A national evaluation of the clinical and cost effectiveness of Emergency Care Practitioners

Phase one

Final Report

Suzanne Mason, Pat Coleman, Julie Ratcliffe, Janette Turner, Jon Nicholl

Medical Care Research Unit
School of Health and Related Research
University of Sheffield

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EXECUTIVE SUMMARY

A team of researchers at the Medical Care Research Unit (MCRU) is carrying out a national evaluation of Emergency Care Practitioners (ECP). The research planned consists of two discrete phases. This report contains the findings of the preliminary phase one study which is substantially complete.

The ECP pilot sites are one of several initiatives in the UK aimed at meeting increasing demands for emergency services. The schemes are expected to provide new opportunities for career development of health care professionals, and provide a flexible and appropriate level of response to patient need within a ‘problem-solving’ paradigm of healthcare.

METHODS

Phase one of the evaluation consists of three component studies:

1. A postal survey was sent to the 17 sites in England that received funding in the first wave.
2. Telephone interviews with twelve key personnel in three rural and three urban sites.
3. An economic analysis.

RESULTS

Responses to the postal questionnaire were received from fourteen of the seventeen sites included in the first wave. Most ECPs come from an ambulance service background, though the role is open to suitable candidates from nursing and, other healthcare backgrounds and direct entry. Training is fairly comparable across the sites, with most sites aiming to develop a core set of competencies and skills. As of July 2004, only seven sites were operational with the remainder in various stages of development. All actual or anticipated operational settings involve working in the ambulance service, the accident and emergency department or minor injury unit and primary care providing an Out of Hours or In Hours unscheduled home visits service. There were variations in the hours of work that may be explained by local need.

Telephone interviews were completed with 12 ‘key’ personnel in three urban sites: London, Mersey and Greater Manchester, and three rural sites, Hampshire, East Anglia and the West
Country. The roles represented were Project Manager, Chair of Ambulance Trust, Medical Director, Clinical Lead, A&E Consultant, PCT lead for Out of Hours. The interviews complemented the results from the descriptive study and contributed understanding to the variation in how schemes were developing. All the interviewees were positive that their scheme was achieving what it was expected achieve, and more, at this stage in a new service. Changes that had been made to the schemes were explained mostly by responses to actual (rather than expected) clinical and service need. The reasons for the changes were strategic, operational and educational. Where the scheme was ‘live’, the ECPs were based in different settings in the community, and integrating with other services. Some barriers had been identified. Strategies were being developed or implemented to overcome these.

The costs of an ECP and the costs of and ECP contact have been presented according to the information provided. There are variations, but it would appear that an ECP contact ranges from £24 – 89 depending on the level of activity of the ECP.

CONCLUSIONS
Based on the results available to date, the schemes in the first wave sites are progressing with different emphases, though there are some indications they will converge such that an ECP standard will evolve. In the selected sites, interviewees were positive that the schemes had achieved what they expected at this stage in the developmental process. Variation can be understood mostly by the need to respond flexibly to local circumstances. Recurring themes emerging across the sites were appropriate levels of clinical governance and supervision, a generic element to education and training, defining standards of practice, transferability of skills, patient safety and workforce issues around recruitment and retention of staff. More robust quantitative and economic data are expected to be available for phase two of the evaluation and all these issues will be addressed in more detail in that research.
1.0 BACKGROUND AND LITERATURE REVIEW

A review of the existing literature on alternative models of emergency care has been undertaken as part of this study. In order to identify appropriate articles for review, a computerised search of the literature was undertaken using Medline (1980 to July 2004), CINAHL (1980 to July 2004), EMBASE (2002 to July 2004), Cochrane and hand searching the bibliographies of papers retrieved. Searches were limited to human subjects and English language. The search is kept updated by regular trawls of computerised databases. The search used the subject headings: hospital care alternative, pre-hospital care, emergency service, emergency medical services / or emergency service hospital. It also applied text words emergency medical / health service, emergency care, pre-hospital care, access, barrier, alternative hospital care. Given the paucity of articles in this area, a thorough citations search using the references already available to the research team has also been undertaken.

The rising demand for emergency services

Each year the NHS is faced by rising demand for emergency and immediate care services. Despite the introduction of Minor Injury Units (MIUs), Walk-in Centres (WIC) and NHS Direct, attendances at Accident and Emergency departments (A&E) rise by around 2% per annum\(^1,2\) and calls to ambulance services rose by 7% in the year 2002-2003\(^3\). In addition, changes to the GP contract introduced in April 2004 and the introduction of the European Working Time Directive make it likely that doctors will be less available than in the past to provide 24-hour cover to emergency services. This means that alternatives to delivering care need to be found involving the development of new models incorporating health care professionals not traditionally associated with delivering this level of care.

‘Reforming Emergency Care’ emphasised the problems encountered by people in using the present emergency services\(^4\). It also indicated that new initiatives need to be developed to improve the initial care and assessment of patients so that needs are met in an optimal way. The government are committed to better patient choice, ease of access and delivering a high
quality service\textsuperscript{5}. More recently a stronger emphasis on quality and safety has been declared whilst also aiming to maintain efficiency and ease of access for patients. This will especially relate to the delivery of primary care services in which the NHS aims to develop new ways of meeting patient needs closer to home and work environments through PCTs commissioning care from a wider range of service providers\textsuperscript{6}. This will especially be the case for the provision of out-of-hours services. Recent changes to the GP contract mean that providing these services is no longer a mandatory part of the contract. From 1 April 2004 GP practices, with the agreement of their PCT, have been able to opt out of their 24-hour service responsibility. From 31 December 2004, GPs will be free to opt out, and PCTs will assume responsibility for ensuring the provision of out of hours emergency primary care services. PCTs are currently addressing the challenges of developing new services and ensuring effective integration with services developed in recent years in response to Department of Health policy\textsuperscript{6,4}. The future provision of integrated emergency primary care services will involve general practitioners, nurses, nurse prescribers, pharmacists, dentists, paramedical, social care, ambulance and mental health workers.

A further Audit Commission report\textsuperscript{7} questioned the need for a fully crewed ambulance to attend all 999 calls and has suggested that ambulance services should be allowed to decide who should be sent to each type of emergency and treat some patients at home without transfer to hospital. In 2002-2003, around 36\% of emergency 999 calls resulted in an emergency response, but no subsequent patient journey\textsuperscript{3}. It is widely accepted now that some 999 calls do not require a ‘lights and sirens’ response, and government policy has tended to encourage the development of alternative responses to meet this need more appropriately. A recent study of all Ambulance Services in England undertaken in Sheffield\textsuperscript{8} has found that the majority of ambulance services reported that they operated fast response vehicles (97\%) and first responder schemes (94\%). Twenty-four services reported new initiatives: eleven gave details of emergency care practitioner courses (31\%); four detailed the training/education of community practitioners (11\%); and three gave details of paramedic practitioner schemes (9\%).
Finally, in order to meet the demands placed on the NHS and enhance career progression within the NHS, new career structures are being developed that facilitates development for health care professionals. It is clear that these developments will provide opportunities for individuals to use their existing skills and expertise whilst also learning new ones in order to provide a safe and effective service for patients. Given the pressures and changes highlighted above, it is also clear that the development of new roles will be essential in order to fill the gaps in service and tackle the ever rising demands for service that are appearing.

Evidence to support extended roles for health care professionals

The NHS Plan\(^5\) outlines greater opportunities in the future for NHS staff to extend their roles. A number of studies\(^9\),\(^10\),\(^11\), explored the possibility of paramedics identifying patients who did not require A&E care. All three studies concluded that paramedics couldn't safely or accurately determine which patients required ambulance transport or A&E care. These findings were reflected in the report on the Future of Ambulance Services in the United Kingdom\(^12\), which stated that ambulance services needed to develop a wider range of types of responses and clinical roles for staff in order to provide a variety of appropriate care pathways for patients. The report recommended implementing practitioners in emergency care, who cross the boundary between paramedics and nurses. These individuals would have to be either targeted to incidents needing their skills or rotate into hospital environments where their skills could be refreshed and maintained.

In 2000 the Joint Royal Colleges Ambulance Liaison Committee\(^13\) reported on the future role of paramedics and emphasised the need to train and educate a higher level of ‘Practitioner in Emergency Care’ with skills that could be utilised in the community. Previous studies have shown that paramedic skills can be enhanced to assess and treat certain conditions in the community such as wounds\(^14\), cervical spine injury\(^15\), and stroke\(^16\). A study in the UK has evaluated the use of ‘treat and refer’ protocols for minor conditions by ambulance staff\(^17\). This allowed them to leave appropriate patients on scene with referral or self-care advice. The introduction of the new scheme was found to be acceptable to patients with no safety concerns identified. The study has recommended further work to evaluate the use of such
schemes. In addition, a scheme in Sheffield has shown that it is possible to train paramedics to emergency nurse practitioner level to deliver a targeted service\textsuperscript{18}. The scheme explores a new way of providing clinical assessment of older patients in their homes or in care homes within Sheffield. It sets out to provide a very patient-centred model of care by providing community-based clinical assessment for patients presenting to the emergency services with acute minor conditions. It is currently the subject of a randomised controlled trial.

In contrast to this, in Norfolk, the Appropriate Care at Point of Need Scheme (ACAPON) was launched in April 2002\textsuperscript{19}. The scheme is based on a multidisciplinary team, consisting of a GP, community paramedic, practice nurse, and health care worker. The scheme aims to speed up patient treatment and reduce inappropriate A&E attendances.

However, recent literature reviews\textsuperscript{20,21} report the evidence to support the effectiveness of out of hospital emergency care to be poor. It is unclear what the impact on demand for emergency care of alternative models would be. In addition, the safety and cost effectiveness has not been evaluated. Far more work is needed to define the roles, their safety, efficacy and cost effectiveness as well as their acceptability to patients. It is anticipated that phase 2 of this evaluation will contribute to the current evidence around these issues.

**Background to the development of the emergency care practitioner role**

In addition the document 'The Future of Ambulance Services in the United Kingdom'\textsuperscript{13} concluded that practitioners in emergency care “could bring A&E doctors, nurses and paramedics together in providing emergency care in a way which current organisational models could not. Breaking down professional boundaries and raising the clinical skills of paramedics could lead to new ways of working, closer partnerships and better outcomes for patients”. The report of the Joint Royal Colleges Ambulance Liaison Committee (JCALC) recommended the development of practitioners in emergency care (PEC)\textsuperscript{13}.

The Changing Workforce Programme (CWP), part of the NHS Modernisation Agency and the Department of Health set up initial Emergency Care pilot sites and subsequent ECP trials. To maintain consistency with other professional groups, new roles, and to reflect that this role
was not just open to paramedics, it was decided to change the title of the role from practitioner in emergency care (PEC) to emergency care practitioner (ECP).

In April 2003 funding was secured from the Department of Health to develop the ECP role on a larger scale across the following 17 health communities in two waves.

<table>
<thead>
<tr>
<th>Wave One</th>
<th>Wave Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Manchester</td>
<td>Hampshire</td>
</tr>
<tr>
<td>London</td>
<td>Bedfordshire and Hertfordshire</td>
</tr>
<tr>
<td>Essex</td>
<td>Kent, Surrey and Sussex</td>
</tr>
<tr>
<td>Norfolk, Suffolk and Cambridgeshire</td>
<td>Staffordshire</td>
</tr>
<tr>
<td>County Durham and Darlington</td>
<td>South Yorkshire</td>
</tr>
<tr>
<td>Devon and Cornwall</td>
<td>Mersey Region</td>
</tr>
<tr>
<td>Coventry, Warwickshire, Hereford and</td>
<td>Teeside, East and North Yorkshire</td>
</tr>
<tr>
<td>Worcester</td>
<td>Lincolnshire</td>
</tr>
<tr>
<td></td>
<td>East Midlands</td>
</tr>
<tr>
<td></td>
<td>Dorset</td>
</tr>
</tbody>
</table>

The CWP is supporting these sites by funding a project manager and an emergency care practice facilitator for each trial site. The project manager is responsible for recruitment, ECP line management and operational issues. The practice facilitator is responsible for clinical placements, clinical supervision and audit. Funding is also being provided to meet the educational and backfill costs for the 15-week educational programme.

Each trial site is expected to test the role in three environments:

1. Acute setting (A&E department, Minor Injury Unit, etc)
2. Pre-hospital (Ambulance response)
3. Primary Care (GP home visits including Out of Hours, etc)

Although a flexible approach is taken to ensure that any previous work within the trial sites is capitalised upon, the remit of the trials is to determine the effect of this role across the whole of the emergency care pathway.

It is anticipated that the ECPs will be able to assess and treat minor illness and injuries in the community without necessarily transferring the patient to A&E. This is because they will be trained to take a patient history and make a physical examination. They will be skilled in the management of minor illness and minor injury including the ordering of further investigations such as x-rays. In cases where further investigation or treatment is required, the ECPs will have the relevant skills and pathways open to them to refer patients to other health and social
care professionals, where appropriate. They will also be able to administer and supply medication in line with Patient group directives (PGD).

The aim is to produce a role that is generic, with national standards such as a requirement for qualification through a standard route, undertaking agreed amounts of continuing professional development, and having a core set of competencies. In this way, some of the deficiencies that are perceived with the development of the emergency nurse practitioner role (lack of standardisation, insufficient evidence to support the efficacy of the role) should be avoided and the ECP role will have nationally recognised standards for practice.

The impact of the ECPs on emergency services generally is unknown yet. It will be important to evaluate whether they are able to influence A&E department or ambulance service performance through effects on waiting and response times, overall numbers of attendances and calls. In addition, the effect on patients in terms of their subsequent health outcomes and levels of satisfaction will require careful study. Finally to ensure sustainability of such a service, information about costs and cost consequences will be essential. It is anticipated that phase two of this evaluation will address some of these key issues, however, ongoing independent research is essential to inform its future direction.
2.0 ECP EVALUATION

AIMS

This evaluation aims to address the following:

- To describe the extent to which the Emergency Care Practitioner Role is contributing to safe and effective alternative emergency and urgent care provision in England
- To make recommendations for the future development and operational context of the role building on early experiences
- To describe the methodologies applied and tools used to evaluate the Emergency Care Practitioner role and its impact to inform future evaluations of such roles in terms of validating appropriate methodologies for such work.

OBJECTIVES

Phase one

- To scope the factors that would contribute to successful, safe and appropriate operational frameworks of such schemes using the experience and opinions of key stakeholders
- To describe the current development and operation of Emergency Care Practitioner schemes in England
- To undertake a review of the literature on the evidence for the effectiveness of alternative emergency care provision in the UK and similar healthcare settings. Also to review the literature on role development and the methodologies used to evaluate them.
- To provide an assessment of the likely costs and cost consequences of the different operational frameworks
• To provide a quantitative analysis of the data collected from the Emergency Care Practitioner Impact Measure forms.

• To obtain MREC and research governance approval for further in-depth work in a sample of project sites.

Phase two

• To undertake a case control study of up to three selected Emergency Care Practitioner schemes compared with previously existing emergency service models in order to evaluate
  o patient satisfaction and acceptability
  o subsequent health status and health and social care use
  o Appropriateness and safety of care provided

• To undertake an economic evaluation of the Emergency Care Practitioner schemes

• To describe the attitudes of other health care professionals to the Emergency Care Practitioner schemes

• To make recommendations for the future development of the role in the light of the findings from both phases of this study.

• To develop criteria that identify efficiency and effectiveness measures of the current ECP services and their impact on primary and secondary care provision.
2.1 METHODS

PHASE ONE

2.1.1 Descriptive Survey of the current sites

An e-mail survey of seventeen ECP projects was undertaken to collect preliminary information about their initial development. The questions about each scheme sought to obtain data under several main headings:

- Detail about the ECPs themselves
- Information about the ECP training
- List of competencies and outline of the scope of the role
- Information about the operational settings
- Local barriers to each scheme developing
- Evidence that local evaluation of the role is taking place
- Data on workload
- Economic information about each scheme

The survey instrument (Appendix A) was e-mailed to each project lead with a deadline date for return. Two reminder emails were sent in addition to SM attending an ECP project lead meeting to remind sites to return their information for incorporation into this report.

Data were coded and entered into an SPSS database (version 10.0). The data were analysed with respect to each main heading.

2.1.2 Telephone interviews to provide a theoretical framework of the factors that would contribute to successful Emergency Care Practitioner schemes.

With direction from Chris Wintle (CW) and Belle Connell (BC) of the NHS Modernisation Agency, Pat Coleman (PC) (MCRU team) contacted twelve key personnel in six selected first wave ECP sites in England (three rural and three urban) to invite them to take part in a telephone interview about their initial experiences of the first wave ECP schemes. The urban sites are Greater Manchester, London, and Mersey. The rural sites are East Anglia,
Hampshire, and West Country. The roles represented in the personnel contacted were Chairperson, Project Manager, Medical Director of Ambulance Service, A&E Consultant, Clinical Training Manager, and PCT Out of Hours Lead. The interviews were confirmed and took place between 21st May and 18th June, 2004.

The interviews were guided by a semi-structured schedule (Appendix B). This was forwarded to the participants at the time preliminary contact was made. With permission, each interview was tape-recorded. The tapes were transcribed. Data were abstracted thematically and processed in accordance with framework principles using winMAX software for qualitative data.

2.1.3 Assessment of costs and cost consequences for the different frameworks

An assessment of the likely costs and cost consequences of adopting the different frameworks for service delivery was undertaken based on the information provided by Project Leads in the descriptive survey.

2.2 RESULTS

2.2.1 Description of the current operational sites

Results from 14 of the 17 sites are available for analysis (82.4%). The three sites that have not returned a questionnaire for inclusion in these results are County Durham & Darlington, Essex and Staffordshire. Seven sites (50%) declared themselves as being fully operational at the time of the survey. These are London, East Anglia, Westcountry, Mersey, North Hampshire, Bedfordshire & Hertfordshire, and Coventry & Warwickshire. The remaining sites are in various stages of development. Figure 1 shows the distribution of ECPs in relation to their training as of June 2004. Figure 2 illustrates where ECPs have been recruited, showing a predominance of ambulance service background.
Figure 1: Status of ECP by site
ECP Training

Each site runs a course which comprises a taught part involving theory-based learning and clinical placements aimed at skill development. Of those 14 sites responding, this course was running for between 12-27 weeks (mean 16.1 weeks, standard deviation (SD) =3.4). In addition, following each course there is a period of supervised practice. Data were available from 11 sites, and the supervised practice ranged from 8 – 24 weeks (mean 19 weeks, SD=5.9).

All but one of the responding sites are allied to a higher educational institution. Each course had some assessment of competency at the end, and 12 sites (85.7%) had plans in place for ongoing continuing professional development.
Competencies

Each site was asked about the scope of the role they are developing in relation to the core competencies each ECP will be or are trained to use. Of those sites sending us data, the proportion offering training in each core skill is listed in tables 1 and 2 below. Some sites offered additional non-core training (accounted for in the ‘other’ category of each table). These additional skills included major incident training, chronic disease management, radiology and adult advanced life support.

Of those sites responding, 10 (71.4%) are currently able to prescribe, all using patient group directives (PGDs). Of those who are not prescribing at present, two are developing PGDs and two are awaiting the impact of the scheme overall before deciding on future developments.

Table 1: Core Skills taught by each course

<table>
<thead>
<tr>
<th>Core Skill</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>total n=12</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular system assessment</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Respiratory system assessment</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Gastrointestinal system assessment</td>
<td>10 (83.3)</td>
</tr>
<tr>
<td>Neurological system assessment</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Urological system assessment</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Musculoskeletal system assessment</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Dermatological system assessment</td>
<td>10 (83.3)</td>
</tr>
<tr>
<td>ENT system assessment</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Ophthalmology system assessment</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Consultation / communication skills</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Assessment of minor illness</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Assessment of minor injury</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Assessment of the paediatric patient</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Assessment of the elderly patient</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>Assessment of the acutely disturbed patient</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>10 (83.3)</td>
</tr>
<tr>
<td>Legal and ethical issues</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Evidence based practice</td>
<td>12 (100)</td>
</tr>
<tr>
<td>Research and audit</td>
<td>10 (83.3)</td>
</tr>
<tr>
<td>Paramedic skills: scene safety</td>
<td>9 (75.0)</td>
</tr>
<tr>
<td>Paramedic skills: recognition of death</td>
<td>9 (75.0)</td>
</tr>
<tr>
<td>Paramedic skills: advanced life support</td>
<td>9 (75.0)</td>
</tr>
<tr>
<td>Paramedic skills: driving course D1 level</td>
<td>8 (66.7)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (41.7)</td>
</tr>
</tbody>
</table>
Table 2: Optional Skills available on courses

<table>
<thead>
<tr>
<th>Optional Skill</th>
<th>n (%)</th>
<th>total n=14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-hospital trauma life support</td>
<td>12 (85.7)</td>
<td></td>
</tr>
<tr>
<td>Driving course to D2 level</td>
<td>10 (71.4)</td>
<td></td>
</tr>
<tr>
<td>Gynaecological system assessment</td>
<td>8 (57.1)</td>
<td></td>
</tr>
<tr>
<td>Paediatric ALS</td>
<td>12 (85.7)</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>5 (35.7)</td>
<td></td>
</tr>
</tbody>
</table>

Operational settings

As already stated, by July 2004, 7/14 sites are operational. However, most sites have an operational framework mapped out for when their scheme ‘goes live’. Each site will cover different sized populations ranging from 75,000 to 1,500,000. This means a range of 1 ECP per 5,000 population to one ECP per 77,000 population. There is a range of operational settings, but most sites involve the recommended spread of the ambulance service, A&E, minor injury units, primary care and walk-in centres. Ten of the 14 sites are currently or will be rotational through the different settings covered within each region. ECPs will be identified by a different uniform in two sites, a badge in six sites and a uniform and a badge in five sites.

Most sites (n=10/11) are acting as single responders, with 3 other sites not knowing what will happen yet. Most will be able to convey patients in their own vehicles (n=10/12), with two sites not knowing yet.

Sources of clinical support vary throughout the country, with some sites using consultants, GPs or staff in A&E departments, and others using ‘clinical mentors’, although it is unclear what expertise these individuals have. Two sites do not have any clinical support identified as yet. In most sites, the ECPs are or will be employed by the ambulance service (n=10), with ECPs in two further sites being employed by PCTs and two sites unsure by whom their ECPs will be employed.

The hours of operation vary across each site, with five sites unable to provide information. Only 2/9 sites are planning to provide a 24-hour service, with three further sites mainly
focussing on out of hours support. The remainder are daytime services, or span daytime and part of the out of hours period (n=4/9).

ECPs use a range of documentation with most using or planning to use the existing or an expanded version of the patient report forms (n=7/10, 70.0%), with the remainder unable to provide the information at present.

An ECP response will be activated by a discrete system in 8/11 sites (72.7%) with the remainder either not having a discrete system (n=3), or not knowing at present (n=3). This discrete function will, in 5 cases, be a desk in the ambulance control room manned to identify calls suitable for an alternative response. Nine out of 10 sites responding stated that they would respond to all categories of 999 calls, with 3 additional sites not knowing which calls would be responded to.

Table 3 shows the range of services to which schemes can refer directly. The ‘other’ category included palliative care services and services based on local contacts.
Table 3: Range of services to which schemes refer directly

<table>
<thead>
<tr>
<th>Services</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>total n=13</td>
<td></td>
</tr>
<tr>
<td>A&amp;E</td>
<td>12 (92.3)</td>
</tr>
<tr>
<td>Minor injury unit</td>
<td>11 (83.3)</td>
</tr>
<tr>
<td>Walk-in centre</td>
<td>10 (76.9)</td>
</tr>
<tr>
<td>Intermediate care services</td>
<td>10 (76.9)</td>
</tr>
<tr>
<td>Primary Care (GP &amp; out of hours cover)</td>
<td>12 (92.3)</td>
</tr>
<tr>
<td>District Nurse</td>
<td>12 (92.3)</td>
</tr>
<tr>
<td>Hospital services</td>
<td>9 (69.2)</td>
</tr>
<tr>
<td>Social Services</td>
<td>10 (76.9)</td>
</tr>
<tr>
<td>Dental services</td>
<td>6 (46.1)</td>
</tr>
<tr>
<td>Community mental health</td>
<td>9 (69.2)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (15.4)</td>
</tr>
</tbody>
</table>
2.2.2 Telephone interviews

All the interviewees were keen to be involved with the research. They had been involved in setting up the scheme locally, or appointed soon after to manage the project and take it forward, and were still involved in the scheme. The participants were well-placed to record their knowledge and experiences of the ECP scheme from inception through to early implementation phases, and to identify initial triggers and barriers to developing or integrating the ECP service within the NHS locally. They described changes to the scheme or strategies developed to counter difficulties and achieve their objectives.

All those interviewed were positive about what had been achieved so far. The schemes were moving forward and were achieving what had been expected and more, at this stage in a new service. One site, a joint initiative between the Ambulance Trust and two Trust hospitals, was proceeding in line with its original objectives. The remaining five sites had introduced changes had been made as the scheme progressed. Most of the changes resulted from responses to local need and legislative changes affecting out of hours primary care and doctors working time. The ‘step by step’ adaptation was expected to continue as the schemes grew and increasing numbers of ECPs required a different management structure and clinical governance. This is entirely consistent with a development model as ideas are translated into practice and practice modifies ideas that feedback into improved experience. Similarities and differences in the way the schemes were set up based on the interview data, subsequent changes and the reasons changes were made, are presented below.

The main drivers for success were stated to be the commitment of ECP staff and other stakeholders to the possibilities and benefits to the organisation and the wider NHS of new ways of working, and improved care to patients.

Without exception, the ECP scheme was seen to offer:

- Career progression for ambulance personnel;
- Opportunity to break down professional barriers
- Improved and more appropriate utilisation of existing resources within the NHS
• Improved and more appropriate patient care services.

The schemes had been set up differently in each site. The main local influences on the variation were:

• new and existing services and reorganisation occurring within the Ambulance Trust itself;

• the configuration of other NHS (including 24 hour availability) and social services locally;

• distance to other services;

• impact for patients (isolation, disruption to continuity of managed care plans) of unnecessary travel to A&E;

• potential for more appropriate matching of NHS expertise to patient need.

Decisions to introduce change were strategic, operational and educational, and had been influenced by the need to:

• overcome barriers to integrating the new service and new practitioners with existing services;

• to respond more appropriately to expected case-mix;

• to respond flexibly to patient and community needs that hadn’t been identified at the outset;

• policy changes, such as the new GMS Contract;

• to maximise utilisation of ECP training and skills by targeting calls more appropriately.

All interviewees expressed surprise about how quickly and easily ECPs had become integrated into the local network of services, and provided examples of where ECPs were based and networking with a range of settings including A&E, GP surgeries, WICs, and MIUs and the ambulance service.

Some pockets of resistance to the ECP schemes in some provider organisations had been observed. A&E departments were cited as an example.
Resistance to the ECP as a professional group were also cited from some other professional groups. Examples provided were GPs and nurses.

Strategies to overcome barriers to ECP access to care pathways and encourage team-working were:

- Involvement of senior executive level personnel (Chief Executives and Chairs) of the ambulance trust and other care providers in the initial negotiations about access to care pathways;

- Personal sponsorship of the ECP scheme within the intended host provider by a GP or other medical practitioner;

- Familiarity and recognition of the mutual benefits for ECPs and other health professionals through shared working practices;

- Complementary education of nurses and ECPs targeted to equivalent and standard competencies;

- Addressing misconceptions about actual differences in educational qualifications, based in how education packages are delivered (for example, ECPs full-time and nurses part-time).

**Education and Training**

One area had extended the ECPs’ education and training to enable them to respond more appropriately to the expected case-mix (expanded the pharmacology module and included a separate paediatric module). Courses had also been adapted to meet particular needs that hadn’t been anticipated when the schemes were set up. For example, in one area ECPs were attending to mental health needs and networking with relevant NHS/social care providers. Another example was that ECPs were responding to particular needs of a PCT with a particular focus on chronic obstructive pulmonary disease (COPD).

**Patient safety**

The length of time that the ECPs had been operational varied. No known specific instances relating to patient safety in practice were reported in the three sites. Potential issues had been identified through routine monitoring, reflective practice and auditing processes. The
interviewees were confident that mechanisms were in place to provide ECPs with the appropriate lines of communication and back up. Paediatrics was identified as an area of uncertainty. One scheme had added a specific paediatric module to the education package.

Clinical governance and backup
Clinical backup and supervision was provided either by the ambulance service or the host provider, or in the case of a patient receiving managed care, the relevant health professional. This was expected to expand to meet the increasing numbers of ECPs.

Workforce
Recruitment
ECP trainees from two of the interview sites had been recruited exclusively from the Ambulance Service, although some of those recruited also had a nursing qualification. A relevant clinical background in settings other than the ambulance service, was not seen as a barrier to becoming an ECP.

Safety
Instances relating to ECP safety had been encountered. Examples given were two occasions when the ECPs were out of communication for a long time and the ECP desk had closed, and another where ECPs had felt vulnerable. The communication systems had been reviewed to ensure appropriate back up was in place.

Constraints
Financial
Issues around funding were identified, particularly in respect of the need for staff replacement during training and supervision (which would be ongoing) before there could be substitution of roles and benefits for the NHS.

Publicity
The introduction of the schemes had been accompanied by a lot of publicity. Whilst it was recognised that new services had to be publicised it could also create expectations that can’t
be met within existing resources and contribute to friction between other NHS staffing groups and provider organisations.

**Standards of Practice**

The need for the education of ECPs to be tailored to complement other services locally was expressed. However, generic standards with core competencies that all ECPs have obtained (for example 80% core; 20% specialised) that would be transferable between Trusts was identified as an important issue to be addressed.

Other questions to be addressed were whether an ECP is to be a registered profession and what level of remuneration is appropriate to recognise the skills and responsibility of the ECP without creating recruitment and retention issues elsewhere in the service.

**2.2.3 Economic Analysis**

The responses to the ECP evaluation survey have been collated and entered into an economic model to estimate the total cost per ECP and the total cost per ECP contact at the aggregate and individual site levels. Two of the 14 responding sites were not able to provide any economic information. Therefore this analysis is based upon 12 sites, some of whose data is incomplete. Total costs have been calculated based upon recurrent and non-recurrent costs. Recurrent costs are costs which are borne on an annual basis within the scheme e.g. salaries, administration costs, overheads. Non-recurrent costs are one off costs associated with the set up of the ECP scheme e.g. training and placement supervision, purchase of vehicles and equipment, vehicle adaptation etc. These total costs are annuitised based upon their expected duration or life-time to obtain an annual recurring cost for each cost category. Individual site activity data was not made available to us, therefore total costs per contact have been subjected to a sensitivity analysis based on an ECP seeing between two and seven patients per shift. A shift has been assumed to be for 10 hours, with each ECP working a 40-hour week for 46 weeks of the year. On this basis each ECP should see between 368 and 1,288 patients per year.
The total amount of funding for the ECP scheme for 2004-2005 varies by site with a minimum amount of funding of £100,000 and a maximum of £718,800. The mean total amount of funding is £236,677 with a median of £100,000. On the basis of the information presented and the assumptions included in the cost model, the total cost per ECP is £32,754 (range £31,119 to £36,407) and the total cost per ECP contact is shown in table 4 below. Appendix D includes a summary of the costings based on the different activity of the ECPs.

### Table 4: Sensitivity analysis of the costs per ECP contact

<table>
<thead>
<tr>
<th>Cost measure</th>
<th>2 patients per ECP per shift (£)</th>
<th>7 patients per ECP per shift (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total 368 patient per year</td>
<td>Total 1288 patients per year</td>
</tr>
<tr>
<td>Mean</td>
<td>89</td>
<td>24</td>
</tr>
<tr>
<td>Median</td>
<td>89</td>
<td>25</td>
</tr>
<tr>
<td>Range</td>
<td>85 - 99</td>
<td>24 - 28</td>
</tr>
</tbody>
</table>

It should be noted that the data included in the cost model and the results obtained represent preliminary estimates. In phase two of the project it would be very beneficial to aim to firm up these costs by contacting the survey respondents (and non-respondents) and working with each of them to elicit further and more accurate information where this can be obtained, in particular relating to activity levels and salary, administration and overhead costs.

### 3.0 DISCUSSION

#### Main findings

There is wide variation in the number of ECPs employed by each site and the stage of development they are at. There is also some variation in the backgrounds that they came from, although the majority are from the ambulance service. It may be that ambulance service personnel lend themselves ideally to work in the varied settings, and especially in the community, given their prior experience. Should the schemes be extended and rolled out in other sites, the drain on existing ambulance services may be significant, but equally, the ECP role may provide an opportunity for career progression keeping skilled paramedics on the
front line, where otherwise they would leave, retire, or go into management. It seems that most sites have reasonably comparable training packages, with some variation existing because of systems in place before the CWP became involved. In order to make the role transferable across sites, the CWP should encourage sites to work towards a standard time length to the taught and supervised practice parts of the training. In addition, there is a little variation in the core competencies achieved as a result of training. Again, there should be an agreed set of core competencies with optional skills added on to meet any variation in local demand. This would make national recognition and accreditation of the role more feasible.

Most sites are or will be operating their schemes within the range of settings that it was anticipated they would, with most schemes rotating between different settings. This model would appear to add strength to the ECP role in terms of continuing professional development, collaboration with other health care professionals and ensuring that individuals do not become professionally isolated.

There is wide variation in the type of clinical support offered, with some sites not identifying any support as yet. It is important for ECPs to have a source of day-to-day advice for clinical problems that they encounter. In cases where the ECP is working in A&E departments or primary care centres, this will occur as a matter of course. However, it is important that where ECPs operate in the community as single responders, appropriate levels of support are available. It is vital to ensure that they have clear lines of communication. This is also an important patient safety, clinical governance and staff safety issue. This report recommends that each site has a clear clinical support structure in place for each setting the ECP works in.

Further variation was also found in relation to the hours that schemes were operational for. The ECP role was originally designed to provide opportunities for career development of health care professionals, and also to provide patient focused rather than system focused care. However, given the changes taking place such as the introduction of the Working Time Directive and the new GMS Contract with respect to other work forces who traditionally have provided emergency care especially out of hours, it is likely that ECPs may be required to
provide a substantial amount of care out of hours. It appears that some schemes have already anticipated this gap in service by planning their hours of operation mainly in the out of hours period. It will remain to be seen how those schemes that had not done this at the time of the study, or that were undecided, will develop to meet the inevitable challenges that these changes will produce.

Limitations of this study

The Phase one study has been limited in what it hopes to achieve by working to extremely tight deadlines. It would have been preferable to visit each site and gather detailed information, especially on costs from Project Leads or the relevant finance department in each site. Many of the project leads were not able to provide information relating to costs or activity that was requested either because they did not have the information to hand, or they were unsure of the true figures.

A true evaluation of the acceptability and safety of the schemes is not possible since only 50% are currently operational. Some other sites are in the very early stages of development, and have only theoretical frameworks for operation which may not bear fruit in reality. A further study would be of value once more of the schemes have become active. However, it is anticipated that phase two of this study will assist in providing more information about quantifying the extent to which the new role has contributed to the development of safe alternative emergency and urgent care provision and how such provision meets the needs of patients as outlined in the brief from the NHS Modernisation Agency.

This evaluation has not included an analysis of the raw data of effectiveness of ECPs, returned by sites. These data were analysed internally by CWP and highlights were shared, However, the evaluation will benefit from the research team plans to review the data independently. Phase two of this study aims to provide some robust quantitative data to accompany any qualitative information.
4.0 CONCLUSION

The early indications are that the ECP schemes included in the study are that they achieving their original objectives. Variations in development were evident, mostly explained by flexible responses to local need and changes in GMS contracts and UK legislation. Factors contributing to a successful operational framework were identified as strategic vision, an appropriately skilled workforce, integration with other services, rotational working across different settings, and a team-based approach to provide the most appropriate and safe level of care to patients.

Phase two of the evaluation will evaluate four ECP sites in detail. Issues of clinical governance, practitioner views and patient safety identified in phase one will be addressed together with a more detailed study of the costs and cost consequences of an ECP. This study will be conducted as a controlled evaluation of 4 ECP sites in England. Patients will be recruited who have encountered the ECP service and compared with those who have not. Data will be collected relating to patient satisfaction with the service they received, subsequent health care contacts they made (planned and unplanned) and health outcomes in the 28 days following their initial episode. In addition, a series of interviews with ECPs, other health care professionals that ECPs liaise closely with and key stakeholders will be conducted to identify levels of satisfaction with the service, areas where further development is needed and lessons that can be learned for the future.

5.0 DISSEMINATION

It is intended that dissemination will be an ongoing process. The results of phase one will be presented in a report to the NHS Modernisation Agency and submitted for publication to relevant journals such as the Health Services Journal. In addition, an abstract has been accepted for presentation at the Faculty of Emergency Medicine Annual Scientific Meeting, 2004.
6.0 REFERENCES


4 Department of Health. Reforming Emergency Care 2001


17 NHS Executive ‘Treat and Refer’ protocols; the development, costs and consequences of a new response to patients with non-urgent clinical needs who call for an emergency ambulance service 2001.


