

Communication difficulties during 999 ambulance calls: observational study

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One of the key roles of ambulance call receivers is to obtain accurate information concerning the location of the patient and their complaint. The automatic tracing of calls to their source can accurately determine the location of most patients. Obtaining information on the patient's condition, however, depends on effective communication between the call maker and the call receiver. Ambulance services in the United Kingdom now use priority dispatch systems to categorise calls according to the level of urgency for medical treatment and to provide first aid advice (for example, cardiopulmonary resuscitation).^{1,2} The safety and effectiveness of priority dispatch has been assessed³; however, whether call receivers are able to procure accurate and reliable information has not been established. This study aimed to determine the nature and extent of communication problems encountered during 999 calls.

Participants, methods, and results

The study population comprised 999 calls received by an urban (West Midlands Ambulance Service) and a rural (Derbyshire Ambulance Service) ambulance service. A stratified systematic sample of the calls received over one week (early December 1998) was selected (n = 1830). During this time, the West Midlands Ambulance Service received approximately 830 calls per day and the Derbyshire Ambulance Service received approximately 240 calls per day. An assessor listened to

tape recorded calls to determine the caller's identity (for example, husband), location in relation to the patient, type of telephone, and communication difficulties. Cases were excluded if recording quality was very poor.

The method was piloted.⁴ A conversation was noted as having communication difficulties if the call receiver had to repeat the question, the caller gave an inappropriate response more than once, or misunderstanding occurred between caller and call receiver.

We used univariate analysis to assess the characteristics of callers and compare the two ambulance services, and stepwise discriminant analysis to establish the factors associated with communication problems.

Of 1830 calls, 482 (26.3%) were associated with a communication problem that may delay ambulance dispatch or prevent delivery of first aid advice (table). Fewer problems were observed in Derbyshire than in the West Midlands.

The most common reason for communication problems occurring was the emotional state of the caller (161/482, 33.4%). Almost 10% (45/482) of problems were related to the ambulance service call receiver missing information or failing to be understood by the caller. Communication problems were associated more with calls made from payphones or mobile phones (110/221, 49.8%) than with those made from land lines (372/1609, 23.1%) ($\chi^2 = 71.2$, $df = 1$; $P < 0.001$). The type of telephone (land line, payphone, mobile phone)

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Communication difficulties associated with 999 calls to ambulance services. Values are numbers (percentages)

Problem associated with call	Calls to ambulance service			Significance (comparison between sites)
	Derbyshire (n=600)	West Midlands (n=1230)	Total (n=1830)	
Caller:				
Abusive	0	2 (0.2)	2 (0.1)	
Breathless or ill, causing difficulty with explanations	6 (1.0)	24 (2.0)	30 (1.6)	
Slow, vague, or deaf	5 (0.8)	21 (1.7)	26 (1.4)	
Child	1 (0.2)	4 (0.3)	5 (0.3)	
Emotional, excitable, upset, or speaking too quickly	58 (9.7)	103 (8.4)	161 (8.8)	
Not understanding questions asked by call receiver	0	4 (0.3)	4 (0.2)	
Not wanting to answer, or giving misleading information	0	5 (0.4)	5 (0.3)	
Strong accent or dialect	4 (0.7)	18 (1.5)	22 (1.2)	
Unclear or slurred speech, difficult to understand	11 (1.8)	17 (1.4)	28 (1.5)	
Use of non-English language or poor command of English	2 (0.3)	9 (0.7)	11 (0.6)	
Call receiver:				
Speaking too fast or using phrases not understood by caller	2 (0.3)	8 (0.7)	10 (0.5)	
Information from caller not absorbed	10 (1.7)	25 (2.0)	35 (1.9)	
Difficulties with address or location*	15 (2.5)	74 (6.0)	89 (4.9)	
Technical problems	13 (2.2)	25 (2.0)	38 (2.1)	
Other	5 (0.8)	11 (0.9)	16 (0.9)	
Number of communication problems	132 (22)	350 (28.5)	482 (26.3)	$\chi^2=8.66$, $df=1$; $P=0.003$
Nature of call				
Calls from patients, relatives, and friends	292 (48.7)	669 (54.4)	961 (52.5)	$\chi^2=5.3$, $df=1$; $P=0.012$
Calls from health workers, carers, and police	76 (12.7)	144 (11.7)	220 (12.0)	$\chi^2=0.35$, $df=1$; $P=0.3$
Calls from police and fire personnel	26 (4.3)	83 (6.8)	109 (6.0)	$\chi^2=4.2$, $df=1$; $P=0.024$
Caller in close proximity to patient†	158 (26.3)	373 (30.3)	531 (29.0)	$\chi^2=14.26$, $df=1$; $P<0.001$

*Caller did not know or could not spell the street name, or could only provide local landmarks or road number.

†Caller and patient are within hearing distance of each other.

and communication problem were similar in Derbyshire and the West Midlands. Communication problems were less likely if the call was made by a health professional (for example, general practitioner, carer, nurse) rather than by someone else (21/220, 9.5% *v* 461/1610, 28.6%; $\chi^2 = 26.4$; $P < 0.001$).

Comment

More than a quarter of emergency ambulance calls in this study had communication problems. Calls from mobile phones and payphones generated a higher rate of communication problems than those from land lines. Mobile phones, which are used increasingly,⁵ may help to reduce the time taken to notify the emergency services but the advantages of this must be weighed against the high rate of communication problems.

The occurrence of communication problems related to the emotional state of the caller highlights the need to train call receivers in dealing with people in emotional states. Use of medical/technical terms, some of which can cause considerable confusion (for example, "unconscious"), as well as talking too quickly and without clarity, have been identified as areas in which training of call receivers is needed.

Use of a standard land line, appropriate training of public service personnel, such as police and fire services, and further public education about the infor-

mation required when making 999 calls may reduce the extent of the communication problem.

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Bad press for doctors: 21 year survey of three national newspapers

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Many doctors believe that the media are portraying an increasingly negative image of doctors.^{1 2} Is this true? An Australian study found that negative stories were counterbalanced by positive ones,³ yet the newspaper coverage of the General Medical Council investigation into the Bristol paediatric cardiac surgeons was considered to be "emotive and largely hostile."⁴ We tested the hypotheses that newspapers have published more negative than positive stories about doctors, and that the ratio of negative to positive stories has increased.

Participants, methods, and results

We studied the *Daily Telegraph*, *Guardian*, and *Daily Mail* so that we could include both broadsheet and tabloid newspapers, and newspapers with different political views. We studied all articles published in November, from 1980 to 2000, choosing November to exclude both holidays and winter bed crises, while parliament was sitting.

We examined either microfilmed editions of the newspapers or electronic databases (when available). We searched for the text words doctor*, medic*, surgeon*, and Dr (having rejected words that did not appear in articles in a pilot study). We counted and coded relevant articles as positive, negative, or neutral towards doctors. We also counted the number of lines in each article, adjusting for the difference between electronic and

microfilmed articles. Each newspaper was assessed by a different author of the study. Where coding was not clear cut the article was reviewed by two other authors and a consensus reached. The blindly rated intercoder reliability for 1999 was 72% for total agreement and 100% for agreement by two out of three raters. To minimise year by year variance we calculated three year rolling means (figure), but all statistical analyses used the original data, which were not normally distributed.

The numbers of neutral, negative, and positive articles increased significantly over time (Pearson's $r = 0.49$, 0.52 , and 0.44 , respectively; $P < 0.001$). The median ratio of negative to positive articles was 2.33 (interquartile range 1.50-3.75) for the whole period, with no change with time ($r = 0.01$, $P = 0.96$). The median ratio of negative to positive lines was 2.98 (1.44-6.89) for the whole period, with no significant change with time ($r = -0.04$, $P = 0.74$). There was a trend over time for a smaller median ratio of negative to positive articles in the *Daily Mail* (1.75); ratios in the other papers were similar (*Telegraph* 2.7, *Guardian* 3.0) (Kruskall Wallis $\chi^2 = 5.07$, $df = 2$, $P = 0.08$), but there was no significant difference in the ratio of negative to positive lines ($P = 0.36$) in all three newspapers. The peaks in negative reports in 1986-9 and 1996-2000 were related to several incidents being reported at the same time (for example, practising doctors with HIV infections, and allegations