Using out-of-hours services: general practice or A&E?

Cathy Shipman, Susan Longhurst, Florian Hollenbach and Jeremy Dale


**Background.** General medical and accident and emergency (A&E) services are the two major providers of open access out-of-hours care, and there are widespread concerns about rising and non-urgent demand presented to both.

**Methods.** This paper examines the differential use of these services out of hours, in an audit and research study two A&E departments and 21 practices in South London. It focuses on aspects of demand, including time of contact, age-related usage and nature of presenting complaints. Through interviews with a subsample of 82 patients who attended A&E, it also provides a more qualitative focus on differential decision making.

**Results.** Findings show that there are differences in the way A&E and general medical services are used in terms of age-related demand and aspects of presenting complaints. Significantly more families with children aged under 10 contacted a GP, and whilst more digestive, respiratory and viral/non-specific complaints were presented to GPs, musculoskeletal problems constituted the largest category of complaints presented at the A&E departments. However, some usage relating to perceived and actual availability of services appeared to be interchangeable in terms of site-of-help seeking.

**Conclusion.** There is a need for a collaborative multi-method approach to respond to and influence demand.

**Keywords.** A&E, general practice, out-of-hours services.

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**Introduction**

Rising out-of-hours demand and changes in conditions of service and remuneration for GPs have stimulated developments within general medical and A&E services. Innovative developments include primary care physicians in A&E; provision of telephone advice and GP co-operatives, with an impetus towards improving interagency working. Much research has investigated demand from the perspective of A&E or GP services, but little research has investigated differential use, particularly during out-of-hours periods.

Demand for A&E or general medical services has been associated with the nature of presenting symptoms, distance from hospital, patient perceptions of services and the accessibility of GPs. Findings on the effect of social deprivation are mixed. One survey of out-of-hours attendance for A&E and general medical care found that 42% of first contacts went to A&E departments in three urban areas with deputizing services, and 34% of first contacts occurred in one urban area with a GP co-operative. The majority of patients tended not to contact their GP before attending A&E often because the problem was thought to be inappropriate or they did not want to bother their doctor; but there are wide variations in reported contact rates for both self-referrers and those referred by their GPs. Satisfaction with access to GPs has not been identified as a significant indicator in choice of treatment although there are studies that
show that A&E attenders have greater dissatisfaction with GPs. It is possible that access may become a more significant element in decision making within the out-of-hours period.1

This paper is concerned with how services are used out of hours and aims to contribute to debates about the nature and type of response. We present findings from an audit and research study undertaken to measure local demand by practice populations for out-of-hours services provided by GPs and A&E departments. The audit concerned patterns of attendance, presenting complaints and differential decision making of patients who attended A&E either directly or via their GP. It was part of a larger project facilitating the development of improved out-of-hours arrangements across Lambeth, Southwark and Lewisham, an inner-city area of south-east London.

Methods

The audit took place over two phases in order to measure seasonal variation, and this shaped the methods adopted. Practices whose patients used King’s College Hospital and Lewisham Hospital were invited to participate, and this included 15 practices during November–December 1995 and 12 practices during February–March 1996. Six practices took part in both phases. Participating GPs completed an audit form on each out-of-hours contact made. For the purposes of comparison, out-of-hours working was defined as being from 6 pm until 8 am on weekdays, and from 12.30 pm on Saturday until 8 am on Monday morning. Deputising Service data were gathered for the first phase but were not available for the second. Two A&E departments participated, and data were gained retrospectively from their central databases. Presenting complaints were coded according to the International Classification of Primary Care.9

Activity data: A&E and general practice

 Routinely collected data from the A&E departments concerning time of attendance, age, sex, presenting complaints and disposal were compared with data gained from participating practices for the 3 weeks of each phase (6 weeks in total), when all 21 practices were participating fully. Similarity of results for both audit phases from the two departments underpin the validity of findings concerning time of attendance, age range, sex, presenting complaints and outcomes. Data from the deputising services enabled us to quantify an average GP non-completion rate of audit forms of 26.5% during phase 1. Of 811 contacts received by the Deputising Answering service, 169 were dealt with by that service and 642 were passed back to GPs, of which 170 were unaccounted for on GPs’ audit slips.

Patient interviews

 Telephone interviews were undertaken with subsamples of patients attending each department who were registered with participating practices. Attendance lists were systematically sampled on two specified days per week for 5 weeks. All patients registered with participating practices who attended during out-of-hours periods on these days were identified. Except for those who met certain exclusion criteria (e.g. recent bereavement), they were sent a letter describing the project and invited to participate. In all, 158 patients were identified as suitable for contact, but 46 had either unobtainable, no or wrong telephone numbers, 13 could not be contacted within 7 days, four refused, four were away, three were in hospital and nine were excluded. As a result, 82 interviews were undertaken.

 A semi-structured interview schedule was constructed following a review of literature, findings from the consultation phase of the Out-of-hours Project,1 and other departmental work concerning patient satisfaction.4,8 The interview concerned differential decision making, satisfaction and information/education needs. This was piloted and refined at the start of the first audit phase. Telephone interviews were conducted to maximize response rates, as these have been shown to be valid and reliable methods of data gathering.20 Two interviewers were recruited and trained, and reliability was assessed at intervals by analysis of transcriptions of the tape-recorded interviews.

Data analysis

 Quantitative data were analysed using SPSSpc and chi-square significance tests. Qualitative responses to telephone interviews were analysed thematically, drawing on a grounded theoretical approach.21

Results

During the two 3-week periods, 2564 patients were identified by GPs or A&E departments as having made contact out of hours; 46.2% (1171) attended the two A&E departments and just over half of patients (53.6%, 1393) contacted their GP or a deputy. Following adjustment for non-completion of audit forms (estimated to have been 26.5%) and lack of phase 2 deputising data (estimated to have been 15%), contacts were 38.7% (1171) at A&E departments and 61.3% (1855) for GPs.

Overall demand was slightly higher for women than men, but Table 1 shows that a significantly larger percentage contacted their GP rather than A&E out of hours (χ² = 15.62; P < 0.01).

Peak times of attendance

 Attendance rates varied between providers and over time. A&E departments saw most attenders during the evening, peaking between 6 and 9 pm (34.8% of all
Table 1  Out-of-hours contacts

<table>
<thead>
<tr>
<th></th>
<th>GP (%)</th>
<th>A&amp;E (%)</th>
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<tbody>
<tr>
<td></td>
<td>(n = 1361)</td>
<td>(n = 1168)</td>
</tr>
<tr>
<td>Female</td>
<td>58.2</td>
<td>50.3</td>
</tr>
<tr>
<td>Male</td>
<td>41.8</td>
<td>49.7</td>
</tr>
</tbody>
</table>

attendances), while the peak was between 7 and 10 pm (33.6% of all attendances) for GPs, although this difference may reflect the impact of different weekday practice evening surgery times. More significantly, Figure 1 indicates that a greater percentage of attendances between midnight and 7 am were at A&E departments (22.2%; 260) than with GPs (8.1%; 115; \( \chi^2 = 89.96; P < 0.001 \)).

Figure 2 shows that the pattern was reversed during Sunday mornings and weekend afternoon periods, when a larger proportion of patients (33.8%; 451) contacted their GP than attended A&E (17.6%; 206; \( \chi^2 = 83.7; P < 0.001 \)).

Age of contacts
There were differences in the age distribution of GP and A&E patients. Figure 3 indicates that children aged under 10 accounted for 44.9% of GP contacts, a significantly greater percentage than A&E contacts (26.5%; \( \chi^2 = 90.36; P < 0.001 \)).

Out-of-hours presenting complaints
Musculoskeletal problems were the largest category of complaints presented at the A&E departments, as shown in Table 2. While digestive, respiratory and viral/non-specific complaints represent major categories of reasons for A&E attendances, they represent a far greater percentage of GP contacts. Differences between other categories were less marked.

Some specific presenting symptoms differed, with more attendances for minor injuries (laceration and hand/finger and head injuries) at A&E departments and greater contacts with the GP for fever, vomiting, cough, diarrhoea and headache, as shown in Table 3.

For some symptoms (e.g. general abdominal pain and asthma) there was little difference in choice of locus of care.
Table 2  Main categories of out-of-hours presenting complaints

<table>
<thead>
<tr>
<th></th>
<th>A&amp;E attenders (%)</th>
<th>GP patients (%)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(n = 1171)</td>
<td>(n = 1393)</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>22.7</td>
<td>6.6*</td>
</tr>
<tr>
<td>Respiratory</td>
<td>16.2</td>
<td>24.9*</td>
</tr>
<tr>
<td>Digestive</td>
<td>17.1</td>
<td>30.0*</td>
</tr>
<tr>
<td>Non-specific/viral</td>
<td>15.6</td>
<td>35.6*</td>
</tr>
<tr>
<td>Skin</td>
<td>9.2</td>
<td>5.8**</td>
</tr>
<tr>
<td>Psychological</td>
<td>3.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Blood</td>
<td>1.8</td>
<td>0.4**</td>
</tr>
<tr>
<td>Circulatory</td>
<td>3.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Eye</td>
<td>2.5</td>
<td>1.8</td>
</tr>
</tbody>
</table>

* P < 0.001.
** P < 0.05.

Table 3  Examples of out-of-hours symptom presentation

<table>
<thead>
<tr>
<th></th>
<th>A&amp;E attenders (%)</th>
<th>GP patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 1171)</td>
<td>(n = 1393)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>4</td>
<td>12.7*</td>
</tr>
<tr>
<td>Laceration</td>
<td>4.2</td>
<td>0.15*</td>
</tr>
<tr>
<td>Fever</td>
<td>3.1</td>
<td>19.8*</td>
</tr>
<tr>
<td>Hand/finger</td>
<td>3.3</td>
<td>0*</td>
</tr>
<tr>
<td>Head injury</td>
<td>3.1</td>
<td>0.45*</td>
</tr>
<tr>
<td>Cough</td>
<td>1.95</td>
<td>7.75*</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>1.9</td>
<td>6.05*</td>
</tr>
<tr>
<td>Headache</td>
<td>0.8</td>
<td>5.65*</td>
</tr>
<tr>
<td>General abdominal pain</td>
<td>6.55</td>
<td>6.15</td>
</tr>
<tr>
<td>Asthma</td>
<td>2.7</td>
<td>2.25</td>
</tr>
</tbody>
</table>

* P < 0.001.

Patient decision making

Over half of the A&E interviewees (57%) had made the decision to attend themselves. This finding is supported by the data routinely collected in A&E departments, where self-referral comprised 56.5% (n = 1171) of attendances. We asked interviewees who they had contacted for help before attending: 35% (19) had spoken to their GP; 9% (seven) had spoken to members of their family; 6% (five) had contacted friends; 2% (two) had made other contacts; and 60% (49) said they had contacted no one else for help. Just over half (56%) said that had their surgery been open, they would have contacted their GP, but 40% said that they would not have done so.

Patients who had initially contacted their GP. Where patients had contacted their GP initially, reasons for needing help included wanting advice on the seriousness of the problem, what to do next, and whether a visit was necessary, together with the need for an explanation of the course of events. The need for advice on medication was mentioned (for example, about side effects), and what to do in certain circumstances such as those of a vomiting child. Respondents also commented on feelings of anxiety and panic about the nature of the illness, symptoms and potential threat to life:

"She got worse, she'd been sick and her temperature was really, really high and that was the first thing I thought, meningitis, basically . . . because there's been children around this area taken into hospital with meningitis."

There was concern about disruption to normal activities (for example, staying up overnight with an ill child), and unwillingness to take a risk with sick children:

"She was unwell and with babies, you know, if it is yourself you can wait . . . you might be able to wait for a couple of days, but with a baby you can't risk that."

Reasons given for attending A&E included GP referral or advice (for example, concerning severity or uncertainty of symptoms), access to necessary diagnostic equipment or treatments, or anticipated delay before the GP could visit. Other reasons included patient dissatisfaction with advice given by the GP and difficulties in making in-hours appointments or an unacceptable delay until a scheduled appointment. Some respondents also anticipated delays in contacting GPs out of hours:

"I rang the emergency doctor . . . waited around for an hour . . . and when I rang back they just said 'Oh no, he may not be here for a couple of hours' . . . I was just so concerned because I was having real problems . . . fever was high and she was having real trouble staying awake . . . that's what made me think I'm going to take her down there."

Patients going straight to A&E. When the patient had not attempted to contact their GP or deputizing service prior to attending A&E, reasons included seeing A&E as the appropriate service for a particular problem (e.g. a fall, an injury or bleeding), in particular when the problem started suddenly and A&E was seen as having the most appropriate diagnostic service:

"I thought if she had any neck injury it would be quite dangerous so I thought it was best to go to casualty. It happened suddenly. I fell and
couldn’t get up so decided I had to call an ambulance.’’

For some A&E attenders, decision making appeared to be have been less related to perceptions of appropriateness than to service availability. In some cases it was assumed that there was no out-of-hours general medical service available. For other respondents, A&E was seen as the speediest option for seeing a doctor:

‘‘It was a Sunday so I thought just go straight to the hospital.’’

‘‘It was quicker for my wife to drive me straight to A&E, you can wait an hour for an emergency doctor to visit and by that time the emergency could be over.’’

For one interviewee, who had attempted but not succeeded in contacting a GP, negotiating access to either service proved challenging:

‘‘I rang the doctor about 100 times, I rang X A&E because that’s where I work, then I tried to ring X hospital to try and get hold of a Health Visitor but that was a failure. I tried to speak to my GP but just ended up speaking to the receptionist, so in the end I just went to A&E.’’

Discussion

This paper presents findings on clinical and non-clinical aspects of demand for A&E and general medical services during out-of-hours periods. It supplements previous work\textsuperscript{15} and adds a new perspective to the literature that has looked at differences in service use, including office hours.\textsuperscript{8,10}

The greater tendency for women to contact a GP and men to attend A&E departments is a finding in common with other research.\textsuperscript{8} Age-related differences, however, are more marked during out-of-hours periods alone.\textsuperscript{8} Families with children under 10 years, but more markedly under 5 years, comprise the largest category of demand for both services, and substantially so for general practice. It is unlikely that this category of out-of-hours demand will diminish, given the moral responsibility implicit in caring for ill children,\textsuperscript{22,23} where help seeking will err on the side of caution.

The peaks in attendance times were different for A&E and general medical services, indicating differences in the ways that patients are using both services. For example, in the early hours of the morning the A&E workload is significantly heavier, while over Sunday mornings and Saturday and Sunday afternoons the general medical services, workload is greater. This may reflect issues of access, availability and knowledge of out-of-hours services. Expectations of delay in receiving help have been identified as influential.\textsuperscript{8,14} We found that just over half of A&E interviewees said that they would have contacted their GP if the practice had been open, indicating that their choice of attendance had been influenced by perceived lack of accessibility. For others, perceptions of a quicker service were important, despite waiting times in A&E which could be several hours in duration.

For many patients, it was the nature of the presenting complaint that was important in the choice of site of care, for example, where there had been an injury, where the problem started suddenly or where A&E was perceived to have the most appropriate diagnostic services.\textsuperscript{4,7} GPs were more likely than A&E to be contacted for non-specific/viral, digestive and respiratory complaints, while patients with musculoskeletal problems and injuries were more likely to attend A&E. There was little difference in the help-seeking location of such presenting symptoms as asthma or general abdominal pain, although there may have been differences in the patient’s experience of severity of symptoms.

Patient decision making is a complex process, and it would seem that in the out-of-hours period, while certain distinctions are made about the ‘appropriate’ locus of care, for most patients help seeking comes at a time when self-help and understanding have failed. The clearer distinction between minor injury and the more diffuse minor illness that has been applied to decision making concerning A&E or general medical services\textsuperscript{2} may be confounded by other variables.

The complexity and rationality of decision making suggests that patterns of use will be hard to change and that energy may be better spent responding to demand rather than solely trying to educate patients. Such responses include providing primary care physicians in A&E, telephone advice and facilitating referral arrangements between GPs and A&E departments, methods of service delivery being provided in some areas.\textsuperscript{3,5} Attempting to influence demand by promoting within-and out-of-hours practice arrangements may be of some use for registered patients, although there is as yet little evidence to suggest the impact that this would have. It would seem, however, that patient education campaigns alone are unlikely to be able to address the context and complexity of the decision-making process and may possibly reach the wrong target audience, for example those over retirement age,\textsuperscript{1} although as yet no systematic evaluation has taken place. As some patients use services interchangeably, collaborative working is essential to ensure that consistent information, messages and accessibility enable both services to be used effectively and efficiently. The growth of GP co-operatives may enable easier channels of communication to be fostered.

A number of methodological issues arose in this study. In part, they reflected the use of an audit methodology, but they also reflected the difficulties of
gathering data in the out-of-hours period. A non-
completion rate of 26.5% was identified for the audit
forms used to collect data on all out-of-hours GP con-
tacts. The difficulties involved in collecting data on out-
of-hours contacts are rarely commented on in other
studies, but may present some bias in the cases that are
reported. Adjusting for the non-completion of audit
forms and lack of phase 2 deputising data, the findings
indicate that the proportions of patients attending A&E
and contacting GPs during the two 3-week out-of-hours
periods studied were 38.7% and 61.3%, respectively.
These proportions are similar to those reported by
Williams et al. in 1985.15 Telephone contacts are not
routinely recorded within A&E departments, and were
therefore excluded from this study. Their impact on
overall A&E workload appears to be limited. They have
been estimated to comprise only 3–5% of contacts,4
and many of these would have been given advice to
attend A&E.

Practices were recruited to reflect both their prox-
imity to the A&E departments and partnership size. It
is possible that a small number of patients may have
used other A&E departments, but this confounding
influence is likely to have been minimal because of the
inverse relationship between A&E use and distance.11,12
As the study design was concerned with
registered patients, homeless people on the streets or
others not registered with a GP would have been
excluded. These groups of people may make greater
use of A&E services.10

Conclusion

There are differences in the way A&E and general
medical services are used both within and out of hours,
and while certain complaints are perceived to be the
province of one or other service provider, perceptions
of lack of service availability together with other con-
tingency factors may shape choice to a greater extent
out of hours. Families of children, in particular those
under 5 years of age, comprise a great proportion of
out-of-hours users for both services, but more so for
general medical services, and this sector of demand is
unlikely to be affected by patient education materials
alone. As some demand appears to be interchangeable
in terms of locus of help seeking, responses require col-
aborative working between general medical and A&E
services using multi-method approaches which may
become easier with the development of new out-of-hours
arrangements, for example GP co-operatives.

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