

An analysis of telephone calls to an inner-city accident and emergency department

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SUMMARY

The general public in the UK often telephone accident and emergency (A&E) departments for medical advice. Such calls are usually dealt with by nursing staff in an informal manner (often with no written record of the call being made). The specific questions addressed in this study are who was calling for advice, when did they call, what were their presenting complaints, and what was the outcome of the call? In addition, the study provided an opportunity to test the implementation of a new system of record-keeping for telephone consultation. A telephone consultation record (TCR) was developed and used to record details of each call made to the A&E department for medical/health advice.

An analysis of 597 consecutive documented calls is presented in this paper. The majority of calls were dealt with by 'E' grade nursing staff (42.7%); only four calls (0.7%) were recorded by medical staff. Two hundred and six (43.5%) calls related to patients aged up to 15 years. In 57% of the cases the call was made by a third party. In all, 149 different presenting complaints were recorded on the TCRs. The three most common presenting complaints were dental problems (7.4%), fever (4.3%), and concerns about drug reactions (23%). Seventy-three per cent of callers were advised that a visit to the A&E department was not immediately necessary.

The study identifies several important issues for development of a more formal and effective system of telephone advice. The majority of calls made to the A&E department appeared to be of a primary care nature but the extent to which nurses are trained to assess and advise on these problems needs to be questioned. A reluctance to document the calls to A&E was identified, one reason being a concern about accountability. Training and support are clearly required.

INTRODUCTION

The general public in the UK often telephone accident and emergency (A&E) departments for medical advice. Such calls are usually dealt with by nursing staff in an informal manner with no written record. The British Association for Accident and Emergency Medicine¹ has developed guidelines for handling such calls and the implementation of formal systems of telephone advice has been recommended by health authorities². A&E staff have also expressed a need to develop such procedures, including the provision of staff training³. A recent survey of practice nurses indicated the potential for developing their role as telephone advisors in the general practice setting⁴.

Telephone consultation may be a safe and effective means of delivering health care in various settings^{5,6}. Given the increasing drive toward consumer oriented and cost-effective

service, development of telephone consultation should be explored as an adjunct to current health care provision. The study described here is part of a larger project at King's College Hospital, London, to develop and implement training and service initiatives in relation to telephone advice provided by nurses in A&E departments. In order to improve the reliability and consistency of telephone advice, problems and issues in relation to current practice had first to be identified. While others have reported on this issue⁷⁻⁹, the locality and populations differ greatly from the inner city district served by King's College Hospital. For example, the study by Kernohan *et al.* was based at a children's hospital that took patients from up to 70 miles away⁹.

The A&E department at King's College Hospital, London primarily serves the residents of the surrounding London boroughs of Lambeth and Southwark. The populations of these boroughs are characterized by high levels of social and economic deprivation. Compared to the average for England, over twice as many Lambeth and Southwark residents live in over-crowded housing; nearly twice as many are unemployed; over four and a half times as many are of black/ethnic minority origin; and over twice as

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many households have no access to a car¹⁰. These factors influence not only health status, and thus need for health care, but also access to health services in general, as well as to telephone advice services in particular.

As part of the development of telephone advice services at King's College Hospital, it was considered important to observe current practice, and describe the nature of demand and callers' satisfaction. The specific questions addressed in this paper are who was calling for advice, when were they calling, what were their presenting complaints, and what was the outcome of the call. In addition, the study provided an opportunity to test the implementation of a new system of record-keeping for telephone consultation.

METHODS

A telephone consultation record (TCR) was developed to record details of each call made to the A&E department at King's College Hospital by the public for advice. It was approved at an A&E care group meeting and all members of the department were instructed that calls for advice should be documented. All nurses who worked in the A&E department at the time of the study answered calls from the public for medical/health advice. There was no formal policy on who should be giving telephone advice at this time.

Data collection

All TCRs completed between 7 November 1993 and 3 February 1994 were entered into the study. Details recorded on the TCR included the date, time and estimated duration of each call; the caller's name, relationship to the patient and telephone number; the patient's name, age, address and postcode of domicile; general practitioner (GP); and the presenting complaint. The member of staff who received the call was asked to complete the TCR by briefly summarizing the problems presented and the advice given, with name and departmental identification number. TCRs were collected daily and filed as hospital records.

Analysis and coding

Information on the presenting complaints was coded by a nurse researcher (RC) using the International Classification of Primary Care (ICPC)¹¹. This involved two levels of classification: first, under a precise description and secondly into one of 17 broad categories. The ICPC was chosen because it allows the coding of data by presenting complaint rather than end stage diagnosis. Advice given to callers was placed into one of the five following categories: visit the A&E department; contact GP immediately; make a routine appointment to see the GP; contact another agency; or follow self-care advice at home.

The data were then entered into a main frame computer and analysed with the SPSS^X package.

RESULTS

There were 597 TCRs completed during the study period. Not all records were complete; the proportions given below relate to the records from which data were available.

TCR completion and staff designation

One hundred and seventy-eight (29.8%) TCRs were completed by D grade nurses, 282 (47.2%) by E grade nurses and 50 (8.3%) by nurses of grade F or above. Four (0.7%) were completed by a doctor or consultant. Eighty (13.4%) TCRs had illegible or missing signatures and no staff number, so the staff member who had taken the call could not be identified.

Patient and caller details

From available data, 323 (61%) calls concerned female patients and 207 (39%) were about male patients; the gender of 67 patients was unrecorded. The age of patients ranged between 1 month and 90 years with a median of 22 years (inter-quartile range 3 years to 31 years). Two hundred and one (33.7%) calls were related to paediatric patients (aged up to 15 years). One hundred and twenty-three (20.6%) TCRs had no record of the patient's age.

From postcode data, 329 (89%) calls were for people living within a 5 km radius of the hospital, with 228 (62%) for those living within 2.5 km. Patients themselves (221, 39.5%) were the most frequent callers, followed closely by parents (197, 35.2%). The remainder were spouses (34, 6.1%), children (17, 3%), other relatives (46, 8.2%), and unrelated persons (45, 8%).

Time of calls

There were 64 weekdays and 26 weekend days included in the study and the total number of TCRs in each category were 348 and 241, respectively. The average number of TCRs completed per weekday and weekend day were 5.4 and 9.3, respectively. There was a similar pattern in the hourly distribution of calls recorded during weekdays and weekend days (Figure 1). Over a third (209, 37%) occurred between 1900 h and 0100 h.

Nature of problem

In all, there were 149 different principal presenting complaints recorded on the TCRs. Table 1 shows the seven broad categories into which 80% of the presenting complaints fell. The largest category of problems fell under the heading of digestive. This included generalized abdominal pain or cramp, vomiting and symptoms or complaints concerning teeth or gums which together accounted for 14% of the documented calls (Table 2). Other complaints which fell into the digestive category

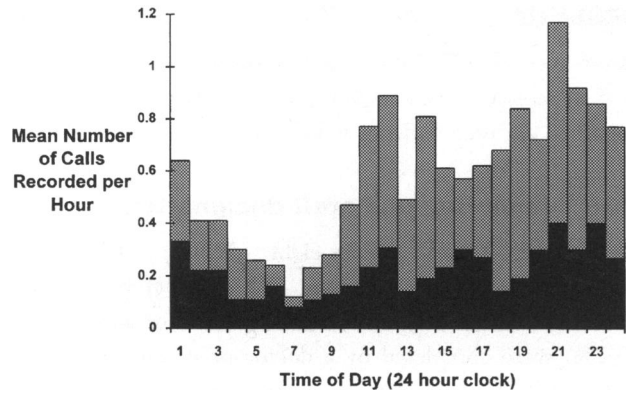


Figure 1 Mean number of calls at different times of day during weekdays and weekends (n=566)

include diarrhoea (10, 1.7%), constipation (9, 1.5%) and symptoms or complaints concerning the mouth, tongue or lip (10, 1.7%).

The category of skin complaints includes lacerations/cuts (9, 1.5%), local swelling/papule/lump/mass (8, 1.4%), burns/scalds (5, 0.9%) and animal/human bites (4, 0.7%). The two most common types of pregnancy related calls concerned antepartum bleeding (11, 1.9%) and requests for the morning after pill (9, 1.5%).

Table 1 Seven most common categories of presenting complaint* (n=579)

Category	n	%
Digestive	157	27.1
General	106	18.3
Skin	46	7.9
Musculoskeletal	44	7.6
Respiratory	39	6.7
Neurological	35	6.0
Pregnancy	34	5.9

Table 2 shows the 10 most common problems, with age distribution details for each presenting complaint group. For example, problems relating to fever and foreign bodies were more common in younger patients than in the general sample.

Advice given

Figure 2 shows that 423 (73%) patients were advised that a visit to the A&E department was not immediately necessary. Of those who were advised to attend the A&E department, 35 (23%) had a problem classified under the broad heading of digestive [e.g. teeth/gums disorder (9), vomiting (5), abdominal pain/cramp (4), diarrhoea (3)]. Other presenting complaints of those advised to attend A&E include asthma (7), suicide attempt (6), head injury (6), fever (5), antepartum bleeding (5) and laceration/cut (5). Of those who were advised to see their GP routinely, nine presented with a headache and six complained of chills (colds and associated symptoms). Other presenting complaints included vomiting (7), abdominal pain/cramp (6), local swelling/papule/lump/mass (6), general symptoms concerning infants (5) and concern about drug reaction (5). The two most common presenting complaints of those who were

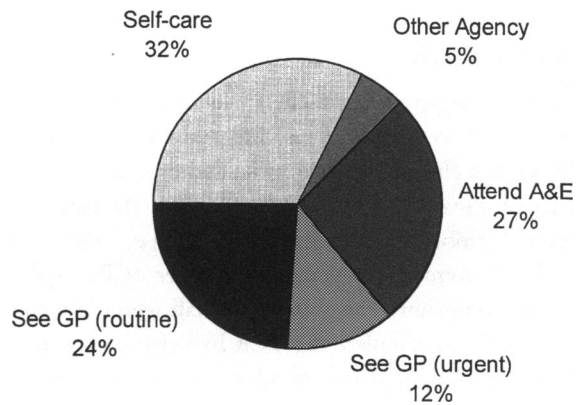


Figure 2 Advice given to callers (n=576)

Table 2 Ten most common specific presenting complaints* by age (n=584)

Presenting complaint	n	%	Median age	Age range
Symptoms/complaints concerning teeth/gums	42	7.4	15 years	3 years-66 years
Fever	25	4.3	3 years	2 months-41 years
Concern about drug reaction	23	3.9	29.5 years	13 months-82 years
Vomiting	22	3.8	18.5 months	2 months-32 years
Headache	21	3.6	8.25 years	8 months-45 years
Generalized abdominal pain/cramp	18	3.1	25 years	1 year-58 years
Chills	15	2.6	29 years	8 months-42 years
Other general symptoms/complaints	14	2.4	43 years	22 years-70 years
Foreign body through an orifice	12	2.1	2.1 years	8 months-33 years
Asthma	12	2.1	15 years	5 months-74 years

given homecare advice were concern about drug reaction (10, 1.7%) and teeth/gum related symptoms/complaints (10, 1.7%).

Seventy-five (36%) paediatric patients were advised homecare; the two most common problems for these patients were fever (9, 12%) and a foreign body through an orifice (9, 12%) which included those swallowed or put into the nose.

DISCUSSION

This study has identified four important issues which require consideration if a more formal and effective system of telephone advice is to be developed.

Documentation

Patient details, such as age, are essential for making an accurate assessment of patients' needs and for providing safe advice over the telephone. However, such information was not recorded in many of the TCRs. Analysis of the relationship between nursing grade and quality of documentation did not reveal any pattern. Since the end of the data collection for this study, calls to the A&E department have continued to be documented with TCRs and additionally, all calls have been automatically tape-recorded. This has revealed a discrepancy between the number of calls documented on TCRs and those recorded on tape. It is likely that during this study some telephone consultations occurred without a TCR being documented, despite it being department policy to use the TCR. This would have resulted in underestimation of the workload involved in telephone consultation.

Nature of calls

The majority of calls in this study were of a primary care or non-trauma nature and only 153 (27%) patients were perceived by the staff to have a problem that necessitated a visit to the A&E department. Table 2 shows that teeth/gum problems were the single most common reason why people called the department. Further investigations were conducted to discover the advice dentists give patients when their surgeries are closed. Calls to all the dentists in the Lambeth, Southwark and Lewisham area revealed that many of their answerphone messages referred patients to local A&E departments, including that at King's College Hospital (despite this hospital not having dental provision during the evening and nighttime period). This information is being fed back to the local Dental Committee and the Health Commission so that dentists can be advised to modify their out of hours answerphone messages.

Operational implications

The majority of calls recorded on TCRs were made during the evenings, afternoons and weekends—i.e. the periods when the availability of GP and community-based primary care services is more limited. The late evening peak period may also be explained by the increase in anxiety that patients and their carers may experience when the night is approaching and they are uncertain as to the seriousness of the symptoms. The department should anticipate this workload in planning its staffing levels.

Training implications

Members of the public use the department as a source of health care advice for a wide range of problems. It is therefore important to have adequately trained and experienced staff available, together with agreed protocols and guidelines. Nursing staff at King's College Hospital A&E department have expressed a need for training and guidelines for assessment and advice giving³ and we are now implementing a range of service developments.

CONCLUSION

This study has described aspects of the characteristics of telephone calls for advice made to the A&E department at King's College Hospital. It confirms in an inner city setting the findings from previous studies regarding the existing demand for telephone advice⁷⁻⁹. It indicates that the majority of calls are of a primary care nature and do not require attendance at an A&E department. The quality of the advice offered, in terms of caller satisfaction, was examined by following callers up with telephone interviews. These results will be reported elsewhere.

The difficulties of implementing a formal system of record keeping have been revealed in the resistance expressed by some staff to introducing records of telephone calls. Staff expressed concern about being held accountable for advice given³. This is not unexpected, and training and support for staff are required.

The data from this study and other exploratory work have led to the development of computer based decision support software for nurse provided telephone consultation. This software is now being piloted.

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