NURSES AND PARAMEDICS IN PARTNERSHIP: PERCEPTIONS OF A NEW

RESPONSE TO LOW-PRIORITY AMBULANCE CALLS.

Key words:

partnership,

interprofessional,

low-priority ambulance calls,

qualitative study.

ABSTRACT

SUMMARY

Aims: To explore patients' and staffs' perceptions of a pilot service which dispatched a nurse and paramedic to low-priority ambulance calls.

Methods. Patients' opinions of both pilot and standard service groups were obtained through qualitative questionnaire data and individual interviews. Staffs' perceptions were explored via two focus groups.

~~Study participants.~~ Questionnaires were sent to a convenience sample of 128 patients attended by the pilot service and 128 patients receiving the standard service. Initially 19 questionnaire participants agreed to be interviewed.

Focus group participants (n=11) included nurses and paramedics involved in the pilot service.

Results: Sixty-four questionnaires were returned and 11 interviews were conducted. Patients receiving the pilot service were enthusiastic about opportunities for care to be provided in their home.

Involvement in the pilot service was a positive experience for staff. They felt confident in managing calls effectively because of their combined knowledge and skills, and believed that the quality of patient care had been improved. They also experienced increased job satisfaction and skills development.

Conclusion: Both patients and staff expressed positive views about the pilot service. Patients appreciated being treated at home and staff believed that working together provided more appropriate care for patients and enhanced interprofessional development.

BACKGROUND AND LITERATURE

Demand for emergency ambulance services both nationally and internationally has increased in recent years (Victor et al 1999; Department of Health 2001; National Audit Office 2004). Currently in the UK, ambulance service demand is rising 6-7% annually (approximately an extra 250,000 calls a year) (Department of Health 2005). However, research has shown that a significant proportion of calls do not warrant an emergency response (Gardner 1990; Snooks et al 2002). The UK Department of Health has reported that only 10% of patients phoning 999 have a life-threatening condition and considers that 50% of patients transported to hospital could be cared for on-scene (Department of Health 2005).

Traditionally, the emergency ambulance service has focused on resuscitation, trauma and acute care but, in-line with policy initiatives (Department of Health 2001, ~~2004, a?~~ 2004a, 2005), interventions to provide more appropriate responses to low-priority calls are being investigated. These include; prioritising 999 calls; giving telephone advice; using alternative vehicles; consideration of on-scene alternatives (Snooks et al 2002), and implementation of new roles within

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healthcare professions such as the Emergency Care Practitioner (ECP) (Cooke 2006, Mason et al 2007). Overall, little data ~~are~~ is available on the potential cost-effectiveness of providing alternative responses to low-priority ambulance calls or on the perceptions of patients and staff on quality of care when alternative services are implemented.

It is against this backdrop that Bedfordshire and Hertfordshire Ambulance and Paramedic Service (now part of the East of England Ambulance Service NHS Trust) and Bedfordshire Heartlands Primary Care Trust, commissioned a research study to evaluate a pilot service whereby a nurse and paramedic were dispatched together in a fully equipped response car, to attend low-priority ambulance calls in a defined geographical area.

The aim of this intervention, involving interprofessional working between nurses and paramedics, was to treat patients at home where appropriate thus improving outcomes for patients through reducing the need for their transfer ~~of patients~~ to ~~Accident and~~ Emergency Departments (~~A&E~~EDs). Managers anticipated that the increased costs associated with inclusion of a nurse in the ambulance team would be off-set by savings made by reducing the number of patients conveyed to the ED~~A&E~~ and subsequent reduction in hospital admissions.

It was believed that the acute care skills ~~and knowledge~~ of paramedics ~~in dealing with acute situations~~ combined with the community care skills of nursing staff~~those of nurses in maintaining people in their own homes~~ would enable

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more patients, ~~who called an ambulance for non-life threatening conditions~~with non-urgent conditions, to be fully assessed and treated on-scene. In preparation for their role within the ambulance service, nurses received training in advanced life support and wound suturing/gluing.

Traditionally, UK nurses have not had a role within the ambulance service, whereas other countries, such as Australia, US, Norway and Sweden, deploy nurses within the pre-hospital setting (Melby and Ryan 2005, Suserud and Haljamäe 1997, 1999), and research has shown that they can make a valuable contribution to patient care (Melby and Ryan 2005).

The collaborative approach demonstrated in this pilot project is in line with UK government policy (Department of Health 2000a, 2000b ~~ab,~~ 2004ba) which reflects an international policy-drive to promote interprofessional working in an attempt to meet increased healthcare demands and maximise patient outcomes (McPherson et al 2001, Mickan and Rodger 2005).

Aims

The aims of the study were twofold;

- to explore the experiences of staff and patients

- to investigate the cost-effectiveness of the pilot service.

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This paper focuses on the experiences of staff and patients. The cost effectiveness evaluation health economic data are is reported elsewhere (Machen et al 2005).

METHODS

Appropriate calls for the pilot service were identified through the Computer Aided Dispatch (CAD) system, or by referral from the standard service emergency ambulance crews if they assessed that the pilot service could provide a more appropriate response.

Both quantitative and qualitative methods were used to evaluate this innovation. The ambulance trust sent out 256 questionnaires to a convenience sample of patients who were allocated a low-priority ambulance response; 128 to patients attended by the pilot service and 128 to patients in a different geographical area, who received the standard service. The questionnaires included two open-ended questions regarding patients' views of the service.

Completed questionnaires were returned directly to the research team and indicated whether participants were willing to be interviewed. Semi-structured interviews explored participants' experiences and perceptions of the service received.

Two focus groups were conducted with staff; one at the start of the pilot project and one on completion. These gathered in-depth information about the service intervention. Participants included five nurses and six paramedics involved in the pilot service.

(See Table 1 for areas covered in the interview and focus group Topic Guides).

Ethics and Research Management and Governance approval were gained and written consent of participants obtained.

<u>Data Analysis</u>

Audio-taped interviews were transcribed and anonymised. Analysis was undertaken using an interpretive approach (Denzin and Lincoln 1998). Qualitative data from the questionnaires were included in the analysis. Computer software (QSR N6®) was utilised to assist in data management.

<center>RESULTS</center>

The response rate to the questionnaires was low:

- Pilot group: 27/128 questionnaires returned.

- Standard service group: 37/128 questionnaires returned.

The overall response rate was 25% despite an attempt to increase this by moving from an 'opt-in' approach, where patients were sent information about the study and invited to participate by returning a form, to an 'opt-out' approach, where

patients were sent the questionnaire directly. This amendment was approved by the Local Research Ethics Committee.

Nineteen people indicated on the completed questionnaires that they were willing to be interviewed but eight later withdrew, mainly due to frailty or poor memory. Interviews were conducted with five participants in the pilot service and six in the standard service. The interviews lasted between 30-50 minutes and took place in patients' homes.

Of the 11 people interviewed (nine female, two male) nine were over 65 years (range 39-84 years). All those experiencing the pilot service (n=5) received treatment at home whilst all those receiving the standard service were transported to the A&EED (n=6),. and Five were subsequently admitted to hospital except and one,one person with diabetes who who had experienced an episode of hypoglycaemia, was treated in the ED in A&E anand discharged home. . ((Figure 1 presents reasons for the ambulance calls taken from the questionnaire data.)

QUALITATIVE FINDINGS AND DISCUSSION: PATIENTS' DATA

This section discusses the findings from selected themes from the qualitative data.

Three main themes emerged from the analysis of the patients' interview data and qualitative data from the questionnaires (summarised in Table 2).

Due to space limitations, the following section focuses on the first two sub-themes within Patients' Perceptions of their Care. (Full findings are reported elsewhere [Machen et al 2005].)

Views of emergency care

Patients in both the pilot and standard service groups spoke highly of the care they received:

> *Well I thought they were wonderful myself, they were so caring, both of them.* (S13)

> *Yes, they've been very, very kind, very good and helpful, very good, very nice people. They seem as though they'd do anything for you…. Yes they're very, very nice.* (P36)

(S = participant in the standard service group)
(P = participant in the pilot service group)

Responses within the questionnaire also included many positive comments about the pilot and standard service. Although Rresearch investigating patients'

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satisfaction with ambulance services is very limited, but high levels of satisfaction have been werefound in otherstudies by (Melby and Ryan (2005); and O'Cathain et al (1999). Audit data from the ambulance trust involved in the current study revealed that 97% of patients who returned a patient satisfaction questionnaire (43% response rate) were satisfied with the service when they called an emergency ambulance (Bedfordshire and Hertfordshire Ambulance and Paramedic Service, BHAPS 2005). In the current study patients appreciated having the undivided attention of staff and derived great comfort from their presence:

> *Well when you're alone, it's very difficult when you're ill and the moment they came in…it's a sense of another human being I suppose, asking you what was wrong and reassuring you.* (S26)

Remaining at home

All the participants treated by the pilot service were extremely pleased to remain at home. One person, a carer, was especially relieved because he was worried about what would have happened to his wife had he been taken to hospital. Other participants were relieved to avoid a possible long wait in A&E the ED and potential hospital admission:

> *Well I didn't really want to go because I thought well I'll be on a trolley for five hours or something …I mean I wouldn't have refused if they'd said you've got to go, but they were happy that I didn't go.* (P30)

Participants spoke about the nurse having a different perspective:

> '*Well they had another angle to things you know*'. (P11)

and different skills:

> *Eventually they got me out (of bed), but I must say that nurse was wonderful. I mean nothing against those boys (first ambulance crew attending!) because they did all they could but they hadn't got the persuasive way that she had.*
> (P 30)

Melby and Ryan (2005) also found that nurses' skills made a valuable contribution to patient assessment in the pre-hospital setting.

One participant expressed a concern that the problem might be more serious than originally thought:

> *Yes. I was glad I didn't have to go but you've always got that nervousness in the back of your mind that maybe you should*

> *have gone, that there might just be something wrong you*
>
> *know.* (P11)

This participant went on to explain that the nurse had left a contact number had she needed further help.

Only one person in the pilot service group (a questionnaire respondent) reported any problems regarding their care. This participant had fallen but initially 'felt all right'. However, six days later she was admitted to A&Ethe ED with a fractured femur. This respondent felt that the fracture might have been diagnosed by a more in-depth assessment by the nurse and paramedic, as she explains:

> *Attempts should have been made to see if I could move, as*
> *previously, without pain. If I had realised how painful the right*
> *leg was on movement, I would have agreed to go to the A&E*
> *department.* (P22)

This has implications for the education and training of staff in patient assessment, an issue that staff also identified in the focus groups.

Patients in the standard service group also spoke positively about attempts to try and maintain patients at home:

Oh yeah I'd like that, I'd really like that. It's not my favourite

place, going to hospital. (S30)

QUALITATIVE FINDINGS AND DISCUSSION: STAFF DATA

Three main themes emerged from the staff focus groups (n=11) (summarised in Table 3).

The present discussion will focus on the three categories of Moving Forward, Perceptions of Working Together and Education and Training Needs.

Moving forward

Staff discussed the types of calls attended during the pilot intervention. Treatments given in the home were mostly wound dressings, suturing and catheter care.

Overall, staff felt confident in managing the calls. Their combined skills and knowledge enabled them to address the range of health needs of patients leading to very positive views of the pilot service, not only in terms of maintaining people at home and patient satisfaction, but also regarding high levels of job satisfaction. They spoke of the experience being 'enjoyable and rewarding' and 'different and satisfying' as illustrated here:

> *… job satisfaction isn't it? That you've been able to resolve*
>
> *that situation.* (Nurse, Focus Group 1)

And:

> *…that patient has got the best really from something you*
>
> *provided rather than knowing that they're going to have a*
>
> *long and difficult wait in A&E.* (Paramedic, Focus Group 1)

Initially some nurses had concerns about what they might encounter in an emergency situation:

> *So it was with trepidation that I first came to do it and I've*
>
> *loved it so much.* (Nurse, Focus Group 2)

This increase in job satisfaction associated with interprofessional working is found elsewhere [(Refferty et al 2001, Dieleman et al 2004, Mickan and Rodger 2005).

Perceptions of working together

Effective teamwork between the paramedics and nurses was regarded as facilitating the project. Historically, the ambulance service has been 'very much on the periphery of the health service' (Paramedic, Focus Group 1). The traditional ambulance crew response was to take people to hospital rather than

treat or refer patients to other community services. This paramedic used the following metaphor to explain this lack of interagency working:

> *I think it's like the road-works analogy isn't it? If somebody comes along and digs a hole, the gas man does something, closes the hole, the electricity person comes along and digs the hole up, does his bit, closes the hole, you know what I mean? And that's basically how we work.*
>
> (Paramedic, Focus Group 1)

Paramedics and nurses believed that the interprofessional working had improved quality of care and prevented unnecessary transfer to hospital. Teamwork has been shown to have a beneficial effect on patient outcome in a range of settings (Borrill et al 2000, Firth-Cozens 2001, McPherson et al 2001).

When discussing how team working was managed one paramedic used the term a 'gentleman's agreement':

> *I think once you get the call-out… depending on the situation, the person with the best skills for that situation takes the lead… it's a gentleman's agreement isn't it?*
>
> (Paramedic, Focus Group 1)

Differences in opinion were resolved through discussion and did not appear to have caused any major difficulties, although one district nurse spoke of 'sticking to her guns'. The research did not involve observation of decision-making and

negotiations between professionals, thus identification of these processes are beyond the scope of this study.

Staff in this project found that one of the benefits of interprofessional working was learning from each other:

> *… because I think that we've learned a lot from them but also they've learnt … So it's sort of been a two way thing I think, we learn from each other.*
> (Nurse, Focus Group 2)

Gaining new skills and knowledge was exciting and motivating for staff and paramedics indicated that this would influence their future practice.

> *Now I realise what other agencies are available. All I need do now is make contact with the district nurses… I certainly intend to, without a doubt.* (Paramedic, Focus Group 2)

Staff demonstrated enormous respect for each other and held high opinions of the knowledge and skills of the other profession:

> *I think certainly as paramedics… we realised what and how strongly the district nurses are in the community and what they can bring to the patients that we go to as well.*
> (Paramedic, Focus Group 2)

And:

> *I have to say I felt really confident working with the paramedics…, and I've got a great respect for the work they do.*   (Nurse, Focus Group 2)

The feelings of staff were summed up by one of the paramedics:

> *…the value of working with other health professionals has just been immense, it really has. You just cannot do without it; it is amazing.*
> (Paramedic, Focus Group 2)

Skills, education and training

The two professions recognised a range of education and training needs required to deal with low-priority ambulance calls. Nurses focused on skills such as wound care, gluing and suturing, advanced life-support as well as assessment of acute problems. Paramedics identified in-depth assessment, communication and decision-making skills. Both groups wanted extended prescribing skills. One paramedic highlighted the paradox of being able to deal with major trauma but not relatively straightforward tasks:

> *Basic skills need to be looked at as paramedics can open up a chest but not stitch a wound. Need core skills training for all health professionals.*   (Paramedic, Focus Group 2)

Concern that the curriculum for paramedics does not fully reflect the skills required in practice has been reported elsewhere (Cooper 2005, Kilner 2004).

Participants commented that training on its own is insufficient and emphasised the importance of experience.

CONCLUSIONS

Overall, the study found that patients in both pilot and standard service groups had high levels of satisfaction with the ambulance service. Patients receiving the pilot service preferred being treated at home, particularly avoiding long waits in the ~~A&E department~~ ED and possible hospital admission. ~~People over 65 attending A&E~~EDs ~~are three times more likely to be admitted than younger patients (Downing and Wilson 2005). Therefore, prevention of unnecessary conveyance of older people to A&E~~EDs ~~departments is particularly important in reducing avoidable hospital admission.~~ Potential cost savings for the NHS i.e. through treating fewer patients in ~~A&E departments~~EDs and subsequent reduction in hospitalisation costs is an important consideration~~(Mason et al 2006)~~.

Staff found involvement in the pilot service challenging and rewarding. Both paramedics and nurses learned new skills which they felt improved quality of care. Teamwork was evaluated highly by staff who believed that it had a positive impact on patient care.

However, caution is required in interpreting some of the findings because calls were not randomised to the pilot or standard service groups and the small patient sample, due to a low response rate to the questionnaire, limiting ~~ed~~ the number of interviews. Also, the time-lag between the emergency call and undertaking the patients' interviews may have affected the recall of events for some participants. In addition, pilot service group patients were not followed-up to assess whether their treatment was appropriate. Therefore, it is not ~~we do not~~ known whether/how many patients maintained at home were subsequently admitted to hospital. The questionnaire data revealed that one patient not conveyed to hospital had sustained a fractured femur.

Many of the issues raised by the staff in the focus groups are being addressed by UK government policies; for example, policy initiatives to blur the boundaries between professional roles, and the development of ECPs. These are enabling paramedics and nurses to extend their roles to meet patients' needs ~~(Cooper et al 2004, Cooke 2006, Halter et al 2006, Mason et al 2007)~~.

Overall, the pilot service generated positive experiences for all involved and demonstrated high levels of patient and staff satisfaction. Staff believed that

Comment [A1]: limiting

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interprofessional working, by enabling their professional development and extending their skills, improved both quality of care and patient outcomes.

Recommendations for practice and research are summarised in Table 4.

ACKNOWLEDGEMENT

CONFLICT OF INTEREST

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Table 1 Areas explored in the interview and focus groups Topic Guides

Topic Guide	Areas Explored
Individual Patient Interview	Reasons for calling an ambulance
	Experiences when emergency team arrived and of treatment
	Perceptions of care received
	Follow up/advice received
Focus Group 1 with staff	Opinions about the introduction of the service
	Expectations about the types of calls that the nurse and paramedic team might attend
	Possible benefits/disadvantages of the service
	Skills and knowledge required
	Any concerns
Focus Group 2 with staff	Calls attended: types/challenges
	Facilitators/inhibitors of the new service
	Experiences of teamworking
	Benefits/disadvantages of the new service
	Skills and knowledge utilised/development needs

Table 2 Reasons for Calling the Ambulance Could this be in a graph rather than a table having the pilot and standard groups shaded differently in the graph?

Reason for Call	Pilot Service Group (n= 27)	Standard Service Group (n=37)
Abdominal Pain	1	3 [1]
Chest Pain	0	1
Fall	15 [3]	13 [1]
Fainting/dizzy/collapse	3 [1]	7 [2]
Feeling unwell/infection	3	3
Headache	0	1
Sickle cell crisis	1	0
Shortness of breath	0	4 [2]
Wound/haemorrhage	4 [1]	5
TOTAL	27	37
	Numbers in square brackets indicate people interviewed.	Numbers in square brackets indicate people interviewed.

Table 23 Summary of Findings: patient interviews and qualitative questionnaire data

Theme	Categories
The Episode of Care Narrative account of participants' experiences.	• General Situation • The Call • Hospital Experiences
Participants' Perceptions of their Care Participants' views of the care they received when they called an ambulance.	• Views of emergency care • Remaining at home • Patient acquiescence/acceptance • Suggestions for change
• **Previous Experiences of Emergency and Primary Care Services** Participants' contact with these services prior to the current episode of care.	• GP services • Ambulance and A&E • Other Primary Care Services

Table 34 Summary of Findings: Staff Focus Groups

Theme	Categories
Service Provision Staffs' view of the standard ambulance service and also of the pilot service.	• Current Services: issues and challenges • Moving Forward (views of the pilot project)
Working Together Staffs' perceptions of teamwork as well as examples of interprofessional working.	• Perceptions of Working Together • Teamwork in Action
Skills, Education and Training Staff highlighted that there is a crossover of skills between nurses and paramedics and their skills complemented each other.	• Skills for Low-Priority Ambulance Calls • Education and Training Needs

Table ~~45~~ Recommendations for Practice and Research

| Practice	• Extension and development of similar service initiatives to enable patients to be maintained at home, where appropriate. • Education and skills development to address the training needs identified by staff. • Development of further opportunities for interprofessional working including links into other initiatives such as the Single Assessment Process.
Research	• Further qualitative research to understand service-users' perspectives of new service developments. • Studies to understand the decision-making processes and risk-taking behaviour of out-of-hospital emergency care staff. • Further research to explore longer term follow-up of patients treated by similar schemes or ECPs to establish that patients receive appropriate care.
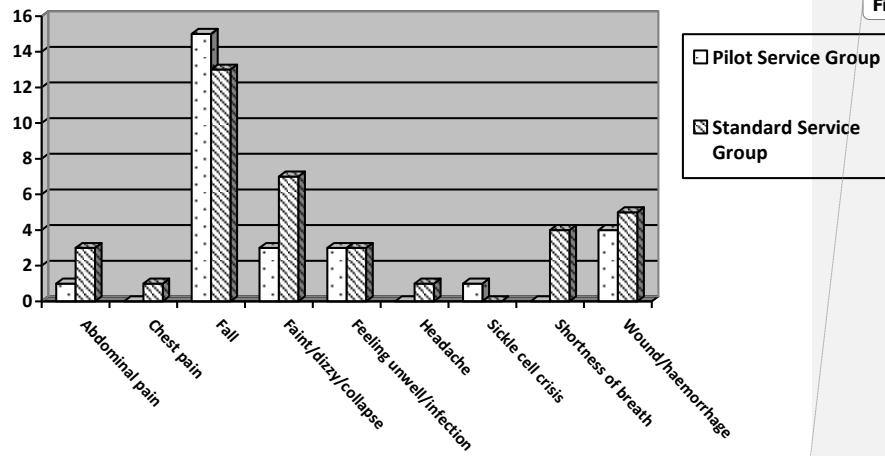
FigureChart 1 Reasons for Calling the Ambulance