hours care; patient satisfaction; service delivery; service organization

Introduction

The organization of out of hours general medical services has changed radically for most of the UK population over the past few years, in response to both rising demand for out of hours care (O'Donnell *et al.*, 1999a; Salisbury, 2000) and the increasing strain felt by many general practitioners

(GPs) in providing it (Heaney, 1994; Hurwitz, 1994). Agreement between the government and the General Medical Services Committee in 1995 allowed GPs to transfer responsibility for night visits to another principal and gave them the right to decide, on clinical grounds, where care should be provided (Hurwitz, 1995). A development fund was also created to cover the start up and running costs of projects above the level of individual practices.

Since then, co-operatives of principal GPs have become the dominant model of service provision, with 22 000 UK GP members of co-operatives in

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1998 (Hallam *et al.*, 1999). However, these vary widely in the levels of service provided, characteristics of the population served, geography of area covered and size of the organization (O'Donnell *et al.*, 1999a; Hallam and Henthorne, 1999; Payne *et al.*, 1997). Additionally, while the rise of co-operatives has been significant, many GPs continue to make significant use of deputizing services or work in smaller 2–3 practice rotas, while others still provide out of hours cover themselves, particularly in remote and rural areas. Indeed, change has been more difficult to achieve and there is a greater diversity in the type of service provided in rural areas (Robertson, 1997; Ross and Gillies, 1999).

To date, much of the research evaluating out of hours care has compared co-operatives or GPs delivering their own out of hours care with deputizing services (Cragg *et al.*, 1997; McKinlay *et al.*, 1997; Salisbury, 1997a; 1997b; 1997c) or with descriptions of co-operatives alone (Bain *et al.*, 1997; Heaney *et al.*, 1997; O'Donnell *et al.*, 1999b). These studies have identified variation in the organization of services and in their response to patient contacts. However, a broader understanding as to why such variation occurs is still lacking. In addition, no study has compared the full range of out of hours care, including rotas and GPs doing their own cover. Such an understanding is necessary if we are to develop meaningful standards for organizations to aspire to.

This study has attempted to carry out such a comparison, examining different models of out of hours general medical services across Scotland. The study comprised two phases. The aim of phase I was to describe the variations in the organizational and operational features of the range of models of out of hours care identified. The aims of phase II were to investigate the explanations for service variation and the possible relationship between patient satisfaction and service costs.

Methods

Phase I: Survey of out of hours care in Scotland

In 1998, the Secretary to the Local Medical Committee and the Director of Primary Care (or equivalent) in each Scottish Health Board were contacted in order to identify the structure of gen-

eral medical service provision out of hours, accounting for every practice in the area. They were asked to nominate a contact person for each local type of out of hours organization. The contact persons were asked to provide all available documentation for their organization, including demographics of the population served; business plans submitted to the health board; costings of services; results of patient satisfaction surveys; staff surveys; clinical and organizational protocols/guidelines; and quality assurance and complaints procedures.

These data were collated and used to establish a matrix of out of hours organizations in Scotland. Principal characteristics used to define this matrix were:

- Type of organization: co-operatives were self-defined (four or more practices providing care from a centre); rotas were defined as groups of two to three practices.
- Size of population served: defined as small (under 50 000); medium (50 000–100 000); or large (more than 100 000).
- Geography: defined as urban, urban/rural, semi-rural or rural.
- Deprivation: defined as low, medium or high, based on the Carstairs and Morris score of the local government district(s) covered by the organization (McLoone, 1994).
- Nurse triage: present or absent.
- GP transport provided by the organization: present or absent.
- Patient transport provided by the organization: present or absent.

Phase II: Identification of study sites

The final matrix depicted 10 different 'models' of out of hours organization (Table 1). Fifteen case study sites, broadly representative of these models, were then selected for detailed investigation. For two of the smaller, rural models more than one site was included to enable sufficient patient satisfaction data to be collected and to allow for variation within this one model type. Each of the sites approached to participate in the study agreed. For small sites, attempts to use local postcode data and population density proved complex. Thus, a purposive sample was selected with predetermined characteristics regarding deprivation and geography confirmed by the sites themselves on selection.

Table 1 Principal characteristics of out of hours service models identified as specified by the matrix

Model	Description	Deprivation	Use of nurse triage	Provision of patient transport	Provision of GP transport	Population covered	Maximum distance travelled by GP or patient (miles)	No of sites studied
A	Small rural and semi-rural practices providing own cover	Low	No	No	No	From 1000 to 7500	From 10 to 30	
B	Medium urban co-operative	Medium	No	No	Yes	81 000	4–5	1
C	Medium urban/rural co-operative	Low	No	No	No	59 000	10	1
D	Medium urban co-operative	High	No	No	Yes	89 000	4–5	1
E	Large urban co-operative	Medium	Yes	No	Yes	200 000	6–8	1
F	Large urban/rural co-operative	Low	No	No	Yes	350 000	~30	1
G	Large urban co-operative	High	Yes	Yes	Yes	950 000	6–8	1
H	Small urban/rural co-operative	Medium	No	No	No	61 000	4–5	1
I	Large deputizing service	High	No	No	Yes	250 000	~15	1
J	Small semi-rural rotas	Low	No	No	No	11 000 and 15 000	~15	2

Note: columns two to six indicate the principal characteristics of the matrix of out of hours service provision developed from phase I of this study. Columns seven and eight are the specific characteristics of the sites used to represent the model of service provision. Column nine indicates the number of study sites included to represent the model of service provision.

Urban GPs providing their own out of hours care were not included as a study site. From phase I of the survey it was estimated that this group comprised less than 1.5% of urban GPs. Ethical approval from the Multi-Centre Research Ethics Committee was granted for this study.

Interviews with key informants

Semistructured interviews were carried out with the lead GP/medical director and, where appropriate, the general manager at each site. Additional interviews were conducted with service GPs and with other staff, including nurses, receptionists and drivers, to investigate different perspectives within the organization. The issues addressed during these interviews were informed by the initial data collected from each site and by issues in the Scottish Office GP Out of Hours Services working group report (GP Out of Hours Services Working Group, 1998). These included the natural history of each organization's development; the management structure and size of organization; call handling and triage; use of nurses; patient transport; integration with other services; access to and use of services; the advantages and disadvantages of current arrangements; and resource use.

A total of 65 interviews were conducted over

seven months, with only two GPs declining to be interviewed due to lack of time. All interviews were carried out by the principal researcher (HT) and lasted between one and three hours. Each interview was tape recorded, but not transcribed verbatim. An Access database was developed, reflecting the content of the interview schedule. Tape recordings were replayed in full soon after interview. Items of data extracted and transcribed selectively (but verbatim) in relation to the specific issues of study and were entered directly into the relevant fields of the database. Other themes and areas that emerged during the interviews were added into the database. Each broad area was then analysed across the interview sites by either HT or COD to identify common issues and areas of difference. The audio tapes were archived.

Postal questionnaire to patients

A postal questionnaire was developed based on those used in previous studies (Drummond *et al.*, 2000; Heaney *et al.*, 1997). The questionnaire was tailored to the age of the service user and type of contact (home visit, telephone or centre visit) and included reasons for and experience of contacting the organization and satisfaction (see Appendix 1). The questionnaire was sent to parents/guardians of

under-fives and the over-65s. These groups were selected as they are high users of out of hours care (O'Donnell *et al.*, 1999c; Salisbury, 2000). The target number of completed questionnaires was calculated as 200 for each sample group in each site.

Service providers provided lists of consecutive contacts within the required age bands, removing any known deaths. Two single-handed rural sites felt it was impractical to collect enough patient contacts in the time period available, so did not participate in this part of the study. Responses across the other four rural sites that did participate were grouped together for analysis purposes.

A logistic regression analysis was carried out using overall satisfaction as the dependent variable. Variables were considered significant at $P < 0.01$.

Economic analysis

An analysis of the costs of out of hours contacts was conducted based on a postal questionnaire sent to each organization. Information on the quantities of resources used by each organization was collected, and included staff, GP time, transport, communication and call handling, equipment, buildings and overheads. The unit costs of resources were based on market prices and estimates of opportunity costs.

Results

Phase I: Survey of out of hours care in Scotland

The survey of health board areas identified 37 co-operatives, 23 rotas and two deputizing services. Of the organizations identified, 29 (78%) co-operatives, five (22%) rotas and both deputizing services provided further data.

At the time, 4 032 389 people (75% of the Scottish population) received their out of hours general medical services care from GPs working in co-operatives. The completeness of the data available varied according to the area under consideration and by organization, with co-operatives most likely to supply information requested. For example, all co-operatives were able to supply information on the size of population covered, hours on duty, and the computer system used. Over 75% of co-operatives could supply information on staffing levels, 69% had complaints procedures set up, 55% could supply data on the number of patient contacts

they had per annum and the result of those contacts in terms of home visits, centre visits and telephone advice. Governance issues were also examined: 69% of co-operatives had conducted staff satisfaction surveys, 72% had developed protocols or guidelines, but only 31% had developed quality standards. When asked, 79% had conducted patient satisfaction surveys. However, the quality of these varied greatly with sample sizes ranging from under 100 to 1500, wide variation in response rates and no standardized format across co-operatives.

Data available from rotas were more limited. One had a complaints procedure in place and was in the process of developing quality standards. The same rota, along with one other, had also carried out a survey of patient satisfaction. Both deputizing services identified had a complaints procedure in place, had developed protocols/guidelines and quality standards and one had conducted a patient satisfaction survey.

Phase II

Fifteen case study sites were selected to represent the different models of out of hours care initially identified. The characteristics of these sites, in terms of the area and population served, are outlined in Table 1. Further details are contained in Tables 2 and 3. In each, blank cells indicate either that no information was available or that none was elicited during the interviews, due to time limitations.

Urban sites

The following sections concentrate on data collected from the co-operatives, deputizing services and rotas, principally located in urban areas. Principal characteristics are detailed in Table 2.

Size and management structure

Co-operative size varied greatly, from eight practices with 41 GPs up to 220 practices with over 600 GPs. The size was determined by several factors, principally the number of GPs wishing to subscribe, the geographical location and the level of health board input. In one co-operative the health board determined the area covered. In this site funds were made available on the condition that both rural and urban areas were included. In another urban/rural co-operative, GPs had to carry out their own home visits if patients lived out with a certain geographical area.

Table 2 Features of the urban case study sites

Feature	Model type				
	B Medium urban co-op	C Medium urban /rural co-op	D Medium urban co-op	E Large urban co-op	F Large urban/ rural co-op
No. of GPs/practices	12 practices	42 practices	56 GPs	125 GPs/36 practices	204 GPs/53 practices
Staff other than GPs	Nonmedical manager, receptionists, secretaries, drivers	Nonmedical manager, receptionists, drivers	Nonmedical manager, receptionists, drivers	Triage nurses, receptionists. (administrative staff, drivers, security and doctor for home visits provided by deputizing service)	Nonmedical manager, receptionists, administrative staff, drivers, project co-ordinator and traffic controller
Centralized call handling	Yes, calls handled centrally for most co-ops in the HB area, then passed to appropriate co-op	No, calls taken by receptionist, passed on to GP. No protocols, use common sense	No, calls taken by receptionist, passed on to GP. No protocols, use common sense	No, calls taken by receptionist, passed on to nurse for triage	Yes, for HB area
GP transport provided by organization	Yes, car, driver, mobile phones and pager provided	No, but can use patient transport if required	Yes, 2 cars. Drivers, mobile phones, radio contact and faxes provided	Yes, drivers and mobile phones provided by deputizing service	Yes, cars, drivers, ambulance radios, mobile phones and pagers
Relationship with A&E	No formal contact	Some links with local A&E	Links with local A&E poor. A&E now refuses to see anything that is not strictly an emergency	Meet with A&E approx twice p.a.	Good relationship, regular contact to discuss issues, e.g., referrals
Integrated working with other services	Good relations with district nurses, social work, mental health services. No formal link with any	District nursing based in same centre but no formal link; CPNs about to start out of hours service; no integration with social work	None	None	Yes, CPNs based within service and take calls; Nurses and home carers based in same building

A&E: Accident and Emergency Department
 CPN: Community Psychiatric Nurse
 DN: District Nurse
 GMS: General Medical Services

Although the size of the organization impacted on the management structure required, all co-operatives had created an executive/management group that met regularly, with an open meeting for all members annually. One large co-operative had set up three subcommittees, responsible for prescribing, audit or complaints. Other sites del-

egated responsibility for arising issues to individual members of the executive committee.

Centralized call handling

Three out of seven co-ops and one of the rotas had implemented centralized call handling (without triage) to field calls to the appropriate

Table 2 Continued

Feature	Model type				
	G Large urban co-op	H Small urban/ rural co-op	I Large deputizing service	J Small semi- rural rota 1	J Small semi- rural rota 2
No. of GPs/practices	~620 GPs/220 practices	41 GPs/8 practices	90 GPs	2 practices	9 GPs/3 practices
Staff other than GPs	Nonmedical manager, triage and treatment room nurses, receptionists, administrative staff, security, drivers	Receptionists, office manager, security	Nonmedical manager, nurse practitioners, receptionist, administrative staff, driver, operators/controllers	2 receptionists for Sat. morning clinic	Auxiliary nurse, office manager
Centralized call handling	Yes, for city	No, receptionist takes calls until midnight, then GP	No, calls taken by receptionists; passed to triage nurse or GP	No	Yes, use deputizing service
GP transport provided by organization	Yes, cars, drivers, computer link	No	Yes, cars, drivers, radios, mobiles and pagers	No	No, use own transport. Given pager plus practice mobile phone
Relationship with A&E	Good relationship, particularly at sites with a primary care emergency centre, where A&E can pass on GMS patients	Generally good relationship; open access patients less likely to go to A&E with primary care problems	No formal relationship	No formal links	Local A&E closed. Now have to travel 20 miles to city casualty
Integrated working with other services	None	None	None	None. Use same DNs as daytime service, so no problems. Difficult to contact social work or CPNs, although rarely required	None

local site. One organization used call handling because the health board had insisted on it. One rota had delegated its call handling to a deputising service.

Triage

Organizations with centralized call triage were generally positive about its introduction, although some GP members reported missing the opportunity to follow patients through and being unaware of the deciding factors for arranging a consultation. Members of organizations that did not centralize

triage were unsure about the advantages and disadvantages of such a system.

In two co-operatives, GPs carried out call triage. However, they often found it to be a stressful experience, as illustrated in the following quote.

you put enormous pressures on your self worrying that you are giving your partner who is visiting excess of calls, again everyone has their own confidence levels of what they deem as an urgent or an appropriate call

Table 3 Features of the rural case study sites (model A)

Feature	Site				
	Single-handed GP	Single-handed GP	Island practice with casualty unit	Group practice GP	Group practice with casualty unit
No. of GPs	1 GP	1 GP	5 or 6 GPs	3 GPs	6 GPs
Staff other than GPs	Practice nurse, if GP busy			Dispenser and other staff trained in dispensing	
Centralized call handling	No. Calls taken by GP or by wife	No. Calls taken by GP or by wife	No	No, if mobile out of range someone at home takes message. Get spouses allowance for rural practice	No
GP transport	Uses own car	Uses own car	Use own cars	Use own cars	Use own cars
Integrated working with other services		No formal arrangements	No formal arrangements; CPN available on the island with police station used as 'safe place' if required	No formal arrangements. Very difficult to access social work or mental health services	No formal arrangements. Used to working with DNs in daytime, so no problem out of hours
Other features	Dispensing facility at the surgery. Minor casualty service 20 miles away. If hospital required, emergency volunteer ferry service must be called out	Dispensing facility at the surgery. Minor casualty service 10 miles away. If hospital required, emergency volunteer ferry service must be called out	Community hospital available. Patients requiring larger hospital go by ferry or are flown off	Casualty unit and GP hospital 30 minutes away; nearest casualty with X-ray facilities 1 h away	Run community hospital and casualty unit with the nurses

or whether social factors come into it and that is what I find the stressful part.

GP member, urban co-operative.

Some GPs felt that nurses would be better at triage, being more likely to stick to protocols. However, only two organizations used nurse triage, both large urban co-ops. These organizations felt that the use of nurse triage was a more efficient way to provide the service although there were some misgivings. Concern was expressed in organizations not utilizing nurses that it would be expensive to implement and the protocols would be overcautious, thus increasing the consultation rate.

Patient transport

A dedicated patient transport service was available in only one site, a large urban co-operative

with high levels of socio-economic deprivation. Perceived advantages of patient transport were that it had reduced unnecessary house calls and was a more efficient way of using GP time.

It is a very, very good leverage to encourage somebody to come down to a centre . . . they can't say I don't have transport or I can't afford a taxi.

GP member, large urban co-operative.

Organizations not providing patient transport were concerned about the cost of such a service and the fear that demand would spiral. Some felt that the provision of such a service was not the responsibility of the health service. One GP in an urban co-operative without patient transport made the following remark:

Yes there are going to be some patients who cannot perhaps afford a taxi, that is not my problem, that is a government problem, a social work problem, I am not a taxi.

GP member, medium urban co-operative.

Contacting the service

Only three organizations (two co-operatives and one rota) utilized an automatic call-diversion system, connecting patients to the service in one call. In all other cases, the patients received a recorded message giving the number of the on-call service, which they then had to call. If the GP or nurse were unavailable, the patient was called back although in some situations, e.g., chest pain, call from call box, were given priority.

Informing the patient's GP

In most cases, the patient's GP was informed the next morning, often before 08:00 h. This was by fax or van delivery, although one site emailed the practice and another was exploring this as a future possibility. One site faxed only priority calls (e.g., deaths, admissions to hospital) to the practice by 08:00 h next morning. Information on all other calls was posted to practices in the general mail.

Guidelines/protocols

There were few examples of formalized guidelines or protocols. Two sites commented that they did not use protocols to guide initial telephone contacts, but relied on the common sense of their receptionists when passing calls to the GP. Those that did exist were in the larger organizations (two large co-ops and the deputizing service) and fell into two groups:

- Management issues – protocols or algorithms to guide nurses during the initial telephone consultation/triage.
- Clinical issues – for example guidelines on the meningitis; managing hot children; chest pain; croup.

Training

Training was most apparent in the large organizations. Examples included training for receptionists, triage training for nurses and for GPs, training on telephone consultations.

Relationships with other services

The relationship with A&E varied from no formal links at all to one with regular meetings to discuss issues of joint interest, e.g., referrals. In one site, A&E now refused to see any clinical problem that was perceived to be 'primary care'.

Most organizations reported having links with community nursing services, though it was felt that these could be improved. Accessing mental health services and social work was considered to be less than adequate and time consuming. No organization had formally agreed relationships with other health or social services.

Rural sites

Five sites were designated as small rural sites providing their own cover (sites A), of which two were single-handed GPs and three were rural group practices (two with attached casualty units). A number of features distinguished the rural sites from any of the others (Table 3). In general, their geographical location dictated the type of service offered. Most were dispensing practices and were remote from casualty services, though two were integrated with a local GP run casualty unit. In three sites, transfer of patients to larger hospital facilities required an emergency volunteer ferry service or airlift. In general, decisions about seeing patients were made by the GP, with no use of nurse triage although one site was keen to implement nurse triage. A number of the GPs also expressed unease about passing on the responsibility for their patients to someone else for triage. Centralized call handling was not used. For both single-handed GPs, their spouses would take calls if they were out, as also sometimes happened with the group practices. This role was formally recognized by a financial allowance for this. Links with other services were not well developed and mostly consisted with informal arrangements with community nursing staff.

Obstacles to uniformity in recent changes across rural and urban areas

The important changes in service provision were often raised by the rural GPs. Members of some small rural practices and rotas discussed trying to join nearby co-operatives. These approaches were unsuccessful because the co-operatives felt unable to cope with the increase in distance that would result. One area did have a co-operative covering

an urban centre and a rural hinterland. However, this was due to the health board only funding the co-operative if it covered both. In contrast to this view one member of a small semirural rota suggested that joining a nearby co-operative would be of no benefit due to the increased area they themselves would have to cover.

... just stick with what we've got rather than leaving myself potentially with a huge area to cover with very little in the way of benefit.

GP, small semi-rural rota.

This potential clash between urban and rural areas was apparent in other areas as well. A GP member of an urban co-operative discussed how urban GPs have little knowledge or experience of rural practice.

... I can understand why the rural practices feel slightly left out but I think that to force urban general practitioners to go into that environment is probably not to the benefit of the patients nor particularly to the doctors.

GP member, medium urban co-operative

A number of rural GPs interviewed, had considered using centralized call handling and triage. However, this was not seen as a helpful alternative. This service may reduce workload, but it would make no difference to the GPs out of hours commitment, as they would still have to be readily available to deal with the call. This pressure of constant on-call was particularly apparent for the single-handed GPs. Rural GPs reported feeling that they had been treated inequitably with regard to resources and with regard to the wider changes occurring in out of hours provision. Several GPs in these sites suggested that health boards were getting a high level of service for only minimal resources.

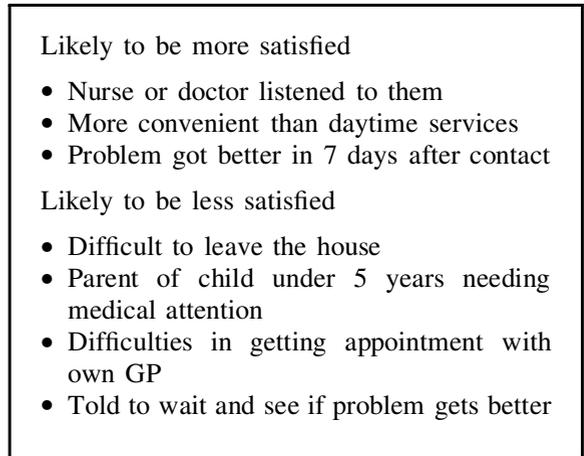
Patient satisfaction

In total, 5382 questionnaires were posted across 13 sites. Of these, 701 patients explicitly declined to participate in the study, 82 questionnaires were returned incomplete, and 238 were returned undelivered. The final response rate was 52.3% (2284/4361).

The percentage of respondents reporting being either 'fairly satisfied' or 'very satisfied' with their out of hours contact was 87%, ranging from 84% at a large urban co-operative to 93% in a small

semirural rota. Following logistic regression analysis, using overall satisfaction as the dependent variable, the factors associated with satisfaction were identified (Figure 1). The strongest predictor of satisfaction was whether the doctor or nurse listened to the patient. There was no significant difference in satisfaction by models of out of hours care provision, size of organizations, urban and rural areas, level of deprivation, use of nurse triage, patient or doctor transport.

Figure 1: Factors associated with variations in patient satisfaction



Service costs

Total annual costs for an organization ranged from £54 506 for a semirural rota covering 15 000 patients to £3.2 million for a GP co-operative covering 350 000 patients in a rural health board with one large urban area. Costs per 1000 population varied from £2196 for a commercial deputizing service to £12 120 for a medium-sized urban/rural co-operative. Between 65 and 84% of total costs were for GPs' time. The costs of centre contacts varied from £10 to £16, home contacts were between £21 and £60, and phone contacts varied between £6 and £11. There were no obvious relationships between costs and the size and other characteristics of organizations.

Discussion

This study is the first in the UK to undertake a comparison across the full range of out of hours

service models, from large co-operatives to single-handed GPs doing their own on-call. The study combined a cross-sectional survey of out of hours provision in Scotland in 1998, a cost analysis, a patient satisfaction survey and interviews to provide a review of organizational issues and professional perspectives in 15 case study sites. These case study sites were chosen to represent the range of service models used and populations served in Scotland and the total population served by the study sites included in this research cover 42% of Scotland's population.

There were several limitations to the study. We covered a comprehensive representation of service provision in Scotland, but a large number of interviews was required to achieve this degree of representation. There is a balance to be struck between the number of case study sites to be included in such a study, and the level of detailed information collected in each site. In particular, the variations within rural out of hours services needs further investigation. Untangling the interaction between structure, process and outcome in complex interventions such as this is always problematic. The explanations given in this paper are based on a comprehensive overview and influences at a macro level and are therefore potentially relevant to other areas with similar local variation.

The trade-off between detail and coverage was also problematic in relation to processing the interview data. In our judgement it was not necessary to transcribe each interview in full because the items of data which were germane to our research questions were identifiable as circumscribed responses to specific interview questions. Selectively transcribing individual verbatim utterances into a database allowed the interviewees' responses to be directly compared and contrasted. While this approach inevitably produces a constricted and less multidimensional interpretation of the data than a full verbatim transcription would have done, it does maintain a systematic and rigorous approach to the task of interpretation, and facilitates an account which is valid, focussed on specific issues and highly relevant.

While the issue of collaboration with other out of hours service providers was incorporated in the interviews, there were no data collected from the other services (e.g., A&E departments) as this was beyond the scope of the study. This may have

meant a partial view of the overall picture of out of hours services in some areas.

Variations in service provision

The study identified considerable structural heterogeneity in the out of hours study sites. Some of this would be expected, for example a small group practice serving a rural area will clearly be very different from a large urban co-operative. However, even within service models there was heterogeneity. There are likely to be many reasons for this. In some cases, this may be due to the characteristics of the population served. For example, the co-operative providing patient transport served a large, deprived population and use of this service is strongly associated with deprivation (O'Donnell *et al.*, 1999). Geography was also an issue for some sites.

Within co-operatives, it was apparent that issues of clinical governance were more likely to be addressed by the larger organizations. For example, staff training was mainly reported in the large urban co-operatives. Guideline development was fairly limited and was again mainly restricted to large co-operatives. Many organizations did not routinely collect data on response times and, where they were collected, there was a lack of standardisation. Regarding integration with other services, despite some efforts to foster improved formal links there was little evidence of success even among the larger organizations.

The rural areas were also diverse, ranging from single-handed GPs providing their own out of hours care to group practices with attached casualty units. The issues facing rural practice are very different from those affecting out of hours provision in other areas. However, it is unlikely that one solution will be found to the problems facing rural practice in such disparate areas.

Despite striving to fulfil the same remit in terms of out of hours medical provision, it is clear that there are wide variations within and between models and their methods of delivery. The main reasons given for the variations observed are outlined in Figure 2.

Variations in outcomes measured

Despite the heterogeneity in service provision this appeared to have little effect on patient satisfaction or costs. The costs of providing out of hours care varied considerably across organiza-

Figure 2: Main determinants of service provision

- Size of population covered
- Levels of deprivation in population covered
- Population density
- Geography of area
- Proximity to A&E service
- History of local service provision

tions, but with no obvious patterns by type of organization or geography. Variations were more likely to have been determined by differences in the way each organization was set up to meet the local needs of GPs, patients and health boards. Determining which model of care was the most cost-effective was not possible, since data on patients' health outcomes were not collected.

There are several issues with the use of patient satisfaction surveys. Measures of satisfaction are based on an implicit comparison of experience with expectations, and so depend upon expectations as much as experience of the service (Scott and Smith, 1994). Other studies have shown that expectations may be higher for those who have not used out of hours care before, and so expectations differ across types of user, rather than across models of care (Scott *et al.*, 2002). This, however, does not rule out the possibility that the measure of overall satisfaction used may not have been sensitive enough to detect differences across the various models of care.

Policy implications

Since conducting this work there have been major developments impacting on out of hours care with the introduction of nurse-led telephone advice lines (NHS Direct in England (Floren and Rosen, 1999; Munro *et al.*, 2000); NHS24 in Scotland). A recent review of out of hours service provision in England has outlined plans to integrate NHS Direct with all out of hours care, including general medical services, dental services, social services and A&E (Independent Review of Out-of-Hours Services in England, 2000). Patients will be dealt with in a single call.

In addition to plans for an integrated service, the review has outlined that this service will have to develop consistent standards within an accountability framework which would reduce variation between service providers. These new standards will address a variety of areas including time taken to answer calls, response times, hard to reach groups, audit and monitoring of patient satisfaction. All providers of out of hours primary medical care will have to meet a range of quality standards in order to be accredited providers of care. As yet, it is unclear whether or not out of hours services in Scotland will follow a similar route. However, the Scottish NHS Plan (NHS Scotland, 2000) makes it clear that integration and accountability are key strategies for the implementation of change in Scotland.

Results from this study would suggest that, at the present time, most out of hours services in Scotland would be unable to meet the recommendations outlined in the English review. This would be particularly true for nonco-operative models of care and for rural areas. At the time of this study, there was little evidence of formal collaboration between out of hours organizations and other service providers. Services were not using guidelines extensively and the amount of staff training was variable. Whether it is necessary for out of hours services to meet all of the standards set out in the English review document needs to be debated. Considerable resources would have to be invested in out of hours organizations to allow them to meet all of the recommended standards and may not affect already high levels of patient satisfaction.

Some of the larger co-operatives in the study which have had relatively higher levels of investment will be able to adjust to changing circumstances but sustained effort and investment will be required to ensure that all out of hours service providers in Scotland are able to do so. In addition, the implementation of NHS24 in Scotland will lead to the development of service level agreements between out of hours organizations and NHS24 which will address many of these targets. However, it is likely that a blanket imposition of all the standards would overwhelm smaller organizations, to the detriment of the clinical service they are trying to provide.

There was a clear distinction in the structure of out of hours care in urban and rural areas and it is likely that further expansion of co-operatives

across rural areas will not be feasible. The issues facing rural rotas and single-handed GPs require imaginative and innovative approaches.

The potential for increased disparity, despite recommendations for standardisation, is a cause for concern. It is possible that the development of collaborative links between large and smaller organizations may be of benefit. For example, small organizations may not be able to establish their own training programmes or have the resources to develop guidelines but could benefit from access to such developments in the large organizations.

Out of hours organizations have been developed by service providers in response to a complex mix population served, geography, resources available and political expediency, but may not affect patient satisfaction or service costs. The organization of out of hours care in rural areas is markedly different. These issues and the need for locally responsive services will have to be taken into account, if appropriate and sensitive standards are to be set across sites.

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Appendix 1 Patient satisfaction questionnaire

How satisfied were you with:	Very satisfied	Fairly satisfied	Uncertain	Not very satisfied	Not satisfied at all
(a) The telephone contact?	<input type="checkbox"/>				
(b) The location of the centre?	<input type="checkbox"/>				
(c) The waiting time to be seen?	<input type="checkbox"/>				
(d) The treatment you received?	<input type="checkbox"/>				
(e) The overall service?	<input type="checkbox"/>				