The feasibility of establishing Emergency Care Practitioners In New Zealand

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ABSTRACT

Emergency Care Practitioners (ECPs) have been successfully piloted and currently work within the United Kingdoms’ National Health Service (NHS). An ECP is a healthcare professional who works to a medical model, with the attitude, skills and knowledge base to deliver holistic care and treatment within the pre-hospital, primary and acute care settings with a broadly defined level of autonomy. ECPs deliver care that is patient-focused, in the least intensive and most convenient and appropriate place for the patient.

The opportunity to assess the feasibility of extending the role, academic knowledge and clinical practice of New Zealand Advanced Paramedics correlates to a government expectation that Advanced Paramedics, as providers of a first contact health professional service, have an active involvement in Primary Health Care. There are increasing demands and inequalities identified in the present New Zealand Health System. This indicates the need for research to investigate and question how the emergency ambulance services of New Zealand, could contribute to enhancing our communities’ safe and effective access to, and affordability of primary health care.

The ‘emergency ambulance services’ within New Zealand include St John, Wellington Free Ambulance and those District Health Boards who operate an emergency ambulance service, in particular Wairarapa and Taranaki. Media coverage in September 2007 questioned adequate emergency ambulance service funding, safe staffing levels, and lack of professional registration throughout New Zealand A health select inquiry employed by the Ministry of Health (MoH) is compiling submissions regarding the provision of ambulance services in New Zealand. A report will then be presented to the New Zealand Government in 2008, with findings and recommendations.

Aim

The aim of this dissertation is to investigate if ECPs could be a suitable practitioner to establish within the New Zealand emergency ambulance services and the New Zealand health system. The aim is to identify potential advantages and barriers of establishment in New Zealand in comparison to the United Kingdom. Advanced Paramedics and Stakeholders views on professional registration and regulation for the emergency ambulance services have also been investigated within the research.
**Methods**

This is a mixed methods project involving New Zealand Advanced Paramedics employed by an emergency ambulance service in New Zealand and Stakeholders of organisations considered to have a vested interest in emergency ambulance service operations, both directly and indirectly.

A formal semi-structured national questionnaire was posted (*see Appendix One*) to Advanced Paramedics. The aim of the survey was exploratory and sought to collect preliminary information from Advanced Paramedics specifically on demographics, knowledge of the concept of ECP, their motivation and opinion about professional registration, as well as their current role satisfaction. Using either an electronic interview, teleconference or face to face interview, a series of interview questions were supplied to Stakeholder organisations (see Appendix Two). The interviews were semi-structured in design to capture the varying roles of those individuals interviewed.

**Results**

There were 203 questionnaires sent to New Zealand Advanced Paramedics. The total number of returned questionnaires was 116, a 57% response. Eighty seven of the questionnaires were not returned which is 43% of the 203 total.

The Advanced Paramedic questionnaire showed that 38% of the respondents strongly agreed that ECPs could be a realistic option for the New Zealand emergency ambulance services (95% confidence interval = 29.1% to 47.4 %). Stakeholder organisation respondents 15/15 (100%) unanimously considered ECPs to be a realistic option for the New Zealand emergency ambulance services (95% confidence interval – 81.90% to 100%).

97% of Advanced Paramedics respondents agreed to registration (95% confidence interval = 92.6 to 99.4%). Stakeholder organisation respondents 15/15 (100%) unanimously agreed that Advanced Paramedics should be professionally registered (95% confidence interval – 81.90% to 100%).
70% of the Advanced Paramedic respondents would be interested in undertaking an ECP qualification (95% confidence interval = 60.6% to 78.0%). When asked the question again including would they be prepared to undertake the ECP qualification if they were required to self fund produced a yes result (95% confidence interval = 33.1% to 51.7%) for 42% of the respondents.

**Conclusions**

The concept of introducing ECPs into New Zealand was considered feasible by both Stakeholder respondents who said yes (100%) and Advanced Paramedic respondents who said definitely yes (38%).

Advanced Paramedic respondents considered this concept to be realistic, and saw a progression in the extension of roles as an essential career pathway. Simultaneously Advanced Paramedic respondents expressed a desire to be professionally registered and regulated, to ultimately protect the patient, while isolating and minimising the capacity for human error. All Stakeholder respondents supported the concept of ECPs for the New Zealand emergency ambulance services. The ECP also concept rated highly as a reasonable paradigm to introduce within the New Zealand Health System.

The perceived primary barrier to the introduction of ECPs in New Zealand relates to how the structure could be funded. Communication and cohesion is required from the outset. This presents a challenge in New Zealand, given that the concept requires a multi-faceted approach between and within many organisations. Potential ECPs in New Zealand arguably could not practice within the boundaries of a higher level qualification, without the compliance of professional registration and regulation under the New Zealand Health Practitioners Competence Assurance Act (HPCAA) (2003).
PREFACE

Authorship
The author takes overall responsibility for the content and context of this submitted research.

Terminology
The exact terminology used by New Zealand emergency ambulance services and equivalent to the United Kingdoms’ Paramedic is:

1. Advanced Paramedics (as employed by St John).
2. Intensive Care Paramedics (as employed by Wellington Free Ambulance).
3. Advanced Life Support (ALS) Paramedics
   (As employed by the Wairarapa and Taranaki District Health Boards).

Within the context of this research, to maintain simplicity, the author has referred to the above mentioned as ‘Advanced Paramedics’ and have maintained the terminology even when at times interpretation could be considered as relating to all levels of Ambulance Officers operating within an emergency ambulance service in New Zealand.

Acknowledgments
First and foremost the author would like to thank those ‘motivated’ Advanced Paramedics and Stakeholders for giving their time through either completing the questionnaire or the interview. Your thoughts and insights have been valuable, with some of those thoughts quoted anonymously, throughout the discussion.

New Zealand emergency ambulances services management and administrative staff also have the author’s appreciation for the facilitated access to their infrastructure and databases. Particularly St John, who have assisted and been extremely supportive.

Brent Nielsen, thank you for answering many persistent emails and allowing utilisation of necessary resources within St John.
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<td>Advanced Paramedic</td>
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<td>Auckland University of Technology</td>
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<td>Department of Health</td>
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<td>Emergency Care Practitioner</td>
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<td>Emergency Department</td>
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<td>ETITO</td>
<td>Electro Technology Industry Training Organisation</td>
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<td>Primary Response In Medical Emergencies</td>
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<td>WIC</td>
<td>Walk in centre</td>
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GLOSSARY OF TERMS

**Advanced Paramedic**: New Zealand ambulance personnel employed by St John. A St John Medical advisor, in partnership with St John management authorises Authority to Practice (ATP). Advanced Paramedic is the highest practice level, with a delegated scope of practice. The medicines and interventions that Advanced Paramedics are trained in include: entonox, methoxyflurane, aspirin, paracetomol, nasopharyngeal airways, salbutomol, glycerin trinitrate spray, intramuscular glucagon, laryngeal mask airway, manual defibrillation, intravenous cannulation, intravenous fluid administration, intravenous glucose, subcutaneous lignocaine for intravenous cannulation, 12 lead ECG acquisition and interpretation, morphine, metoclopramide, naloxone, nebulised adrenaline, intramuscular and intravenous adrenaline, laryngoscopy, endotracheal intubation, cricothyroidotomy, chest decompression, intraosseus needle access, atropine, frusemide, amiodarone, midazolam, ketamine and transcutaneous pacing (National Clinical Advisory Group, 2007).

**Emergency Ambulance Communications Centre**: Located in Auckland, Wellington and Christchurch in New Zealand. The communications centres are responsible for receiving and processing emergency ambulance 111 calls from the New Zealand Telecommunications operator, with personnel responsible for selecting and dispatching appropriate personnel and equipment.

**Emergency Care Practitioner**: The United Kingdoms’ Department of Health (2007) defines the ECP and role as “a healthcare professional who works to a medical model, with the attitude, skills and knowledge base to deliver holistic care and treatment within the pre-hospital, primary and acute care settings with a broadly defined level of autonomy”. The ECP role is part of a wider reform of the way in which urgent care is delivered in the United Kingdom. The main focus of the role is to enhance the patients’ experience through their emergency, urgent and urgent care journey by providing emergency assessment, diagnosis, treatment and aftercare (Department of Health, 2007).

**Entry Block**: Entry to the Emergency Department is (functionally) blocked because of an overwhelming number of patients attending the Emergency Department in a short space of time. Considered overwhelming because it exceeds the physical and medical processing capacity of the Emergency Department.
**Emergency Department overcrowding**: This refers to the situation where Emergency Department function is impeded primarily because the number of patients waiting to be seen, undergoing assessment and treatment, or waiting for departure, exceeds the physical staffing capacity of the Emergency Department.

**Primary Response In Medical Emergencies (P.R.I.M.E)**: The PRIME (Primary Response in Medical Emergencies) programme is a jointly commissioned project funded by the MoH and ACC and administered by St John. It has been developed to provide both the coordinated response and appropriate management of emergencies in rural locations. The PRIME programme utilises the skills of specially trained rural GPs and/or rural nurses in areas to support the ambulance service where the response time for assistance would otherwise be significant or where additional medical skills would assist with the patient’s condition.
Introduction

**United Kingdom need and analysis of ECPs**

The ECP has been operating within the United Kingdom since 2001. The concept and its effectiveness have also been stringently reviewed. This has been done by introducing ECPs under a pilot scheme regionally in the United Kingdom with the pilot outcome having been nationally assessed within published research by (Adams, et al 2005), (Mason, et al 2005a) and (Mason, et al 2005b).

Phase one of the analysis involved a postal survey which was sent to the 17 ECP sites in the United Kingdom. This was undertaken to collect preliminary information about the initial development. A telephone interview of twelve people identified as key personnel in three rural and three urban ECP sites was conducted in the form of a semi structured interview, which were then tape recorded and transcribed. The aim of the telephone interview was to gain information about key personnel’s initial experiences of the first wave of ECP schemes. The final part to the research was an economic analysis which involved responses to the ECP evaluation survey which were then collated then entered into an economic model to estimate the total cost per ECP, also including contact at the aggregate and individual site levels (Mason et al, 2005a).

The latter final phase report (Mason et al, 2005b) evaluated the appropriateness, satisfaction and cost of ECPs compared with the usual available (Paramedics) in the same healthcare setting. An understanding of the effect that ECPs are having on the delivery of health services was measured, and whether this yielded effective cost savings.

A mixed methodology approach was utilised investigating three ECP schemes. Two were services that served rural areas and one serviced an urban population. At each of the sites a controlled observational study of ECP health care was conducted compared to the Paramedics within the site. The study design consisted of a patient questionnaire of experiences with the service following an acute medical event and analysis of routine emergency clinical records.
524 patients were recruited to the study with the research measuring patient satisfaction with the care, acceptability to the patient, safety, health status and social care use. Patients who agreed to being contacted were sent a questionnaire in the first 3-5 days after the episode for which they were recruited to the study. Following this a second questionnaire was sent out at 28 days to identify all subsequent health and social care contacts the patient received, relating to the initial episode and documented health status again. The principal finding from this part of the study found that overall patients in the ECP group required less investigating and referral at their initial consultation than the control group. The patients were also documented as receiving more treatments than the control group. Satisfaction of patients with the care received from ECPs was consistently higher than the control group.

Telephone interviews were also conducted to add context and meaning to the results of the observational study. Sixteen telephone interviews were conducted and included five ECPs, five stakeholders and six other health professionals. The evaluative descriptive results reported that the ECP role has been well accepted by some groups of health professionals, and initial resistance by others was relaxing as the role became more established. Barriers of the ECP role achieving full potential as reported from the telephone interview cites bureaucracy, but did not elaborate on the reasons for this, a lack of understanding from middle managers about the ECP role, a lack of appreciation of the differences between ECPs and Paramedics. In two of the services the failure of ECPs to use their skills fully was raised as a source of frustration, and in all three services there was an identified reluctance of ambulance crews to recognise the ECP role and to refer appropriate cases to ECPs.

An economic study was also part of the methodology, with data limitation preventing the calculation of cost effectiveness in two of the three services. This limitation made the sample size small. The economic analysis was able to identify an approximate cost saving of approximately £292 per patient seen by an ECP. This cost was attributed to staff costs at the scene, avoided Emergency Department attendances and lower use of out patient services. The costs reductions identified were limited to 999 (111) calls and therefore requested a wider research study to determine overall cost effectiveness.
**Extending the role of the Advanced Paramedic**

Doy and Turners (2004) report was written during the national pilot of ECPs in the United Kingdom. The background and development of the new ECP has been described which was run by the East Anglian Ambulance NHS and the University of East Anglian. The report states that ECP students within the programme saw themselves as “occupying the space between the paramedic, the nurse and the doctor”. Having clarity about the roles ECPs can carry out combined with clear referral pathways may allow implementation of the role to full potential.

Scott and Carneys (2004) ECP report cites a need to invoke a fundamental system change in emergency and urgent care and sees the ECP role as a mere component. The report describes that the ECP has to be able to undertake the ‘first point contact’ role, and that the ECP must be able to undertake and interpret the findings gained during a formal history taking and a comprehensive and appropriate examination. They have documented that the ECP and system implemented will have gained little, if at that point the patient is merely referred to some other clinician or agency. Problems are always going to be highlighted but none are insurmountable. They consider that it is the end product that must be clearly defined (Scott and Carney, 2004).
**Data sources searched**

- Databases searched: CINAHL, MEDLINE,
- Websites of: New Zealand Ministry of Health, New Zealand Government, Department of Health (United Kingdom), St John, Wellington Free Ambulance, Healthline, Australian College of Ambulance Professionals, Skills for Health, National Health Service, New Zealand Nursing Organisation, New Zealand Nursing Council, British Paramedic Association, Health Professions Council, Sheffield University Centre for Health and related research and medical research unit and publications.
- Reference lists of reviewed articles were accessed and relevant articles were searched.

**Search terms**

Emergency Care Practitioner, Paramedic Practitioner, Paramedic, Advanced Paramedic, Nurse Practitioner,

**Background topics**

This introduction includes the following background topics that have been considered relevant to in order to establish whether introducing ECPs into New Zealand is feasible. They include:

- Comparisons between the United Kingdom and New Zealand Health systems.
- An overview of both the United Kingdom and New Zealand emergency ambulance services.
- Professional registration and regulation.
- Christchurch Study on an ECP response.
- Identified barriers to adequate health care in the health system including overcrowding in Emergency Departments, inappropriate attendances at Emergency Departments, a decline in rural health practitioners, and primary health care and after hours care.
- Potential benefits and barriers identified.
The feasibility of establishing Emergency Care Practitioners in New Zealand

**United Kingdoms’ Health System and the United Kingdoms’ emergency ambulance service.**

An ECP or Paramedic Practitioner has been described as an “advanced, autonomous practitioner capable of assessing, treating, discharging and referring patients at the scene” (Department of Health, 2005). They have also been defined as: “health professionals who work to a medical model, with the attitude, skills and knowledge base to deliver holistic care and treatment within the pre-hospital, primary and acute care settings with a broadly defined level of autonomy” (Department of Health, 2006).

Recruitment of ECPs in the United Kingdom has been from recognised registered practitioners from backgrounds of ‘Paramedics’ and ‘Registered Nurses’ who then undertake specific training and higher tertiary education (Department of Health, 2005). According to Woollard (2006), ECPs were initially operational in the United Kingdom under a pilot scheme, but individual practitioners vary considerably with respect to type and duration of training, permitted scope of practice and even job title.

Seventeen trial sites were developed to introduce ECPs in the United Kingdom (Department of Health, 2005, Department of Health 2007). The aim was to provide suitably qualified personnel (both nursing and ambulance) with the necessary additional knowledge, skills and thought processes required to treat patients within the prehospital setting (Department of Health, 2005). Specifically, emphasis was placed on extended patient assessment and examination skills, expanded treatment of minor injuries and minor illnesses, management of patients in their homes with chronic conditions, and an increased pharmacology practice with an ability to administer and supply a further thirty medications over and above that of an United Kingdom Paramedic. Authority was given to treat and discharge at the scene, with the ability to refer to other providers of primary care (Department of Health, 2005, p.48).

The introduction of ECPs in the United Kingdom has assisted to change the National Health System in the United Kingdom (Department of Health, 2005).
The United Kingdoms Health System

The United Kingdoms’ National Health Service (NHS) has a collaborative mandate which sets overall policy objectives, standards and targets, and monitors performance (National Health Service, 2007). The NHS is funded by the taxpayer and managed by the Department of Health (NHS, 2007). At the launch on July 5th 1948, by the then Minister of Health, Aneurin Bevan, it had three core principles that it meet the needs of everyone, that it be free at the point of delivery and that it be based on clinical need, not ability to pay (NHS, 2007).

A major change in the United Kingdom NHS occurred in 2002 known as 'Shifting the Balance of Power' (Department of Health, 2002). The intention of this policy was to give greater authority and decision making power to patients and frontline health professional staff, which included ambulance staff. The ‘balance of power’ was shifted to locally-based Primary Care Trusts which control seventy five per cent of the NHS budget, with the role of improving the health of people in their areas. At the same time Strategic Health Authorities were established with a strategic purpose to improve local health services, and ensuring that they perform well.

Strategic Health Authorities

The figure below has been retrieved from the National Health Service website (NHS, 2008). The intent is to give the reader an example of the specific areas in the United Kingdom that a Strategic Health Authority is responsible for in comparison to New Zealand. New Zealand has a Ministry of Health (MoH), which is under government regulation and has a population of as at Tuesday, 12 February 2008 of 4,257,485 (New Zealand government, 2008).
The populations that are managed by the Strategic Health Authorities (NHS, 2008).

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>2,545,073</td>
</tr>
<tr>
<td>North West</td>
<td>6,827,170</td>
</tr>
<tr>
<td>Yorkshire and the Humber</td>
<td>5,038,849</td>
</tr>
<tr>
<td>East Midlands</td>
<td>4,279,707</td>
</tr>
<tr>
<td>West Midlands</td>
<td>5,334,006</td>
</tr>
<tr>
<td>East of England</td>
<td>5,491,293</td>
</tr>
<tr>
<td>London</td>
<td>7,428,590</td>
</tr>
<tr>
<td>South East Coast</td>
<td>4,187,941</td>
</tr>
<tr>
<td>South Central</td>
<td>3,922,301</td>
</tr>
<tr>
<td>South West</td>
<td>5,038,200</td>
</tr>
<tr>
<td><strong>New Zealand</strong></td>
<td><strong>4,257,485</strong></td>
</tr>
</tbody>
</table>

Table 4. Strategic Health authority populations compared to New Zealand
United Kingdom Ambulance Trusts

Ambulance services throughout the United Kingdom are provided by eleven ambulance trusts (National Health Service, 2007). The performance of the ambulance trusts is regulated by Strategic Health Authorities with a role in providing strategic sector leadership, provision of oversight and ensuring accountability and generation of workforce development and training (National Audit Office, 2004; National Health Service, 2007).

The eleven United Kingdom ambulance trusts include: East Midlands, East Of England, Great Western, London, North East, North West, South Central, South East Coast, South Western, West Midlands and Yorkshire (NHS, 2007).

The United Kingdoms’ Ambulance Services

NHS Ambulance Trusts are the local organisations responsible for responding to 999 emergency calls (equivalent to 111 calls in New Zealand), transporting patients, and increasingly for providing out-of-hours care (OOH). If a call to 999 is made for an emergency ambulance it will be prioritised into one of three categories:

- Category A emergencies - which are immediately life threatening.
- Category B – conditions which are serious but not immediately life threatening.
- Category C – non-urgent conditions.

A report written by the Audit commission (as cited in Mason et al, 2005a) questioned the need for fully crewed ambulances to attend all 999 calls and suggested that ambulance services should be allowed to decide who should be sent to each type of emergency and the ability to treat some patients at home without the need for transfer to an Emergency Department. This suggestion encompasses the priorities described below in establishing ECPs, and supports the suggestion made in the report by Mason et al (2005a) that some 999 calls do not require a ‘lights and sirens’ emergency response, with government policy allowing for the development of alternative responses such as the ECP. Supporting evidence has shown that in 2002-2003, 36% of emergency 999 calls resulted in an emergency response, but no subsequent transport.
Aims of establishing ECPs in the United Kingdom

The aims of establishing ECPs in the United Kingdom were outlined clearly in both - *The ECP Report: Right Skill, Right Time, Right Place* (Department of Health, 2004) and a later document also published by the NHS titled – *Taking healthcare to the Patient* (Department of Health, 2005). The priorities summarised by Woollard (2006) were to:

- Decrease the number of unnecessary transports to Emergency Departments.
- Identify and refer patients’ to the most appropriate place of care.
- Increase patient satisfaction.
- Respond and reserve emergency ambulances for true emergencies.
- Treat appropriate patients who dialed 999 in an emergency at home and discharge with or without referral.
- Identify and clinically manage patients who could have a delay in hospital admissions.
- Identify the most suitable type of transport e.g. non emergency ambulance or car.
- Arrange direct referral to the most appropriate healthcare or social service provider.
- Accept GP requests for home visits to assess patients for which a 999 ambulance may have otherwise been requested.

Educational requirements United Kingdom – ECPs

In June 2007, ‘*The Competences and Curriculum Framework for the Emergency Care Practitioner*’ was published by the Department of Health and Skills for Health. Skills for Health are the Sector Skills Council (SSC) for the United Kingdom health sector. Their purpose is to help the whole sector develop solutions that deliver a skilled and flexible United Kingdom workforce, in order to improve health and healthcare (Skills for Health, 2008). Skills for Health’s specific aims are to:

- Develop and manage national workforce competences.
- Profile the United Kingdom workforce.
- Improve workforce skills.
- Influence education and training supply.
- Work with their partners.
The aims in the document titled ‘The Competences and Curriculum Framework for the ECP’ are to ensure consistency in ECP educational packages in order to allow for national transferability of the role. It gives valuable advice and timely guidance to commissioners and providers on how to effectively use and deploy ECPs. It also provides confirmation of the educational process that needs to be undertaken by Higher Education Institutions in order to successfully deliver qualified ECPs (Department of Health, 2007).

The competences required of the ECP to be delivered by an integrated academic and clinical programme, have been developed out of experience and trialed through 17 different pilot sites in the United Kingdom. The framework describes the level of responsibility that ECPs will be expected to take for the diagnosis and management of a wide range of patient conditions. It sets out the core competences to be met by all ECPs. These may be supplemented by locally determined competences, with the relevant training/education commissioned locally to meet service demands (Department of Health, 2007).

Debate is significant in the United Kingdom regarding the length of training and has been reinforced by Professor Woollard as cited in Williams (2006) that the requirement of any training and education package is both appropriate for the role and clearly defined.

**The key points of the Curriculum Framework**

The curriculum framework published by the United Kingdoms Department of Health (2007) states that the development of a national standard on the ECP qualification requires:

• A flexible approach to the rigorous criteria necessary for entry to the programme
• An intensive academic programme that will allow the time required for individual professional development and which is subject to robust appraisal
• Agreed minimum levels of clinical experience
• A common core knowledge base
• Common core clinical competences
• A national assessment process
• Ongoing continuing professional development
ECPs must complete an academic programme of 1400 hours designated study time, of which a minimum of 400 hours is designated as theory learning (delivered at a minimum standard of Degree level – level 6 in the United Kingdom English qualification framework). There is also a minimum of 1000 hours clinical learning in appropriate clinical settings. Only then will they be able to practice as an ECP in the clinical team, within a range of health care settings (Department of Health, 2007).
The feasibility of establishing Emergency Care Practitioners in New Zealand

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New Zealand Health system and the New Zealand emergency ambulance services

The Ministry of Health (MoH) in New Zealand is the equivalent body to the United Kingdom’s NHS, although there are obvious differences.

New Zealand Health System

A major difference between the MoH in New Zealand and the United Kingdoms’ NHS is that the NHS has overall control and governance, of the respective ambulance trusts. New Zealand’s’ MoH does not share this same authority. This is mainly due to New Zealand emergency ambulances services being a private sector entity with partial funding made available through the Accident Compensation Corporation (ACC) and the Ministry of Health’s service based Primary Health Care Strategy (King, 2001), which is a well established policy document.

New Zealanders’ access to acute emergency services is clearly articulated within core components and strategies of the collaborative “Roadside to Bedside” framework (Ministry of Health, 1999). This document encompasses policy with an integrated approach regionally and nationally to emergency care management. In 1999, Wyatt Creech was the Minister of Health. His foreword to the ‘Roadside to Bedside’ publication states that:

“New Zealanders expect that when they have an accident or a medical emergency they will receive the right care, at the right time, in the right place, delivered by the right person. This document provides New Zealand’s health providers and funders with a high-level accident and emergency, or acute management framework that will ensure this aim continues to be achieved” (Ministry of Health, 1999).

The New Zealand Government has undertaken a population-based approach to funding the New Zealand's public health and disability system. District Health Boards (DHB) are responsible for the health of their local populations and ensuring that the needs of individuals and communities are represented at the local level. The District Health Boards fund primary health care services and provide hospital services for their communities. Local decision-making within priorities set by the NZ Health Strategy is one of the key components within the policy to delivering on the Government's commitment to help those whose needs are greatest, and to provide better health for all New Zealanders (Ministry of Health, 2000).
Ambulance New Zealand

Ambulance New Zealand is recognised as the independent peak representative body for the ambulance sector and is endorsed by the MoH, ACC, Police, Fire Services and other rescue and emergency services. Ambulance New Zealand was established by the emergency ambulance services and incorporated under the Charitable Trust Act 1957 on the 24th December 2002. Prior to this the sector was governed by the New Zealand Ambulance Board which was disestablished to enable the formation of Ambulance New Zealand.

The role of Ambulance New Zealand is to represent the collective interests and advocate on behalf of the ambulance sector for the provision of safe, reliable and efficient ambulance services.

In order to achieve this purpose Ambulance New Zealand has identified the following goals:

1. To add value to member services and organisations.
2. To focus on assisting the ambulance sector in improving patient outcomes.

These goals will be achieved through the implementation of the following objectives:

1.1 To facilitate and promote the development of a national strategy for ambulance service provision that has the support of all stakeholders.
1.2 To provide a forum for members to develop a coherent voice on relevant sector issues.
1.3 To coordinate ambulance sector representation in key matters relating to the provision of ambulance services.

2.1 To facilitate the development and promulgation of best practice in ambulance service provision through the development, implementation, monitoring of accreditation to standards and guidelines.
2.2 To facilitate coordination and collaboration between members to achieve shared objectives.
2.3 To collaborate with other relevant regional and international recognised bodies to advance the interests of the ambulance sector.

(D. Waters, personal communication, August 20, 2007)
The New Zealand Ambulance Education Council (NZAEC) was the recognised Industry Training Organisation (ITO) for the ambulance sector established by the New Zealand Ambulance Board and incorporated in 1999.

The NZAEC had the goal of ensuring that ambulance qualifications met the requirements for an effective and safe ambulance service for all New Zealanders. In 2003 it was decided to merge the NZAEC with another ITO and, following a process of selection the Electro Technology Industry Training Organisation (ETITO) was chosen as having the best fit with the Ambulance sector. This merger took place early in 2004 and the ETITO continues to be the recognised Industry Training Organisation to this date (D. Waters, personal communication, August 20, 2007).
**New Zealand Emergency Ambulance Services**

In comparison to the eleven United Kingdom’s NHS Ambulance Trusts, the New Zealand emergency ambulance services have four separate entities.

1. **St John**

St John is the largest ambulance service with one hundred and eighty five ambulance stations nationally providing emergency and non-emergency ambulance services for approximately eighty five per cent of New Zealand's population. St John is a charitable organisation operating independently of Government, and serves New Zealand communities funded by contracts with ACC, MoH and DHBs. Other funds are generated through patient part-charges for medical emergencies and patient full-charges for non emergency (Private Hire) transports. Reliance is also placed on community donations, fundraising and contributions from a range of commercial activities undertaken by St John. The organisation “has a ‘volunteer ethos’ and has two thousand, three hundred volunteers that work alongside eight hundred and twelve paid officers” (St John, 2007).

**History**

In 1885 St John rapidly established itself throughout New Zealand with many of the first branches established in small towns such as Hampden, Oamaru and Petone, where existing medical services were scant and the labour intensive workforce was susceptible to serious injury. The ambulance service itself was revamped in 1975 responding to government requirements, and in conjunction with an identified need for Ambulance Officers to hold formal qualifications (St John, 2007).

**Regions**

St John has five regions within the country. Each region is responsible for St John activities within its boundaries *(See Figure 2.)*.

The three Regions in the North Island are:

1. Northern Region.
2. Midland Region.
3. Central Region.

The South Island comprises:

4. Northern Region South Island (NRSI)
5. Southern Region South Island (SRSI)
FIGURE 2. Location of the five St John Regions and National Headquarters Wellington
2. **Wellington Free Ambulance Service**

Wellington Free Ambulance Service is completely independent from St John. They provide free to-the-patient paramedical services and patient transport services to the region of greater Wellington including the Kapiti Coast, Upper Hutt, Lower Hutt, Wainuiomata and Porirua City. The location of Wellington ambulance stations are shown on Page 32, *Figure 3*. Wellington Free Ambulance is an incorporated society formed in 1927 and run by its own board of management. They are committed to providing the highest quality clinical care in emergency situations, pre-hospital care, and rescue and ground transport services (Wellington Free Ambulance, 2007).

Wellington Free Ambulance’s main operational budget is met by Government contracts through the MoH and ACC. The balance is raised from sponsorship, local authority grants, trusts, donations, public appeals and the service’s own resources. In addition, through its commercial division, Wellington Free Ambulance has a joint venture arrangement with Healthcare New Zealand to market medical alarms and also sells first aid training and first aid kits to generate income (Wellington Free ambulance, 2007; M.Smyth, personal communication, October 20, 2006).

3. **Wairarapa Emergency Ambulance Region**

The Wairarapa Region currently operates with two different emergency ambulance services. The Wairarapa District Health Board employs frontline ambulance staff. St John also employs frontline paid and volunteer staff in some of the smaller stations, such as Greytown. This unique working relationship requires co-ordination from the Emergency Ambulance Communication Centre (EACC) based in Wellington. The communications centres responsibility is to send the nearest available vehicle to any incident, with the ability to send assistance, or higher qualified staff from either emergency ambulance service, if required. Ambulance stations in this area are shown on page 32 and are based at Masterton, Carterton, Greytown, Martinborough and Featherston (See Figure 3a).
The feasibility of establishing Emergency Care Practitioners in New Zealand

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Wellington Free Ambulance Region

FIGURE 3. Location of Wellington Free Ambulance Stations
(Green arrowed area = Region)

Wairarapa Ambulance Region

FIGURE 3a. Location of Wairarapa Emergency Ambulance Stations
(Brown arrowed area = Region)
4. **Taranaki Emergency Ambulance Region**

Taranaki’s emergency ambulance service operates directly within the Taranaki District Health Board Region, with stations based at New Plymouth, Inglewood, Stratford, Hawera, Opunake and Patea. These stations locations are shown on the map below (See Figure 4).

**FIGURE 4. Location of Taranaki Emergency Ambulance Region**
Professional Registration and Regulation

While registration and regulation for Paramedics in the United Kingdom is well established, in New Zealand this is yet to happen.

The Health Practitioners Competence Assurance Act 2003 came into force in New Zealand on the 18th September 2004 (New Zealand legislation, 2003). The establishment of the act was propelled following consultation and general acceptance of the need for regulation of health practitioners, where there is a risk of harm to the public. Therefore the principal purpose of the Act is: “to protect the health and safety of members of the public by providing for mechanisms to ensure that health practitioners are competent and fit to practice their professions” (New Zealand legislation, 2003). The framework and operation of this Act in achieving its intent to protect the public is currently due for review as set out in the terms of reference. This final report is expected to be presented to the Health Minister by the 31st December 2008.

New Zealand Advanced Paramedics and Registration

It could be believed that Advanced Paramedics would be considered professional ‘health practitioners’ and should be included emphatically within the stated term. Pre-hospital emergency care is considered to be provided for at the highest level by Advanced Paramedics. They are able to initiate invasive life-preserving measures, with adherence to documented procedures (National Clinical Advisory Group, 2005). An authority to practice is governed by regional and national medical directors.

Professional registration serves to protect the public, not the professional – it places the professional in jeopardy of losing their right to practice. Ambulance Officers within this country do not practice with legislative standards, under the constraints of professional registration, as currently it does not exist. According to the HPCAA (2003) only those professions listed within the scope of the Act are accountable to the terms of reference. When a complaint is presented to the Health and Disability Commission regarding the service delivery of Ambulance Officers professionalism or delivery of appropriate and timely care, then this is scrutinised under the Health and Disability Act (New Zealand legislation, 1994). Measurement of safe and effective care is also benchmarked utilising the code of health and disability services consumer rights (New Zealand legislation, 1996).
New Zealand Nursing Registration and Regulation

As a comparison to Advanced Paramedics, nurses and the newly endorsed Nurse Practitioners (Ministry of Health, 2002) in New Zealand are mandated by statute, controlled by regulation and are monitored by the health sector. Their independent professional body clearly states:

“As the statutory authority, the Nursing Council of New Zealand governs the practice of nurses. The Council sets and monitors standards in the interests of the public and the profession” (New Zealand Nursing Council, 2007).

In September 2004 the legislation governing the Council changed from the Nurses Act 1977 (New Zealand legislation, 1977) to the HPCAA 2003.

United Kingdom Advanced Paramedics Registration

Trust, Assurance and Safety are three components identified in a report presented to the United Kingdom Parliament by Secretary of State for Health. The document discusses the regulation of health professionals in the 21st Century (Hewitt, 2007). The foreword written by The Right. Honorary Patricia Hewitt (Secretary of State for Health) states that: “For any consideration of the regulation of health professionals, the preservation of that trust has to be the starting point. Professional regulation must create a framework that maintains the justified confidence of patients in those who care for them as the bedrock of safe and effective clinical practice and the foundation for effective relationships between patients and health professionals”.

Equivalent Paramedic counterparts in the United Kingdom have held registration since 2003 (Ball, 2004), and are regulated under an independent United Kingdom wide health regulator known as the Health Professions Council. The Health Professions Council sets standards of professional training, performance and conduct for thirteen professions which is inclusive of the United Kingdom Paramedic qualification (British Paramedic Association, 2006). The council was created through legislation known as the Health Professions Order (Crown legislation, 2001). Standards of Proficiency specific to the United Kingdoms Paramedics have been created and published. There are generic elements which relate to the thirteen professions regulated which all registrants must meet, and profession-specific elements specific to the individual profession regulated (Health Professions Council, 2003).
Ambulance New Zealand Progression of Registration

Ambulance New Zealand was established in 2002. This is the governing body for all Ambulance Officers throughout New Zealand. The ideals that oversee further development of standards, provide minimum levels of service, and safe codes of practice, have been sought after to establish registration and accreditation within the New Zealand emergency ambulance services over the past three decades. This has yet to come into practice. In the interim, the ambulance sector holds some accountability through documented service specification standards which have just recently been sent out for Stakeholder consultation and review (Standards New Zealand, 2006). The NZNO has provided their interpretation to the draft standards following wider consultation and have outlined concerns that the standards as written are mirroring regulation of health professionals by the HPCAA (2003), which is potentially misleading to the public. They also have voiced non-support of the term ‘Paramedic Practitioner’ given that there has been no national debate on this role with relevant Stakeholders. Title confusion was also raised as other similar titles such as General Practitioner and Nurse Practitioner are regulated under the HPCAA (2003), which may supply assumption that a potential ‘Paramedic Practitioner’ or ECP would also be regulated (NZNO, 2007).

Registration is certainly being considered. A comprehensive discussion document was presented in September 1999 with a purpose of seeking initial industry feedback in relation to the entirety of registration (New Zealand Ambulance Education Council, 1999). A second paper was published in the Journal of Emergency Primary Health Care (New Zealand Ambulance, 2004). The purpose of this discussion paper was to provide a basis for consideration by funders, service providers and staff, of the implications for the sector of the HPCAA (2003). The report states that before Ambulance Officers can be discussed as being recognised as health practitioners, it is important to identify the perceptions and realities of ambulance work.

The perception of ambulance services in New Zealand is that they:

- Are subject to some form of legislation or regulation that prescribes their role and function, how they are organised and how they are funded.
- Are staffed by highly trained and qualified Paramedics who can handle any health related emergency.
- Are fully funded as an emergency service.
- Raise funds from the public for their non-ambulance activities.
- Are associated with ‘good works’ in the community (New Zealand Ambulance, 2004).

In reality ambulance services in New Zealand are:
- Not mandated by legislation.
- Staffed mainly by non-Paramedics [especially in rural areas].
- In 2004, were staffed by approximately 275 Paramedics nationwide, a large proportion of whom are based in the metropolitan areas.
- Staffed by a substantial volunteer workforce.
- Need to fundraise to fully fund the ambulance service they provide to the community.
- Associated with ‘good works’ in the community, for which they enjoy a high level of respect and confidence (New Zealand Ambulance, 2004).

Prospective establishment of professional registration for New Zealand Ambulance Officers is 2009 (D. Waters, personal communication August 20, 2007). Gaining an understanding of Advanced Paramedics’ thoughts on professional registration, and how they are protected was included as part of the postal questionnaire conducted in this research. In conjunction, a risk analysis question was included, which examined the frequency of witnessed poor treatment by any level of Ambulance Officer. Professional registration was also included as an important issue within the Stakeholder interviews.
**Christchurch ECP Response Project**

A study conducted by Christchurch St John in New Zealand is relevant to the research because it examined the potential introduction of ECPs in that region.

Christchurch St John in partnership with Pegasus Health and the Canterbury District Health Board have been holding regular meetings since 2005 and have conducted a gap analysis looking specifically at piloting an ECP response within the Christchurch region. A meeting with Craig Woodham (St John Event and Planning Manager for Northern Region South Island) and Paul Vinters (General management trainee for the NHS in the UK) was arranged. Paul has written a detailed report into the Canterbury initiative detailing the proposed model, outlining the benefits and risks involved in implementing this concept (Vinters, 2006). Access to the report and background to the Christchurch ECP response project was obtained from the meeting above.

Thorough work had already been conducted into offering an alternative model of care and transport to the Emergency Department, through extending appropriate care into the community. One detailed report conducted by Abernethy, Haines, Than, Galletly & McGeoch (2005) examined outcomes obtained through retrospective clinical audit and prospective observation of ambulance responses. This study was conducted in response to an ACC initiative, with the aim of understanding whom the service would benefit, the nature of the care pathway and any health system implications.

The research involved collecting and examining clinical notes from St John, Christchurch emergency department and Christchurch Hospital on a retrospective, consecutive group of patients. Patients were selected using a ‘block of time’ in one specific random weekday and compared to a second random weekend day. Presenting medical conditions of each of the random patients was reviewed, treatment options were discussed, and predictions were made regarding outcomes of the patients, based on a ‘potential’ ECP treating the patient.

Within the retrospective clinical audit part of the study the results show some evidence of clarity in a health provision system that is not obstructed by barriers, and has the cohesion of cross-boundary health professionals who are working together to consider an alternative response provided by ECPs.
The second part of the study was prospective ‘Live’ clinical reporting. A senior nurse and Emergency Department medical consultant each attended one day of ambulance calls in an arranged, dedicated emergency ambulance. The emergency ambulance communication centre staff were briefed on the ideal nature of calls and requested to divert these calls to the dedicated vehicle. The calls were then reviewed to determine the suitability for an ECP response.

Findings that stood out from the prospective observation study were that from the sample of 108 calls made to the emergency ambulance communication centre –33 patients attended were deemed appropriate for an ECP response – therefore avoiding transport to an Emergency Department and that 19 of these patients had a suitable alternative in care offered in the form of a twenty four hour surgery and 7 required the GP to conduct a home visit or alternatively be transported to the GP surgery.

This study also identified implications for ACC, who is considered a major Stakeholder. These implications will be further examined later in this research.

An identified barrier emerging from the study that presents an issue with service delivery is demonstrated by the results from the prospective study. According to Abernethy et al. (2005):

“The process that directs ECP response to the right nature of calls will need to be clinically robust, consistent with the Medical Priority Dispatching System and conditions, and well integrated with established communications centre procedures. In order for the ECP response to have the greatest impact, they will need to manage a large volume of these patients. Benefits from the ECP response are therefore likely to improve over time, once systems and processes are most efficient” (Abernethy et.al. 2005).

The results from Christchurch’s study (Abernethy et al, 2005) have generated trends in the types of conditions that would be relevant for an ECP response and includes the following:

- Stable musculoskeletal injuries
- Simple lacerations
- Seizure, where the patient has stopped fitting
- Vomiting and nausea
- Collapse, where the patient is beginning to recover
- Shortness of breath
- Gastrointestinal
- Simple fractures
- Anxiety/social issues
- Abdominal pain
- Epistaxis
- Minor burns

The Christchurch team has undertaken the service innovation based on an ECP randomised control trial in Sheffield, United Kingdom. Christchurch has also had Julie Perrin visit from Sheffield, in the United Kingdom who was able to supply information on suitable conditions ECPs may ‘see and treat’ (Vinters, 2007). Julie Perrin is a nurse consultant in emergency medicine at the Sheffield Teaching Hospitals Trust, in the United Kingdom. Julie has been involved in researching ECPs within Sheffield, alongside fellow researchers and has published papers available on line (Mason et al, 2007). One particular cluster randomised control trial Julie Perrin was involved in researching included older adults without life threatening conditions, who called for an emergency ambulance. The participants included 3018 patients aged over 60 who called the emergency services, (n=1549 intervention, n=1469 control) and randomly allocated over a 56 period. The aim was to increase the proportion of older adults receiving care in the community and reduce admissions to the Emergency Department. The intervention group involved the Paramedic Practitioner service being activated, whilst the control group (or inactive group) included the standard 999 service. The study found that people in the intervention group were less likely to attend the Emergency Department (95% confidence interval 0.68 to 0.75) or need hospital admission within 28 days (95% confidence interval 0.81 to 0.94). Patients in the intervention group were more likely to report being ‘very satisfied’ than those in the control group (85.5% v 73.8%, P<0.0001). However, the number of patients more likely to have subsequent unplanned contact with secondary care services, such as on-going care in the intervention group increased (31.3% v 17.6%, P<0.13) (Mason et al, 2007). A limitation described in the study was that the research was only conducted in a large urban area of the United Kingdom, therefore other health communities should be cautious with generalisation of the results.
Potential Benefits of Emergency Care Practitioners

Part of the vision in introducing ECPs into the United Kingdom health system was to reduce the number of Emergency Department attendances (Department of Health, 2005). Emergency Department overcrowding has been identified as a major issue worldwide (Ardagh & Richardson, 2004; Fatovich & Hirsch, 2003; Derlet, 2002). Evidence has shown that inappropriate attendances may also contribute to this (Richardson et al, 2006).

Emergency Department Overcrowding

Indications that the New Zealand emergency ambulance services contribute significantly to Emergency Department overcrowding are alluded to briefly, but are not acutely highlighted as a significant contributing factor in Ardagh and Richardson’s (2004) report published in the New Zealand Medical Journal, who state “that issues of Emergency Department overcrowding, and the associated phenomena of ambulance diversion and hospital bypass, have been recognised in the literature since the late 1980s”. Internationally emergency ambulance services have ‘assisted’ Emergency Departments in managing the increased patient capacity placed on them.

A prospective observational study by Fatovich & Hirsch (2003) conducted at the Royal Perth Hospital states that “the only control that an Emergency Department has over patient inflow is ambulance attendance, achieved by effecting ambulance bypass. 42% of patient attendances at the Royal Perth hospital arrived by ambulance”. The study was conducted between July 1999 and June 2001. The results show that there were 141 episodes of ambulance bypass during the study period, and that the episodes attributable to ‘entry block’ were typically preceded by a presentation rate of greater than 10 patients per hour for greater than 2 hours (95% confidence interval 4.3 to 8.5). The bigger Emergency Departments can opt for respite, by diverting ambulances over a specified time period to alternative Emergency Departments. Ambulance personnel being able to have partial control in decreasing patient numbers attending the Emergency Department is seen as one effective mechanism to reduce the immediate problem according to the conclusion of the study. Within New Zealand this is unlikely to be a realistic option. Alternative choices for bypass tend not to exist since New Zealand population densities are widely spread offering limited options for emergency care.
Unfortunately urban and rural based emergency ambulances are somewhat limited in some areas as to where a patient could be ‘appropriately’ transported to. After hours GP services are considered accessible and effective, but concerns have been raised about resilience (Ministry of Health, 2005). The factors that are being explored under the term resilience by the after hours primary health care working party include long term sustainability, being able to recruit and retain a sufficient and competent workforce, and capability and efficiency of resources to achieve the best outcomes for the least cost.

Twenty four hour Accident and Medical clinics do not exist within these areas, so the Emergency Department is often the only option left available. This could be considered frustrating at times for health care workers and from the perspective that this may not be the best option for the patient or the receiving Emergency Department when approaching the situation from the Roadside to Bedside recommendations. (Ministry of Health, 1999).

**Current media issue**

Attendances at New Zealand Emergency Departments have been forced into the media very recently with ambulances being used as make-shift emergency rooms, holding those patients deemed to be ‘less serious’ as there was no other suitable facility available, or staff to care for them. Ambulance officers were asked to assist in monitoring these patients within the confinement of their ambulances until space became available in the Emergency Department, or the ambulance vehicle was required to attend an emergency situation (NZPA, 2007). This is not an ideal situation for everyone concerned with the hospital staff stretched, the patients and families less than satisfied, and ambulance staff assisting as best they could but waiting in readiness to be able to respond expeditiously to the next emergency.

**Accident Compensation Corporation Funding for the Ambulance Sector**

The emergency ambulance services are funded by way of ‘fee for service’ for accidents by the ACC. Presently the emergency ambulance services are able to make a claim for costs if the patient is transported to a registered ACC provider facility for treatment. For those people not transported that have suffered injury, the emergency ambulance services are unable to claim in the same way than as if the patient was transported. There is apparently a ‘factor of no transport’ incorporated into the fee for service (B. Nielsen, personal communication, April 15, 2007).
As discussed earlier, Christchurch St John has conducted research into establishing an ECP Response (Abernethy et al, 2005). The final outcome report from the clinical process audit state the results demonstrate clear benefits from an ECP service for a number of parties, one of which is ACC. They conclude that ACC will develop:

- An increased understanding of accident related Emergency Department presentations.
- There may be a reduced number of fully crewed ambulance transports to Emergency Departments with those patients alternatively assessed receiving treatment at scene, or transport to a GP or an alternative service provider, and/or GP home visits.
- ACC need to consider and respond with funding an amount per ECP dispatch and/or transport.
- An ECP response may require the introduction of “see and treat” service for accidents (Department of Health, 2005).
- Current non-transported patients attended to by an ambulance, will often present a relevant condition suitable for an ECP response. Again, funding principles for ACC need to consider that non-funded cases will be receiving this service.
- ACC will in conjunction with the MoH need to jointly review contracts for service provision, to ensure ECP activity is not in breach of present arrangements (Abernethy et al, 2005).
Inappropriate Attendances

A contributing aspect towards overcrowding in Emergency Departments has been discussed by Richardson, Ardagh and Hider (2006). They have approached the issue specifically looking at the defining term and criteria surrounding ‘inappropriate attendance’. Richardson et al (2006) conducted an exploratory survey of health professionals involved with the referral, assessment, transport and treatment of patients presenting to Christchurch Emergency Department. The methods included a purposive sample of health professionals of which 210 survey forms were distributed with a 120/210 (57%) return rate. A limitation in this study could be the low return rate and the non respondents’ views which could potentially bias the results. The sampling could also be considered biased as the survey was disseminated to only the largest GP contracting organisation within Christchurch, which is not representative of all Christchurch General Practitioners who refer patients to the Christchurch Emergency Department, who may have a varied opinions. Other opinions were sought from medical and nursing staff working in the Emergency Department, ambulance staff and hospital managers. The survey itself involved using a three point scale response (agree, unsure, disagree) with scenarios requiring an indication of patients presenting to the Emergency Department were appropriate or not. There was also a single free text question included asking the respondents to define the concept of an ‘inappropriate Emergency Department attender’. The results of this were categorised by the professional group responding and within each group subject to themetatic analysis. The result showed a significant difference in the attitudes and perceptions of the health professionals surveyed, and the outcome resulted in no clear consensus regarding the concept of ‘appropriateness’. Future research involving the Delphi techniques is planned given the study has not given enough evidence to support a consensus definition of appropriateness.

The term in context is also heavily debated. Every New Zealander has the right to access affordable and appropriate healthcare according to the Primary Health Care Strategy (Ministry of Health, 2001) – although is it perhaps the service being accessed, which is not appropriate to meet the needs of an individual? This is also referred to within the Primary Health Care Strategy (King, 2001). The strategy identifies barriers such as “where the service is delivered, how much the services cost, whether the service is right for the patient, and whether they know about them” (King, 2001).
A Canadian Study looking at non urgent presentations to Emergency Departments discussed frustrations for patients who perceive their problem to be urgent, and then become frustrated with prolonged waits, which can then escalate into negative interactions with Emergency Department staff. Some Emergency Department staff were demoralised and believed they were providing non-urgent care that is available elsewhere, therefore reducing Emergency Department productivity (Field & Lantz, 2006).

Looking at this concept purely as an ambulance issue highlights the importance in provision of ‘appropriate’ care and the disposition of patients to the ‘right place’. Society expects Advanced Paramedics to have excellent assessment skills, and the ability to make safe, autonomous decisions regarding patient care and transport. Discussion by Field and Lantz (2006) was related to establishing alternative sources for non-urgent care, and developing enhanced access to services such as diagnostic imaging, which could potentially reduce the number of non-urgent Emergency Department visits. Many patients who used the Emergency Department as their primary care facility, held the perception that they would be seen faster, and have less waiting times according to one study by Rajpar, Smith and Cooke (2000). No research was found on whether patient’s perceptions included that the emergency ambulance services made their healthcare experience more expedient.
Decline in rural health practitioners

In August of 2005 concern with the emergent shortage of rural general practitioners was presented at the Education and Research in Rural Health Conference (Reid, 2006). The Minister of Health, the Honourable Peter Hodgson was present and was able to contribute his thoughts in the format of a question and answer session. There seems to be confusion in what the Minister was quoted as saying. Upon investigation his press secretary has been able to confirm the quote in his report as:

“While I am not convinced there is a 'crisis' in the rural health workforce nor am I complacent and I can assure you this Government will maintain its support for the recruitment and retention of rural health practitioners”.


James Reid has quoted the Minister as stating that “there is no shortage of general practitioners in rural areas in this country” (Reid, 2006). Whatever was said, the issue has been highlighted. Being proactive in future innovations and developments is the way to improve health inequalities within this challenging area. These inequalities are measured against the standards of similar economies around the world, as reported in a discussion document tilted “The future shape of primary health care” (Ministry of Health, 2000). The concerns were disparities in health status between different groups (in New Zealand Maori and non-Maori), high levels of preventable illness, high levels of avoidable hospital admissions and barriers for some people in accessing primary health care services. The Associate Health Minister Damien O'Connor summarised the New Zealand governments’ priorities and ventures at the May 2007 Rural Health Symposium:

“Annually, one hundred million dollars is dedicated from the government to support rural health services. Of this, eighty million compensates district health boards for the costs of providing hospital and community health care services, and the balance of twenty million supports rural primary health care services” (O'Connor, 2007).
New Zealand Government funding currently available in the health sector

O’Connor (2007) identifies in his report that rural doctors can access the rural bonus – about four million dollars annually - that is paid to individual GPs. There is also accessible rural premium funding - amounting to about eleven million dollars annually – targeted monies for roster and workforce retention and recruitment funding. The government has clearly cited future areas of need and strategies to enhance access to health services to improve overall health outcomes and diminish inequalities in these isolated rural communities (O’Conner, 2007).

Developing a specific ECP pathway requires considerable thought and detail. The assessment phase undertaken by the ECP is far more comprehensive and detailed, purely based on the British approach (Department of Health, 2007). New Zealand’s diverse cultural anomalies would need to be considered and respected. This would especially become important when referring patients to other providers, an example being a Maori midwife or Maori health provider. Adding a cultural component to the suggested pathway would be consistent with the principles of ‘partnership, participation and protection’ within the realms of the Treaty of Waitangi (Nursing Midwifery Advisory Committee, 2002). This would be appropriate given that Maori health issues are considered a national and government priority (Maori Health Strategy, 2002).

Australian Research

In 2006 O’Meara et al. researched and published “Moving beyond emergency response” in Australia. The aim of the research was to identify Australian and international trends in the evolving role of Paramedics and through studying existing innovations in rural Australia to identify a rural expand scope of practice for rural Paramedics.

Research was conducted using a multi-state case study approach and included New South Wales, South Australia, Victoria and Tasmania. These four states shared key characteristics such as their rural environment, relatively small populations, their location within the health system and emergency management systems and a requirement that they adapt and change in response to changing needs and expectations as generated and identified by government.
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The in-depth nature of the case study collection allowed for inclusion of all relevant interprofessional interactions and important cultural factors. Case studies were used which provided qualitative data, and including multiple case sampling increased confidence in the findings. Discussion provided peer reviewed research including international perspectives on alternative changes to the traditional Paramedic. The findings from the study confirm that Paramedics are increasingly becoming the first line primary health care providers in many small rural communities as other health care services contract through rationalisation and centralisation. This self evolving role has generated a flexible extended scope of practice in response to local rural challenges.

**New Zealand Rural community example**

An Advanced Paramedic from a New Zealand urban/rural region provides an example of an isolated rural community, with an ‘evolving’ ambulance health care model.

Gisborne is situated on the East Coast of the North Island. Geographically this region is isolated by road to any tertiary hospital by at least three hours. The geographic area retrieved from Travel planner 2007 is shown in (Figure 5). St John in partnership with ACC is involved in PRIME (Primary Response in Medical Emergencies). The region has a PRIME team based at Tolaga Bay which is situated 55 km north of Gisborne, comprising of one rural health practitioner and rural health nurses. They are first response to any ambulance communication centre activated medical emergencies or accidents with secondary back up provided by Gisborne road ambulance or Gisborne Lion Foundation Rescue Helicopter. Relationships with these colleagues continue to strengthen as regular monthly training updates are provided by Gisborne Advanced Paramedics.

Approximately 100 km north of Gisborne is Te Puia Springs Hospital. One Ambulance Officer is employed at Te Puia Springs, Monday to Friday. Support is available from an Upskilled Paramedic, 30km North of Te Puia Springs at Ruatoria (Figure 5). St John, as the emergency ambulance service provider for this region, does contribute to attempt to bridge inequalities in healthcare rurally, with funding secured through a MoH initiative to provide free ambulance care on the East Coast.
Healthline was first piloted in four regions nationally with Gisborne/East Coast being included. This is a service also supported significantly with input from St John. Healthline’s most recent quarterly statistics have shown that the Gisborne/East Coast (Tairawhiti) Region is the highest user of this service per head of population (McKesson & St John, 2007) and generally are consistently recorded as a high user DHB (B. Parkes, personal communication, August 16, 2007).

FIGURE 5. Gisborne East Coast Map

Opportunities to provide difference and extension to the usual Ambulance Officer role have already been unofficially established within this region. The Ambulance Officers based at Te Puia assist with care within the hospital itself. In the future they may also be able to assist with the care given by the Mobile Surgical Services (MSS) bus (S. Clapperton, personal communication, May 20, 2007).
This not only assists as a functional teamwork opportunity but can provide a useful skill maintenance opportunity in a safe learning environment. Further around the top of the Coast is Te Kaha, another geographically rurally isolated area that relies heavily on rural ambulance volunteers. There is difficulty in recruiting rural GPs to the area even to provide holiday relief for the permanent rural health practitioner over Christmas. St John, the provider to that area and in conjunction with PRIME have employed an Advanced Paramedic over a recent Christmas period to maintain health professional coverage when locum doctors could not be appointed in that area.
Primary Health Care Services and After-Hours Care

“You can’t control the direction of the wind but you can adjust the sails” (Fr. Emmerich Vogt, n.d), places the next area of discussion in retrospect. Change is a guaranteed paradigm within the health setting, and workforce changes now impact on after-hour’s care according to the report written by the after hours primary health care working party (Ministry of Health, 2005). These include different expectations of work/life balance to that of health professionals in the past. Changes in employment arrangements are seen as another factor according to the report. For decades GPs have proudly been the cornerstone, or rather backbone to our community’s ‘steadfast face’ to primary healthcare. Historically in general practice the principal was the employer and in order to offer cost effective care, after-hours care was conducted by the principal, rather than paying another provider. Nurses also now have expanded roles and there are recognised complex funding issues (Ministry of Health, 2005).

These new pressures have been clearly identified and voiced. They are continuously evolving and as such have necessitated a Ministry of Health formulated working party who have since published a working document, titled ‘Towards accessible and resilient after hours primary health care’ (After-Hours Primary Health Care Working Party, 2005). Upon reading the executive summary in this document it was interesting to note a recommendation to the MoH in establishing an expert sector group to develop a disposition tool. This disposition tool has a specific priority in determining which service, that being primary health care or the Emergency Department – patients should most appropriately attend for treatment. It also signifies that the expert sector group should be drawn from a comprehensive set of organisations, including the ambulance sector.

The ambulance sector is mentioned sparsely throughout the document and most directly in relationship to rural communities where reliance is based heavily on volunteers as first response and often in conjunction with a PRIME practitioner if available. The working party states “that rural ambulance volunteers are the backbone of the ambulance service acting in first response, but has identified a rural issue impacting on resilience in regard to the maximum level of training these ambulance volunteers have and their availability” (Ministry of Health, 2005).
The expert advisory group has been formulated and the consultation tool has been sent out for consultation (Expert Advisory Group, 2007). Investigation and conversation with a member of the Expert Advisory group provided further detail about the consultation tool. It was confirmed that there was no ambulance representation within the group, and discussion at one of those meetings had identified deficiencies in some representation. One may also have to question if the development of such a tool was going to make such a difference long term to the presentations Emergency Departments receive?

**ECPs working in out of hour’s primary health care services**

ECPs have been employed in the United Kingdom as the mobile response to attend patients at home for primary care after-hours services. According to the document titled ‘*Measuring the benefits of the ECP*’ (Skills for Health, 2007). ECPs have been able to act as the eyes and ear of the out of hours doctors, can deliver care and advice and obtain prescription issued by the doctor in charge. ECPs are able to work under the supervision of doctors as one of the first points of all contact, including telephone advice, urgent care centre attendees and home visits. The costs involved have also been measured and reported to be considerably below the cost of doctors in this role (£40 per hour compared to estimates of over £150 per hour running costs) (Skills for Health, 2007). Patient satisfaction with ECPs attending has been found to be good in the studies undertaken according to Snooks et al, 2001 (as cited by Skills for Health, 2007), with a benefit of hospital attendance out of hours being reduced (Skills for Health, 2007).
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Potential Barriers of Emergency Care Practitioners identified

In a review of literature the United Kingdom has identified three components to improve the appropriateness of care delivered by the United Kingdom's emergency ambulance service. These modifications have been discussed in comparison to the current New Zealand emergency ambulance services and the current New Zealand Health system infrastructure that may present as potential barriers in establishing ECPs in New Zealand.

Literature review

In a review of the literature Snooks, Dale, Hartley, Sharpe and Halter (2004) have shown that in nine out of ten studies, 30 to 52% percent of ambulance calls did not warrant an emergency ambulance response. People that were left at the scene, but attended by an emergency ambulance were 17% across the United Kingdom (Snooks, et. al, 2002). It has therefore been suggested that it is more appropriate to modify the response from the ambulance service in order to increase the appropriateness of care (Snooks, et. al, 2002). The changes suggested were also likely to reduce attendances at Emergency Departments and included:

- Diversion of non serious 999 (111) calls to a system of nurse advice.
  In comparison to the United Kingdom, this is now occurring in New Zealand in many Emergency Departments and GP services who now allow patients to select Healthline as an option of care when they phone in. Healthline is New Zealand’s equivalent to the United Kingdom's NHS Direct. A research team from Christchurch Emergency Department assessed whether a telephone advice system would decrease the number of presentations. It decreased the workload for Emergency Department nursing staff charged with answering advice calls (Graber, Ardagh, O’Donavon & St George, 2003).

- Ambulance crew to treat people at the scene, then discharge them.
  This is an underlying theme in introducing ECPs within the United Kingdom. In New Zealand a major change such as the ECP concept would require further investigation, and centred on how funding could be adjusted through the current funding providers - ACC and MoH, which has been described by Abernethy et al (2005) in the Christchurch report into an ECP response, for the Christchurch region.
Use of alternative destinations to the Emergency Department.

Alternative and appropriate destinations other than Emergency Departments can be achieved if there are alternatives available. The United Kingdom has minor injury units (MIU) and walk in centres (WIC) – alternatives that currently don’t exist in New Zealand. ECPs assist in the provision of care in the United Kingdom by being part of the primary carers available, within after-hours care (Department of Health, 2004). A major benefit in introducing ECPs in New Zealand could be to reduce the number of attendances to Emergency Departments, which has been reported as overcrowding in Christchurch Emergency Department in New Zealand (Ardagh & Richardson, 2004) and internationally overcrowding is no longer unique to larger teaching hospitals, it is now occurring in smaller urban and rural Emergency Departments (Dertlet, 2002).

Reducing attendance at Emergency Departments was seen as a major benefit in introducing ECPs in the United Kingdom (Department of Health, 2005). Integrating ECPs into the Emergency Department as a clinical placement has also been trialed in international research. An ECP Pilot study in Warwickshire, within the United Kingdom (Adams et al, 2005) allowed ECPs to have rotational placements in both the prehospital and accident and emergency setting, to acquire the necessary experiential learning, training in clinical assessment skills, a level 2 module in autonomous practice and a level 3 module in research methods and statistics. Analysis showed that the ECPs were accepted by the project stakeholders (Accident and Emergency Department and prehospital environment) as helping to achieve better integration and more patient centered emergency and primary care services, as well as expending the training capacity and clinical supervision that could be valuable in establishing the role (Adams et al, 2005). A limitation to this research was that the pilot was foreclosed in August 2003, originally the study was planned to run until June 2004. The research cited urgent political pressure to roll the ECP role out nationally as the reason to shorten the pilot (Adams et al, 2005).
A sustainable Advanced Paramedic workforce
Future workforce capacity sustainability of Advanced Paramedics is a potential issue. It could be argued that concern could be heightened if New Zealand is to maintain a safe level of Advanced Paramedics within the country. Advanced Paramedic positions once so sought after are facing a decline in applicants. This is worrying given the anticipated growth in population and a projected increase in the ageing population (Statistics New Zealand, 2006).

Applicants for New Zealand Advanced Paramedic positions are being sourced internationally (S. Clapperton, personal communication, October 2, 2007). This is not entirely negative as some very good practitioners have been obtained internationally, and have settled well into New Zealand. The priority however, should be in maintaining an adequate New Zealand trained workforce as well. The medical profession as a comparison is continually defending their situation in regard to an adequate and safe workforce. Foreign doctors are over represented in complaints to the Health and Disability commission in relation to breach of patient rights and communication (Chisholm, 2007), and often these doctors are filling jobs that New Zealanders are simply just not applying for - often in isolated, hard-to-staff rural practices, with an unfamiliar working environment and culture, and limited if any supervision (Macdonald, 2007).

The Royal New Zealand College of General Practitioners is so concerned about a future sustainable workforce, that they have published a strategy document specifically to determine and develop criteria for establishing an acceptable and appropriate workforce benchmark. Brabyn & Barnett (as cited in Fretter and Pande, 2006) have also given thought to establishing this benchmark with generation towards a centralised body using a standardised ratio, coordinating a population based formula and including patient demographics. Brabyn and Barrnetts (2004) research was more aimed at the extent to which different areas in New Zealand vary their geographical access to GP’s and analysed spatial access and the variance to differing population groups.
Thought was given to the changing health workforce and included the potential growth of Nurse Practitioners (NP). Greater task sharing and alleviation of part of the GP workload was seen to coincide with the collaboration of NP’s. If consideration of the NP role can be seen to benefit relationships with the GP’s then it is possible that the presentation of a potential ECP role with a broader scope of practice could be a model to consider.

The final comment in the report by Fretter and Pande (2006) perceives the benchmark concept as an imperative fundamental tool and to quote: “Without such a measure there will always be a level of confusion and debate on ‘how many GP’s is enough’ while the access to primary health care and quality of treatment continues to be compromised” (Fretter and Pande, 2006). Perhaps some thought could be transferred to the Advanced Paramedic workforce in the same light as the GPs. Forecasting is a perceptive strategy to support and identify how to increase and retain numbers of staff in a profession, especially when future thought is based on broadening the workforce scope to ECPs. This may not be achievable if the lower levels of ambulance qualifications are not sustained adequately.
Methods

This research is a mixed methods project. Macnee (2004) refers to the term mixed methods as a combination of qualitative and quantitative research methods, whilst DiCenso et al (2005) describe mixed method studies as combining data collection approaches, sometimes both quantitative and qualitative into the study methodology and are commonly used in the study of service delivery and organisation.

According to Borbasi et al (2004) quantitative research is used to describe, explore, explain or predict measurable conditions. The Advanced Paramedic questionnaire was mainly quantitative because it included data collection that was quantifiable, but also allowed for some qualitative responses with open-ended questions. Quantitative study can be further classified into types of study design. Beanland et al (1999) describes the broadest as descriptive or exploratory research. The purpose is to allow the researcher to search for accurate information about the characteristics of particular subjects, groups or situations, as well as a particular phenomenon of which little may be known. ECPs are not a phenomenon currently in New Zealand, information has been collected by an exploratory questionnaire to determine feasibility based on the Advanced Paramedics respondents answers to the questions. Advantages of this type of research are that a great deal of information can be obtained from a large population in an economical manner, and that survey research is deemed to be accurate (Beanland et al, 1999). The disadvantage in using a questionnaire is that the information collected can be superficial with the breadth rather than depth of information being emphasised. Another is that conducting a survey requires the researcher to be knowledgeable in a variety of research areas such as sampling techniques, questionnaire construction, interviewing and data analysis to produce a reliable and valid study (Beanland et al, 1999).

Qualitative research is seen to be used by researchers to seek a deeper truth according to Greenhalgh (2001). Researchers using qualitative methods aim to study things in their natural setting, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them. The Stakeholder interview was mainly qualitative in design with open ended questions allowing for gathering of participants knowledge, beliefs, feelings and perceptions.
The researcher considered that a qualitative study design could assist the participants to provide more data, taking into consideration that little may be known about ECPs. A disadvantage of qualitative research is the researcher’s perspective which may influence the study and is described by Greenhalgh (2001) as observer bias. Particularly observer bias is related to a research method identified as ‘participant observation’, where the researcher occupies a role or part in the setting in addition to observing. Beanland (1999) identifies that it is the researcher’s responsibility to recognise personal biases and set them aside.

Dicenso et al. (2005) refers to the different knowledge contributions that both quantitative and qualitative data explore. The sequential use of both methods in a study has an additive benefit, with the two methods contributing to greater knowledge gained about a phenomenon. This has been identified to have occurred with in a single study. For example Friedemann and Smith (as cited in Discenso, 2005) tested a screening tool for family effectiveness by asking 30 participants to complete a questionnaire, explain their thought processes for their response to each question, then participate in a semi structured interview.

**Advanced Paramedics**

A formal semi-structured questionnaire was posted to all of those identified and designated in New Zealand as:

1. *Advanced Paramedics* (as employed by St John).
2. *Intensive Care Paramedics* (as employed by Wellington Free Ambulance).
3. *Advanced Life Support (ALS) Paramedics* (as employed by the Wairarapa and Taranaki District Health Boards).

**Questionnaire design**

Semi-structured questions are considered an example of data collection using specific planned questions (Macnee, 2004). Respondents to the questionnaire were asked mainly closed-ended questions (Polit et al, 2001) requiring dichotomous response answers, but were also asked questions that measured a specified variable. This was done using a Likert-type response scale (Macnee, 2004). This scale asks for a rating of the item on a continuum that is anchored at either end by opposite responses. Fixed response questions have the advantage of simplifying the respondent’s task and the researchers analysis, the disadvantage is that important information may be missed according to Beanland (1999). Within the Likert Type response
question the middle option can be seen as a neutral category. A disadvantage to this type of question is that the neutral response can be the most frequent response making it difficult to interpret (Beanland, 1999). There was opportunity for the Advanced Paramedics to provide comments to some of the closed-ended questions. There were also free text questions included within the questionnaire. According to Beanland (1999) open ended or free text questions are beneficial when the researcher wants the participant to respond in their own words, or the researcher does not know all of the possible alternative responses. A further section at the end of the questionnaire asked for further comments.

A rank-order question was also included where the respondents were asked to rank an ECP setting in New Zealand in order of preference (Polit et al, 2001). The purpose of the semi-structured questionnaire was to collect information about Advanced Paramedics demographics, education, experience, and their opinions as to the ECP concept. Follow-up telephone calls were included as a method to encourage an increase in the questionnaire returns. This was done in September 2007 and allowed for a further mail out to those participants who agreed to another copy of the questionnaire being sent if the first was not completed. The questionnaire is tabled as (appendix Two). According to Beanland (1999) telephone interviews may offer advantages over a questionnaire. If questions are misunderstood this provides the interviewer a chance to clarify and observe the level of the respondents understanding and cooperation.

**Process of questionnaire mail out**

1. St John and the Wairarapa emergency ambulance services were able to supply the researcher with regional databases with contact details. The questionnaires were then sent by the researcher.

2. Wellington Free Ambulance and the Taranaki based service requested that it was more appropriate for the researcher to send the required number of questionnaires and that the mail out would be done internally. Wellington Free Ambulance was sent 20 questionnaires and Taranaki were sent 10.

3. The only other group that was considered, and questionnaires sent to, was the Auckland Helicopter Rescue Trust who employs their own Advanced Paramedics, but also had St John Advanced Paramedics who were seconded to work with this team. Internal distribution of questionnaires was also requested of this group. Six questionnaires were requested by them.
A stamped-addressed envelope was included in all of the questionnaires to facilitate a response. A specific return date was requested in the questionnaire and an incentive to complete the questionnaire was included. Participants who sent back the questionnaire were placed into a draw for two bottles of wine.

**Stakeholders**

A naturalistic inquiry method has been described by Polit et al (2001) as a general qualitative method. Its function supports researchers to be clear about their biases, presuppositions, and interpretations so that the research participants (Stakeholders) can decide their own views. Naturalistic approaches to research are consistent with this because they emphasise understanding people in a holistic way, taking into account their subjective experiences and perspectives with other people and the natural environment.

The Stakeholder organisations were chosen to give an opinion based from the experiences and knowledge of ambulance operations from the perspective of the environment and culture that they work within.

According to DiCenso (2005) data collection in qualitative research is commonly an interview. Questionnaires are usually inappropriate in qualitative research because they presuppose too much of what respondents may say and do not allow respondents to relate experiences in their own terms (DiCenso, 2005). Stakeholder views were analysed and compared searching for themes, and were transcribed directly. The Stakeholder interview consists of mainly open-ended questions and is tabled as *Appendix Two*. Open-ended questions were appropriate to allow for the Stakeholders to reflect their opinion precisely and fully, which is considered to be a benefit for this type of interview (Polit et al 2001).

One rank-order question was also included, as were three dichotomous questions (Polit et al, 2001). Stakeholder interview questions were firstly sent by post. Stakeholders were then able to become familiar with the questions, and could disseminate the interview material to other relevant people within the organisation. After familiarisation with the material, Stakeholder groups were given three options for subsequent interview completion; a) electronic, b) face-to-face or c) teleconference. Data was also collated using a tape recorder, which allowed for later transcription.
Stakeholder Organisations and Respondents

1. Ambulance New Zealand (Chief Executive Officer)
2. Ministry of Health (Senior Advisor Primary Health Care Delivery)
3. Accident Compensation Corporation
4. St John (Regional Operations Managers, Medical Directors)
5. Wellington Free Ambulance (General Manager)
6. District Health Boards operating emergency ambulance services
   (Ambulance Senior Management)
7. District Health Boards/Emergency Departments
   (Emergency Department Doctors and Medical Directors,
   Emergency Nurse Unit Managers)
8. Maori Health Provider (Rural Maori Health Provider)
9. GP Liaison Committee (General Practitioners)
10. Auckland University of Technology (Senior Lecturer)
11. New Zealand Nurses Organisation
    (Professional Nurse Advisor and College of Emergency Nurses NZ Representative)

Ethical approval

This project has been reviewed and approved by the Academic Ethics Committee of the University of Otago. Ethics documentation was posted with each questionnaire and issued prior to each interview. A consent form was included in the information sent out, which the respondents were asked to sign and was kept as a record on file. This is included as Appendix One.
Maori Consultation

As a population group, Maori have on average the poorest health status of any ethnic group in New Zealand according to the Maori Health Strategy (2002). The Government and the Ministry of Health have made it a key priority to reduce health inequalities that affect Maori. If Maori are to live longer, have healthier lives, and fulfil their potential to participate in New Zealand society, then the factors that cause inequalities in health need to be addressed (Ministry of Health, 2002). Consideration was given to Maori consultation. This was following presentation of the intention of the research to the Ngai Tahu Research Consultation Committee. This committee identified Maori as possibly being referred to providers by ECPs, and suggested consideration be given to involving a Maori researcher in the research team. They also suggested dissemination of the research findings to relevant Maori health organisations and would value a copy of the findings. Dr Paratene Ngata is a well respected and distinguished rural Maori Health Practitioner from Ngati Porou Hauora located at Tolaga Bay on the East Coast of the North Island. Dr Ngata has participated in the research as a Stakeholder, from the perspective of a Maori Health provider, and has been available to provide advice when required. He is also a respected colleague and part of the Primary Response in Medical Emergencies (P.R.I.M.E) team based at Tolaga Bay, North of Gisborne.
Results

The Advanced Paramedic Questionnaire

There are 203 Advanced Paramedics practicing across the four entities of New Zealand emergency ambulance services according to the June 2007 figures, from Ambulance New Zealand (D. Waters, personal communication, August 21, 2007). Two hundred and three questionnaires were initially posted throughout New Zealand with an inclusion criterion of Ambulance Officers who held an Advanced Paramedic qualification, and who were employed by one of the four New Zealand emergency ambulance services.

Return response

One hundred and two were returned initially, which equates to 50% from the 203 sent. A reminder telephone call to those in St John and Wairarapa emergency ambulance organisations prompted a further 14 responses, a further 7%. The total number of returned questionnaires therefore was 116/203, a 57% response.

Eighty seven of the questionnaires were not returned which is 43% of the 203 total.

Over and above the 102 returned by post, three questionnaires were sent back to the researcher as the address the questionnaires were sent to was incorrect. One was not able to be included in the valid returns, as the participant had not yet obtained the Advanced Paramedic qualification. Four of the questionnaires were classed as invalid and not included in the returns.

<table>
<thead>
<tr>
<th>Questionnaire return breakdown from 203 Advanced Paramedics</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaires returned</td>
<td>102</td>
<td>50%</td>
</tr>
<tr>
<td>Telephone follow-up</td>
<td>14</td>
<td>7%</td>
</tr>
<tr>
<td>Outstanding (not returned)</td>
<td>87</td>
<td>43%</td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1.0 Questionnaire return breakdown
Demographic information – New Zealand Advanced Paramedics

Results from questionnaire

The format has followed the delivery format of the Advanced Paramedic questionnaire (Appendix One).

<table>
<thead>
<tr>
<th>Gender of Advanced Paramedic respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>93/116 (80%)</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>23/116 (20%)</td>
</tr>
</tbody>
</table>

Table 1.1 Gender

<table>
<thead>
<tr>
<th>Age of Advanced Paramedic respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-24</td>
</tr>
<tr>
<td>7/116 (6%)</td>
</tr>
<tr>
<td>25-29</td>
</tr>
<tr>
<td>19/116 (18%)</td>
</tr>
<tr>
<td>30-34</td>
</tr>
<tr>
<td>37/116 (33%)</td>
</tr>
<tr>
<td>35-39</td>
</tr>
<tr>
<td>28/116 (21%)</td>
</tr>
<tr>
<td>40-44</td>
</tr>
<tr>
<td>14/116 (12%)</td>
</tr>
<tr>
<td>45-49</td>
</tr>
<tr>
<td>8/116 (7%)</td>
</tr>
<tr>
<td>50-54</td>
</tr>
<tr>
<td>3/116 (3%)</td>
</tr>
<tr>
<td>55-59</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>60-64</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>65-70</td>
</tr>
<tr>
<td>0%</td>
</tr>
</tbody>
</table>

Table 1.2 Age

The median age of all Advanced Paramedic respondents is 42 years.

The range of age of the respondents is 30 years.

The inter quartile range is 5 years.

<table>
<thead>
<tr>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maori</td>
</tr>
<tr>
<td>1/116 (1%)</td>
</tr>
<tr>
<td>New Zealand European</td>
</tr>
<tr>
<td>95/116 (82%)</td>
</tr>
<tr>
<td>Other European</td>
</tr>
<tr>
<td>16/116 (14%)</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Indian</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Samoan</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Tongan</td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>4/116 (3%)</td>
</tr>
</tbody>
</table>

Table 1.3 Ethnicity

Advanced Paramedics who responded to the questionnaire mainly identified themselves as New Zealand Europeans or Other Europeans. Only one per cent identified themselves as Maori.
The feasibility of establishing Emergency Care Practitioners in New Zealand

Jackie Clapperton

Population base of Advanced Paramedic respondents

<table>
<thead>
<tr>
<th>Metropolitan</th>
<th>Urban and rural</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>32/116</td>
<td>81/116</td>
<td>3/116</td>
</tr>
<tr>
<td>28%</td>
<td>69%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Table 1.4 Population base

Region of work – Advanced Paramedic respondents

<table>
<thead>
<tr>
<th>Northern Auckland</th>
<th>Midland</th>
<th>Central</th>
<th>Taranaki</th>
<th>Wairarapa</th>
<th>Wellington</th>
<th>NRSI</th>
<th>SRSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>26%</td>
<td>18%</td>
<td>16%</td>
<td>3%</td>
<td>2%</td>
<td>7%</td>
<td>21%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Table 1.5 Region of work

This table represents the total of returns represented as a national whole.

Region of work – Advanced Paramedics questionnaires sent out by area of work compared to number and percentage of respondents returned

<table>
<thead>
<tr>
<th>Northern and Auckland Rescue Helicopter Trust</th>
<th>Northern Region</th>
<th>Midland Region</th>
<th>Central Region</th>
<th>Taranaki Region</th>
<th>Wairarapa Region</th>
<th>Wellington Region</th>
<th>NRSI Region</th>
<th>SRSI Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Questionnaires returned by region</td>
<td>31/57</td>
<td>21/25</td>
<td>19/22</td>
<td>3/10</td>
<td>2/5</td>
<td>8/20</td>
<td>24/42</td>
<td>8/22</td>
</tr>
<tr>
<td>Percentage of questionnaires returned by region</td>
<td>54%</td>
<td>84%</td>
<td>86%</td>
<td>30%</td>
<td>40%</td>
<td>40%</td>
<td>57%</td>
<td>36%</td>
</tr>
</tbody>
</table>

Table 1.6 Number of questionnaires sent out compared to number and percentage returned
History of training and years of practice

Results from questionnaire

Years of practice in total as an Ambulance Officer

<table>
<thead>
<tr>
<th>Years of Practice</th>
<th>0-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40-44</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(3%)</td>
<td>(17%)</td>
<td>(32%)</td>
<td>(14%)</td>
<td>(20%)</td>
<td>(10%)</td>
<td>(3%)</td>
<td>(1%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.1  Years of practice as an Ambulance Officer

The respondent’s median years of practice in total as an Ambulance Officer is 17 years.
The range is 35 years, and the interquartile range is 10 years.

Years of practice in total as an Advanced Paramedic

<table>
<thead>
<tr>
<th>Years of Practice</th>
<th>0-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>34-39</th>
<th>40-44</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/116</td>
<td>30/116</td>
<td>31/116</td>
<td>19/116</td>
<td>11/116</td>
<td>5/116</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>(17%)</td>
<td>(26%)</td>
<td>(28%)</td>
<td>(16%)</td>
<td>(11%)</td>
<td>(4%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2  Years of practice as an Advanced Paramedic

The respondent’s median years of practice as an Advanced Paramedic is 12 years.
The range is 25 years, and the interquartile range is 10 years.

Who was the main funder of your Advanced Paramedic training?

<table>
<thead>
<tr>
<th>Funder</th>
<th>Self</th>
<th>Employer</th>
<th>Scholarship</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>21/116</td>
<td>93/116</td>
<td>1/116</td>
<td>1/116</td>
<td></td>
</tr>
<tr>
<td>(18%)</td>
<td>(80%)</td>
<td>(1%)</td>
<td>(1%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.3  Funder of Advanced Paramedic training

Have you done any tertiary level study since becoming an Advanced Paramedic?

<table>
<thead>
<tr>
<th>Tertiary Level Study</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>77/116</td>
<td>39/116</td>
<td></td>
</tr>
<tr>
<td>(66%)</td>
<td>(34%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.4  Tertiary level training

77/116 (66%) respondents said yes to having undertaken further tertiary study since becoming and Advanced Paramedic. (95% confidence interval = 57.02 % to 74.88%)
Which of the following activities have you been involved with over the previous two years?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of respondents involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended work related conferences</td>
<td>66/116 (56.9 %)</td>
</tr>
<tr>
<td>Presented at work related conferences</td>
<td>26/116 (22.4 %)</td>
</tr>
<tr>
<td>Involved in mortality and morbidity reviews</td>
<td>22/116 (18.9 %)</td>
</tr>
<tr>
<td>Attended skills workshops</td>
<td>102/116 (87.9 %)</td>
</tr>
<tr>
<td>Given lectures/tutorials to colleagues/peers</td>
<td>81/116 (69.8 %)</td>
</tr>
<tr>
<td>Mentoring/supervision to colleagues/peers</td>
<td>99/116 (85.3 %)</td>
</tr>
<tr>
<td>Other (Please state)</td>
<td>30/116 (25.8 %)</td>
</tr>
</tbody>
</table>

Table 2.6   Previous two years activities of Advanced Paramedics
**Question 2.7** What further training/courses would you be interested in undertaking?

<table>
<thead>
<tr>
<th>Training</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary level postgraduate courses</td>
<td>40/116</td>
<td>34.4%</td>
</tr>
<tr>
<td>Tertiary level undergraduate courses</td>
<td>20/116</td>
<td>17.2%</td>
</tr>
<tr>
<td>Emergency Care Practitioner</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Advanced Life support course Trauma/Adult/Paediatric/neonate</td>
<td>13/116</td>
<td>18.6%</td>
</tr>
<tr>
<td>Disaster management</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Helicopter/Aviation training/HUET</td>
<td>6/116</td>
<td>5.1%</td>
</tr>
<tr>
<td>PRIME courses</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Advanced clinical assessment</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Rapid sequence induction</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Thrombolysis/12 lead ECG/x-ray reading and interpretation/Vaccinators course</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Teaching/mentoring/leadership</td>
<td>8/116</td>
<td>6.9%</td>
</tr>
<tr>
<td>Mental health/psychology</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Specialised Emergency Rescue Team/USAR/Rope rescue/Driving</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Information technology/Health and Safety/Human resources</td>
<td>4/116</td>
<td>3.4%</td>
</tr>
<tr>
<td>Conferences/Antarctic deployment</td>
<td>4/116</td>
<td>3.4%</td>
</tr>
</tbody>
</table>
Do you have any extended skills or knowledge that you can utilise in your role as an Advanced Paramedic?

<table>
<thead>
<tr>
<th>List of extended skill/knowledge</th>
<th>Number of respondents/Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid sequence induction (RSI)</td>
<td>28/116 (24.1%)</td>
</tr>
<tr>
<td>Thrombolysis</td>
<td>15/116 (12.9 %)</td>
</tr>
<tr>
<td>Specialist Emergency Response Team</td>
<td>16/116 (13.7 %)</td>
</tr>
<tr>
<td>Helicopter response currently</td>
<td>71/116 (61.2 %)</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>13/116 (11.2 %)</td>
</tr>
<tr>
<td>Enrolled Nurse</td>
<td>2/116 (1.7%)</td>
</tr>
<tr>
<td>Others</td>
<td>21/166 (18.1 %)</td>
</tr>
</tbody>
</table>

Table 2.8 Extended skills and knowledge

**Professional Registration**

**Results from questionnaire**

Do you think that New Zealand Advanced Paramedics should be professionally registered?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>113/116 (97%)</td>
<td>3/116 (3%)</td>
</tr>
</tbody>
</table>

Table 3.0 Professional registration

(95% confidence interval = 92.6 to 99.4%) for the Advanced Paramedic respondents who said yes to professional registration.

Do you understand the New Zealand Health Professional Competence Assurance Act (2003)?

<table>
<thead>
<tr>
<th>Definitely Yes</th>
<th>Probably yes</th>
<th>Don’t Know</th>
<th>Probably No</th>
<th>Definitely No</th>
</tr>
</thead>
<tbody>
<tr>
<td>28/116 (24%)</td>
<td>48/116 (42%)</td>
<td>8/116 (7%)</td>
<td>20/116 (17%)</td>
<td>12/116 (10%)</td>
</tr>
</tbody>
</table>

Table 3.1 Understanding of the HPCA Act

Advanced Paramedic respondents who said definitely yes to understanding the HPCA Act. (95% confidence interval = 16.6% to 32.9%)
Do you think New Zealand Advanced Paramedics are covered/operate clinically under the Health Practitioner Competence Assurance Act (2003)?

<table>
<thead>
<tr>
<th>Definitely Yes</th>
<th>Probably Yes</th>
<th>Don’t Know</th>
<th>Probably No</th>
<th>Definitely No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/116 (6%)</td>
<td>19/116 (16%)</td>
<td>43/116 (37%)</td>
<td>18/116 (16%)</td>
<td>29/116 (25%)</td>
</tr>
</tbody>
</table>

Table 3.2 Practice regulation
The (95% confidence interval = 17.4% to 33.9%) for those Advanced Paramedic respondents who correctly stated that Advanced Paramedics do not clinically operate under the HPCAA.

**Question 3.3 What do you think the advantages of registration would be for Advanced Paramedics?**

<table>
<thead>
<tr>
<th>Advantages</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question not answered</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Title protection</td>
<td>15/116</td>
<td>12.9%</td>
</tr>
<tr>
<td>Public safety</td>
<td>25/116</td>
<td>21.5%</td>
</tr>
<tr>
<td>Provides statues, rules and regulation, peer review</td>
<td>24/116</td>
<td>20.6%</td>
</tr>
<tr>
<td>Greater emphasis on research, continuing education and evidence based practice</td>
<td>25/116</td>
<td>21.5%</td>
</tr>
<tr>
<td>Ensure Advanced Paramedic is fit to practice</td>
<td>4/116</td>
<td>3.4%</td>
</tr>
<tr>
<td>Transportable recognised qualification nationally and internationally</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
<tr>
<td>Professional body, individual licensing and benchmarking, independent registration board, Protection from litigation.</td>
<td>19/116</td>
<td>16.3%</td>
</tr>
<tr>
<td>Standardised skills for the whole country, not limited to a region and the specifics of a particular medical director, A defined industry scope of practice</td>
<td>16/116</td>
<td>13.7%</td>
</tr>
<tr>
<td>Improve accountability</td>
<td>18/116</td>
<td>15.5%</td>
</tr>
<tr>
<td>Standards of practice are safe for the public and increased patient protection for the public from rogue/incompetent practitioners and operators claiming to be Advanced Paramedics</td>
<td>26/116</td>
<td>22.4%</td>
</tr>
<tr>
<td>Professional recognition by other health care professionals/providers</td>
<td>26/116</td>
<td>22.4%</td>
</tr>
<tr>
<td>Increased standard of care, conduct, ethics and performance</td>
<td>14/116</td>
<td>12.0%</td>
</tr>
<tr>
<td>First step towards complete autonomy of practice</td>
<td>14/116</td>
<td>12.0%</td>
</tr>
</tbody>
</table>
**Question 3.4** What do you think the **disadvantages** of registration would be for Advanced Paramedics?

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not answered, no disadvantages, or don’t know</td>
<td>33/116</td>
<td>28.4%</td>
</tr>
<tr>
<td>Cost</td>
<td>38/116</td>
<td>32.7%</td>
</tr>
<tr>
<td>Time and effort to maintain compliance</td>
<td>8/116</td>
<td>6.8%</td>
</tr>
<tr>
<td>Potential money making venture with little outcome</td>
<td>3/116</td>
<td>2.5%</td>
</tr>
<tr>
<td>The need for indemnity insurance</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Loss of public trust, media attention, isolation of advanced qualifications</td>
<td>4/116</td>
<td>3.4%</td>
</tr>
<tr>
<td>Who will we affiliate with?</td>
<td>8/116</td>
<td>6.8%</td>
</tr>
<tr>
<td>Registration timeframe – e.g. 2 yearly is too long if practice is poor</td>
<td>3/116</td>
<td>2.5%</td>
</tr>
<tr>
<td>We operate in an uncontrolled environment under situations of duress-will every outcome be measured to the clients satisfaction</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>A reluctance for career development due to the fear of losing registration</td>
<td>13/116</td>
<td>11.2%</td>
</tr>
<tr>
<td>Inability due to location to meet recertification requirement</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Maybe will less practising Advanced Paramedics</td>
<td>8/116</td>
<td>6.8%</td>
</tr>
<tr>
<td>More hoops to jump through and bureaucracy</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Ambulance employer may see it as a way to relieve themselves of the fiscal implications of training staff</td>
<td>8/116</td>
<td>6.8%</td>
</tr>
</tbody>
</table>
Question 3.5 What would you think the purpose of registration for Advanced Paramedics would be?

<table>
<thead>
<tr>
<th>Purpose</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not answered, Don’t know, No purpose</td>
<td>28/116</td>
<td>24.1%</td>
</tr>
<tr>
<td>Protection of title</td>
<td>7/116</td>
<td>6.0%</td>
</tr>
<tr>
<td>Practicing certificate</td>
<td>2/116</td>
<td>1.7%</td>
</tr>
<tr>
<td>Protection of the ambulance profession and Advanced Paramedic</td>
<td>29/116</td>
<td>25%</td>
</tr>
<tr>
<td>Protection of the public</td>
<td>23/116</td>
<td>19.8%</td>
</tr>
<tr>
<td>Regulation of the industry enable expansion of practice such as ECPs</td>
<td>6/116</td>
<td>5.1%</td>
</tr>
<tr>
<td>Better pay</td>
<td>2/116</td>
<td>1.7%</td>
</tr>
<tr>
<td>Establishment of a Paramedic council</td>
<td>6/116</td>
<td>5.1%</td>
</tr>
<tr>
<td>Coverage under the HPCAA</td>
<td>4/116</td>
<td>3.4%</td>
</tr>
<tr>
<td>Practice under an act of government rather than a medical director</td>
<td>7/116</td>
<td>6.0%</td>
</tr>
<tr>
<td>Reduction of current clinical risk</td>
<td>6/116</td>
<td>5.1%</td>
</tr>
<tr>
<td>Revenue gathering</td>
<td>2/116</td>
<td>1.7%</td>
</tr>
<tr>
<td>Better calibre of staff and better public awareness</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>International and professional recognition</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Method of establishing who is current practising and where</td>
<td>2/116</td>
<td>1.7%</td>
</tr>
<tr>
<td>Confidential support and national governance</td>
<td>2/116</td>
<td>1.7%</td>
</tr>
<tr>
<td>Outside body ensuring Advanced Paramedics are fit to practice</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>In line with other health professions credibility and role in prehospital care</td>
<td>11/116</td>
<td>9.4%</td>
</tr>
<tr>
<td>National professional development, standards, &amp; education opportunities</td>
<td>36/116</td>
<td>31.0%</td>
</tr>
<tr>
<td>Accountability</td>
<td>11/116</td>
<td>9.4%</td>
</tr>
</tbody>
</table>
In your opinion as an Advanced Paramedic, have you witnessed any incidents in which patients have been subjected to poor treatment by Ambulance Officers of any qualification? (Please circle one)

<table>
<thead>
<tr>
<th>Always Over 30%</th>
<th>Often 15-30%</th>
<th>Occasionally 6-15%</th>
<th>Rarely 1-5%</th>
<th>Never 0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/116 (6%)</td>
<td>25/116 (22%)</td>
<td>61/116 (52%)</td>
<td>23/116 (20%)</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 3.7. Clinical risk

**Emergency Care Practitioner**

**Results from questionnaire**

An Emergency Care Practitioner is the next level of autonomous speciality care, (above that of an Advanced Paramedic) which is currently operational within the United Kingdom. Have you heard of this concept?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>93/116 (80%)</td>
<td>23/116 (20%)</td>
</tr>
</tbody>
</table>

Table 4.1. Knowledge of ECP concept

Would you consider the ECP as a realistic option for the New Zealand ambulance services? (Advanced Paramedic respondents)

<table>
<thead>
<tr>
<th>Definitely Yes</th>
<th>Probably Yes</th>
<th>Don’t Know</th>
<th>Probably No</th>
<th>Definitely No</th>
</tr>
</thead>
<tbody>
<tr>
<td>44/116 (38%)</td>
<td>46/116 (39%)</td>
<td>7/116 (6%)</td>
<td>16/116 (14%)</td>
<td>3/116 (3%)</td>
</tr>
</tbody>
</table>

Table 4.2. Realistic option for the New Zealand emergency ambulance services

38% of Advanced Paramedic respondents regarded ECPs as (definitely yes) realistic option for the New Zealand Ambulance Services (95% confidence interval = 29.1% to 47.4%).
**Question 4.2** “Would you consider the ECP as a realistic option for the New Zealand ambulance services?”

<table>
<thead>
<tr>
<th>Reason</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better use of resources, Increases skill level</td>
<td>6/116</td>
<td>5.1%</td>
</tr>
<tr>
<td>Would be beneficial in rural areas of New Zealand where it is difficult to attract any medical personnel.</td>
<td>23/116</td>
<td>19.8%</td>
</tr>
<tr>
<td>More professional service to the public and increased public recognition</td>
<td>3/116</td>
<td>2.5%</td>
</tr>
<tr>
<td>Decreasing the unnecessary presentation to the Emergency Departments, decrease the workload pressure already on the Emergency Department Staff</td>
<td>47/116</td>
<td>40.5%</td>
</tr>
<tr>
<td>Motivate and enhances the career pathway, increase in job satisfaction</td>
<td>30/116</td>
<td>25.8%</td>
</tr>
<tr>
<td>Already is occurring now in clinical practice, just requires formalisation</td>
<td>13/116</td>
<td>11.2%</td>
</tr>
<tr>
<td>Increased autonomy in metropolitan areas, reduce the workload in metropolitan areas</td>
<td>9/116</td>
<td>7.7%</td>
</tr>
<tr>
<td>Great concept – the concern is funding</td>
<td>3/116</td>
<td>2.5%</td>
</tr>
<tr>
<td>Will relieve pressure on GPs and after hours care. There is an increased aging population and increased pressure on the health system</td>
<td>20/116</td>
<td>17.2%</td>
</tr>
<tr>
<td>Gap in the community for care of the patient at home</td>
<td>4/116</td>
<td>3.4%</td>
</tr>
<tr>
<td>Cost saving</td>
<td>15/116</td>
<td>12.9%</td>
</tr>
<tr>
<td>Manage demand on emergency ambulances, leave them for emergencies</td>
<td>27/116</td>
<td>23.2%</td>
</tr>
<tr>
<td>Requires ‘buy in’ from the General Practitioners and the Emergency Department staff</td>
<td>5/116</td>
<td>4.3%</td>
</tr>
<tr>
<td>Same as the reasons described in the United Kingdom, should be transferable to New Zealand. Proven successful role in the United Kingdom</td>
<td>10/116</td>
<td>8.6%</td>
</tr>
</tbody>
</table>
ECPs can utilise the appropriate health service for the patient 5/116 4.3%

Other significant issues require priority management such as staffing issues, clinical skill, ability and registration. 11/116 9.4%

Question not answered 8/116 6.8%

A selection of quotes from the Advanced Paramedic respondents included:

- “The health system is under strain in all areas and any measures that can be introduced to reduce the pressures by appropriately helping patients to source the facility that best fits their needs can only be beneficial”.

- “I would like to say definitely yes. But I do think that with better GP services and availability the current situation could be made better. The current New Zealand emergency ambulance services do not have anywhere the maturity to adapt this idealist approach”.

- “I’m unsure, as the New Zealand emergency ambulance services are totally different in structure to the United Kingdom. There is far more ‘abuse’ of the 999 (111) calls in the United Kingdom with the majority falling into the ‘inappropriate call’ category”.

- “Not beneficial for the ambulance sector as a cover for job of GPs and Emergency Departments who can not cope. The money would be best spent increasing other emergency skills. Understaffing is an issue now I think the basics should be covered such as eliminating single crewed ambulances”.

- “Providing the public with a positively publicised new model of care – encourages utilisation and empowers the New Zealand ECP to promote and take ownership of the role. The New Zealand emergency ambulance services need to claim ownership of the model and concept to ensure that ideals and expectations are met (with consultation with the stakeholders). If this concept was not developed in a structured national pathway correctly and not managed effectively – then the concept has all likelihood of failure”.

- “Ambulance culture needs to move away from ‘blame’ towards other professions (e.g. running down GP’s and Nurses) especially if ECPs are introduced, that will be working closely with these people one day”.

Would you be interested in undertaking an Emergency Care Practitioner qualification?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>81/116 (70%)</td>
<td>35/116 (30%)</td>
</tr>
</tbody>
</table>

Table 4.3. Interest in undertaking an ECP qualification

(95% confidence interval = 60.6 % to 78.0 %) for Advanced Paramedic respondents who would be interested in undertaking an ECP qualification.

Would you undertake the Emergency Care Practitioner qualification if you were required to self-fund?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>49/116 (42%)</td>
<td>67/116 (58%)</td>
</tr>
</tbody>
</table>

Table 4.4. Self funding

(95% confidence interval = 33.1% to 51.7%) for Advanced Paramedic respondents who would self fund to gain an ECP qualification.

In the United kingdom, ECPs work in a variety of settings. Where would you see a New Zealand equivalent based? (Asked to rank in priority order 1-5). With 1 = most appropriate and 5 = least appropriate.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Advanced Paramedic ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Ambulance based</td>
<td>43/116 18/116 22/116 13/116 6/116</td>
</tr>
<tr>
<td>Urban/Rural Ambulance based</td>
<td>37/116 42/116 16/116 14/116 0/116</td>
</tr>
<tr>
<td>Out of Hours GP practices</td>
<td>9/116 17/116 21/116 30/116 9/116</td>
</tr>
<tr>
<td>Other</td>
<td>0/116 0/116 1/116 4/116 1/116</td>
</tr>
</tbody>
</table>

Table 4.5 New Zealand setting for ECPs

Advanced Paramedics respondents ranked the metropolitan ambulance setting as the most appropriate work environment for ECPs to operate within. This has been measured in Table 4.5 by mode as number 1 = the most frequently used ranking score. Emergency Departments were ranked by mode, as the least appropriate setting for ECPs.
There is a limitation in the results as some Advanced Paramedic respondents either did not rank all of the settings, or ranked some settings equally. This has been identified in the limitations.

**Role satisfaction**

**Results from questionnaire**

<table>
<thead>
<tr>
<th>Role satisfaction</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel satisfied/happy with my current role</td>
<td>32/116 (28%)</td>
<td>64/116 (54%)</td>
<td>9/116 (8%)</td>
<td>9/116 (8%)</td>
<td>2/116 (2%)</td>
</tr>
<tr>
<td>I feel valued</td>
<td>9/116 (8%)</td>
<td>44/116 (38%)</td>
<td>24/116 (21%)</td>
<td>27/116 (23%)</td>
<td>12/116 (10%)</td>
</tr>
<tr>
<td>I am highly capable</td>
<td>47/116 (47%)</td>
<td>67/116 (67%)</td>
<td>2/116 (2%)</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>I feel I am experienced in my job</td>
<td>69/116 (60%)</td>
<td>41/116 (35%)</td>
<td>4/116 (3%)</td>
<td>2/116 (2%)</td>
<td>0%</td>
</tr>
<tr>
<td>I fully utilise my clinical skills to the best of my ability.</td>
<td>58/116 (50%)</td>
<td>46/116 (40%)</td>
<td>7/116 (6%)</td>
<td>4/116 (3%)</td>
<td>1/116 (1%)</td>
</tr>
</tbody>
</table>

Table 5.1. Role satisfaction
Other issues

Results from questionnaire

Case Study – example of an inappropriate service option
As conveyed by an Advanced Paramedic respondent in the ‘other issues’ section of Advanced Paramedic questionnaire. The example is linked to the term inappropriate attendance and the potential extension of roles Advanced Paramedics or potential ECPs could treat and manage without the need for transfer to an Emergency Department.

“An example in context of the term ‘inappropriate service’ that I can clearly relay frustrated my own clinical practice, annoyed the patient, placed reservation on the provision of patient rights, and claimed a bed at the Emergency Department that was clearly not necessary. Briefly, the patient was transported by ambulance from a rest home to an emergency department after the patient’s refusal to take a medication resulted in an exacerbation in chronic condition of Parkinson’s disease causing increased seizure like activity. This in turn resulted in the twenty four hour Midazolam subcutaneous infusion tube breaking. The patient was successfully managed (within authorised Advanced Paramedic procedures) using an intravenous bolus of Midazolam. Post treatment, the patient was alert and stated clearly that there was no need to be transported to hospital. My attempts to facilitate this failed. The rest home had a Registered Nurse only on call, whom was not contactable by any of the normal means. The patient required the infusion to be restarted and with no qualified health professional available at the rest home to do this, I felt that patient’s safety would be compromised if this was not reestablished correctly. Consent to transport the patient was eventually possible following discussion with the patient, although clearly not the best option. My feelings of frustration came about in having a high clinical skill level but an inability to deliver the highest standard of optimum care to my patient.

A multi-faceted approach to this patient’s care was possible, but given there are no clear guidelines or procedures regarding utilising my registered nursing skills combined with the skills I can practice as an Advanced Paramedic, then I was unable to do so. The development of an integrated care model to utilise those Ambulance Officers who also hold a current practicing Registered Nurse qualification could also have benefits in providing effective ‘point of contact’ primary care.
One Advanced Paramedic documented comments regarding the New Zealand public and health professional colleagues ‘perception’ within the postal questionnaire. They are as follows:

“Perception and thought from one Advanced Paramedics experience has been on occasions of that of a ‘driver’ and an attendant. ‘Having often been asked the question ‘do they let you drive the ambulance?’ or ‘are you a nurse?’ Many of the public and members of the medical profession seem to be completely unaware or oblivious to the clinical skill level that is upheld and delivered”.

“Being subjected to the harshest and extremes of conditions leaves no room for complacency. Thrust into the unknown situations they have become part of, Advanced Paramedics are expected to take the lead role, systematically analyse the situation before them as they are ultimately responsible for the decisions made. This is followed by expediently providing the correct life preserving measures, then extracting and delivering the patient to the best place of care, all whilst continuing to treat and manage the patient within the confines of a moving vehicle. You can only truly appreciate the excitement, the absolute will to do the best for the patient, to utilise your clinical skill to the best of ones ability if you have been subjected too and understand the experience”(Advanced Paramedic respondent, postal questionnaire, 2006).
The Stakeholder Interview

The Stakeholders’ respondents’ interviews have been quoted directly from the interview. The format has followed the delivery format of the stakeholder interview (Appendix Three).

Fifteen Stakeholder respondents from the eleven Stakeholder organisations responded to the interview. ACC was the only organisation who felt unable to complete the Stakeholder interview within the timeframe required for this research. Initial contact was made in March 2007 with ACC, then again in June 2007 with the Programme Manager Rehabilitation Services (Primary Care Programmes).

Emergency Care Practitioners

Results from interview

1.1 Prior knowledge of Emergency Care Practitioner concept

An Emergency Care Practitioner is the next level of autonomous speciality care, (above that of an Advanced Paramedic) which is currently operational within the United Kingdom. Have you heard of this concept?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/15 (85%)</td>
<td>2/15 (15%)</td>
</tr>
</tbody>
</table>

Table 1.1 ECP concept

Stakeholder respondents were provided with a background commentary with the interview explaining the ECP role, where the concept originated, the aims in establishing ECPs in the United Kingdom, as well the training undertaken. They were asked to state whether they had prior knowledge of the ECP concept before the commentary was given. A copy of the commentary is included as (Appendix three).

Would you consider this a realistic option for the NZ emergency ambulance services?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(15/15) 100%</td>
<td>0/15 (0%)</td>
</tr>
</tbody>
</table>

Table 1.2 Realistic options for New Zealand emergency ambulance services

Stakeholder respondents who said yes the ECP would be a realistic option for the New Zealand emergency ambulance services (95% confidence interval – 81.90% to 100%).
Would you consider this a realistic option for the New Zealand Health System?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(14/15)93%</td>
<td>1/15 (7%)</td>
</tr>
</tbody>
</table>

Table 1.3  Realistic option for the New Zealand Health System

Stakeholder respondents who said yes to the ECP being a realistic option for the New Zealand health system (95% confidence interval – 68.05% to 99.83%).

1.2 Benefits of establishing Emergency Care Practitioners in New Zealand.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficial in rural areas of New Zealand. Difficult to attract General Practitioners</td>
<td>6/15</td>
<td>40%</td>
</tr>
<tr>
<td>Decrease presentations to Hospitals and Emergency Departments.</td>
<td>8/15</td>
<td>53.3%</td>
</tr>
<tr>
<td>Reduce waiting times in Emergency Departments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assist with after hours care and short fall of General Practitioners</td>
<td>4/15</td>
<td>26.6%</td>
</tr>
<tr>
<td>New innovative model of care</td>
<td>6/15</td>
<td>40.0%</td>
</tr>
<tr>
<td>Increased job satisfaction, recruitment and retention of experienced, motivated staff, recognition as an expert health provider</td>
<td>7/15</td>
<td>46.6%</td>
</tr>
<tr>
<td>Integrated emergency and primary care service</td>
<td>2/15</td>
<td>13.3%</td>
</tr>
<tr>
<td>More effective use of resources.</td>
<td>5/15</td>
<td>33.3%</td>
</tr>
<tr>
<td>Improving patient outcomes.</td>
<td>4/15</td>
<td>26.6%</td>
</tr>
</tbody>
</table>

All of the Stakeholder organisation respondents considered establishing ECPs in New Zealand as a beneficial, and new patient centered, model of care. Direct quotes from the Stakeholder results included “resolving an identified health issue in New Zealand”, as well as ‘better patient outcomes, more effective use of resources when integrating emergency and primary care services’. Benefits of establishment were described as:

- “The possibility of reducing drain on emergency department resources by minimising minor injury and treatment of medical cases in the field, with a flow on effect of reducing waiting times”.

Jackie Clapperton
“The devolution of delivery of primary care delivery to professionals other than GPs is good for rural health in New Zealand. The move away from a GP-centered health service delivery is a positive one for New Zealand, as we are too dependent on a small group of professionals who are difficult to recruit and retain in rural areas, and who are expensive”.

“I believe this would be most useful in more rural areas with poor medical staffing; long distance to the nearest hospital/tertiary hospital. It might also ensure better patient care until arrival at hospital and/or to avoid unnecessary transfer to hospital that is at this distance”.

“ECPs could be a future service delivery model in rural areas, particularly where there is a shortage of out of hour’s primary healthcare providers”.

The NZNO Stakeholder respondent felt that there were no benefits in establishment unless these practitioners are regulated under the HPCAA 2003.

“They need a defined scope of practice and a regulatory body. These are not Emergency Nurse Practitioners™ that are regulated under the HPCAA (2003) and regulated by scope by Nursing Council of New Zealand”.
1.3 **Extended skill and knowledge base for Emergency Care Practitioners.**

Included as *appendix four* is the specific competencies required by ECP in the United Kingdom (Department of Health, 2004)

<table>
<thead>
<tr>
<th>Extended skill and knowledge base</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters Level Education with a focus on clinical assessment and pathophysiology.</td>
<td>9/15</td>
<td>60%</td>
</tr>
<tr>
<td>Minor ailments that have an acute need but do not necessarily need emergency department assessment or admission.</td>
<td>5/15</td>
<td>33.3%</td>
</tr>
<tr>
<td>Prescribing rights for antibiotics. Pharmacology. Ability to refer to diagnostics.</td>
<td>5/15</td>
<td>33.3%</td>
</tr>
<tr>
<td>Emergency Department and Primary Health Care experience. GP internship.</td>
<td>8/15</td>
<td>53.3%</td>
</tr>
<tr>
<td>Advanced clinical assessment and diagnostic training. Competency based care.</td>
<td>8/15</td>
<td>53.3%</td>
</tr>
<tr>
<td>Suturing, Catheterisation. Definitive wound care.</td>
<td>8/15</td>
<td>53.3%</td>
</tr>
<tr>
<td>Having a broad knowledge of patient flow (from community to discharge). With a focus on preparing for discharge planning at the beginning.</td>
<td>2/15</td>
<td>13.3%</td>
</tr>
<tr>
<td>Ability to work alone/under supervision/improved clinical decision making.</td>
<td>4/15</td>
<td>26.6%</td>
</tr>
<tr>
<td>On scene referrals to District Nurses and Specialist Nurses.</td>
<td>2/15</td>
<td>13.3%</td>
</tr>
<tr>
<td>Self care advice (Diabetes, Angina). Head injury (concussion).</td>
<td>7/15</td>
<td>46.6%</td>
</tr>
<tr>
<td>Health Law and Policy. Critical thinking.</td>
<td>5/15</td>
<td>33.3%</td>
</tr>
<tr>
<td>Increased skill sets such as ophthalmoscope, obstetrics, femoral blocks, radiography for the rural patient, and patient management in flight.</td>
<td>6/15</td>
<td>40%</td>
</tr>
<tr>
<td>Research – active consumer of evidence based research and research assistant or primary researcher where appropriate.</td>
<td>9/15</td>
<td>60%</td>
</tr>
<tr>
<td>The current system is sufficient – especially those that are PRIME responders.</td>
<td>1/15</td>
<td>6.6%</td>
</tr>
</tbody>
</table>
1.4 Development of Professional standards and clinical competencies

The Stakeholders were asked to identify who should be responsible for the development of ECP professional standards and clinical competencies. The complete transcribed list includes:

- Jointly developed by sector, educators (to ensure cohesion with degree graduate profile) and a professional registration board.
- Authorities that oversee Ambulance Officer training.
- In co-ordination with a national clinical advisory group and tertiary education sector.
- National clinical advisory group.
- A governing professional body specific to ambulance operations and education.
- Ambulance Operations.
- Ambulance New Zealand.
- In consultation with education expert providers.
- A vigorous education structure should fortify the model. A combination of ambulance services, ambulance educations providers and DHBs’ should develop the model.
- International affiliation with other emergency ambulance sectors.
- A three pronged approach: New Zealand emergency ambulance sector in combination with General Practitioners and the Emergency Departments.
- Registration of Advanced Paramedics would be essential before this proceeded. The ambulance sector in consultation with registered medical professionals should set the standards.
- Funding agencies would need to be involved so the funding is put in place to deliver this level of service. Ultimately this would be a MoH and DHB initiative with partnership from PHOs and the New Zealand emergency ambulance services.
- Specialist group including medical professionals, ambulance personnel and governing body.
In the United Kingdom, ECPs work in a variety of settings. Where would you see a New Zealand equivalent based? (Asked to rank in priority order 1-5).
With 1 = most appropriate and 5 = least appropriate.

<table>
<thead>
<tr>
<th>New Zealand potential ECP setting</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Ambulance based</td>
<td>3</td>
</tr>
<tr>
<td>Urban/Rural Ambulance based</td>
<td>2</td>
</tr>
<tr>
<td>Rural Ambulance based</td>
<td>1</td>
</tr>
<tr>
<td>Emergency departments</td>
<td>5</td>
</tr>
<tr>
<td>Out of Hours GP practices</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 1.5. New Zealand ECP setting

Stakeholder respondents ranked the rural ambulance setting as the most appropriate work environment for ECPs to operate within. This has been measured in Table 1.5 by mode, which identifies the most frequent score used with nominal data. Emergency Departments were ranked by mode, as the least appropriate setting for ECPs. One Stakeholder stated: “It was difficult to rank for placement of metropolitan to rural as it should be a cohesive approach to out of hospital healthcare”.

**Concerns with implementation**

**Results from interview**

2.1 Respondents from the Stakeholder organisations major concerns with establishing ECPs in New Zealand included:

<table>
<thead>
<tr>
<th>Contingency table of concerns with establishment of ECPs in New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes</td>
</tr>
<tr>
<td>Safety</td>
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Safety
Concerns from the Stakeholder respondents about safety directly quoted include:

“The need to be regulated, in terms of public safety. The NZNO Stakeholder respondent advised consideration be given to exploring the Health and Disability Commission recommendations on the role of the Anaesthetic technicians and that this group should be regulated”.

“Registration is needed if this concept is to be established”.

“There are concerns with a potential ECP working alone, also an increased clinical risk with misdiagnosis. There would need to be stringent clinical governance and monitoring”.

Workforce
Concerns from the Stakeholder respondents about the potential workforce directly quoted include:

“Unable to secure a rural workforce. There are many issues in the rural sector – unable to provide coverage. NZNO would not be involved in this target workforce other health unions cover this ambulance based workforce (NZNO Stakeholder respondent).

“All Advanced Paramedics should be on a tertiary education pathway with a grandfather clause requirement for old qualifications”.

“Concern whether there is a sufficient number of Advanced Paramedics’ with clinical skills and motivation for this type of work”.

“Concern about retention of specially trained staff that may tire of the work”

“There could be possible industrial issues”.

“The paradigm of unionism. Advanced Paramedics would have to take a wider view on service delivery and clinical skill set. This type of role is not suited to the Advanced Paramedic who is only interested in emergency care.

Management
Stakeholder respondents concerns with management directly quoted include:

“Who will manage them and to what standards?”

“There needs to be ‘buy in’ by management of the need for a tertiary educated workforce and the potential for ECPs to not only be experts in pre-hospital emergency care but also to provide a comprehensive quality after hours service for the public of New Zealand”.
“There will be a need to move the focus from a transport service to a healthcare provider. New concept, new procedures, new method of operating and new process for Communication Centres (particularly in areas of determinants and alternative response capabilities”).

“Funding the initiative appropriately as ambulance services are not currently sustainably funded at current and any new initiative needs adequate fiscal investment”

“Workforce issues are one of the major concerns. Who will pay? And do we have the appropriate personnel”.

“Management issues are dependant on who is driving the model of care. Dependant on who is managing: emergency ambulance service, DHB or a combination of the two”.

**Strategic**

Stakeholder respondents concerns with strategic direction directly quoted include:

“This is a service delivery model of the future”.

“MoH and ACC need to give guidance here”.

“The workforce should be four tiers: First Responder, Basic Life Support, Advanced Life Support and ECP. Intermediate Life Support (ILS) presently is a patchwork of variable short course certificates and up-skilling. Any registration of ILS clinical personnel should be with the proviso that they pass a certain number of tertiary papers, to maintain their practising certificates and ILS gradually phased out as a level. There is a chequered perception of the capabilities of Advanced Paramedics. Changes in capabilities should be managed with a robust public education programme. The ECP should be an active member of a multi-disciplinary community and Primary Health Care Strategy”

“There should be National support from all of the emergency ambulance services, as well as full funding and resourcing, integrated E-records systems should be established, and linkages to the Primary Health Care Strategy”.

“Emergency ambulance services and communities need to take an active role”.
Policy
Stakeholder respondents concerns with policy directly quoted include:
“The MoH and ACC need to give guidance here”.
“The needs to be defined scopes of practice set by a professional registration board and covered under the HPCAA”.
“There needs to be national consistency in policies and robust procedure”.
“Employment issues would need to be worked through, what hours the ECP would work. Would they be rostered? They must be registered”.
“We run into the same problems as within the emergency ambulance services. Each service has their own procedures, own authority to practice and different educational pathways. Who would write and develop policy? Sufficient resources need to be available”.

Oversight
Stakeholder respondents concerns with oversight directly quoted include:
“The MoH and ACC need to give guidance here”.
“There should be a community healthcare multidisciplinary team approach with associations with tertiary educators to support & encourage publication”.
“The ECP requires a robust development of oversight. There is clinical risk involved when working alone in isolation and a practice base differing from that of colleagues”.
“Clinical oversight should be provided by the organisations Clinical Governance Group, but then the individual must be registered and have a scope of practice”.
“Oversight would be best looked at once the model of care is complete”.
“A professional body needs to be developed, and could be developed from international bodies such as in the United Kingdom and Australia”.

Audit
Stakeholder respondents concerns with audit directly quoted include:
“There should be self and peer review with monthly case review based teaching sessions”.
“Definitely there is a requirement for robust audit process and peer review processes”.
“Robust quantifiable and qualitative systems need to be established and feed into research”.
“Not merely the compliance processes of today’s audit”.
“The audit process would be part of the model of care. Dependent on who is providing the oversight”.

Jackie Clapperton
Funding options

Results from interview

3.1 Funding in regard to the establishment of Emergency Care Practitioners
Stakeholder respondents were asked their views on how ECPs should be funded. All quotes from the results include:

“Currently extended practice in education is funded by the individual. If this was to be implemented then employing ambulance bodies should be providing this funding”.

“The MoH contracts for after hours and PHO contracts”

“There should be MoH incentive payments for community care solutions”.

“ACC funding extending to emergency ambulance services covered for the treat and discharge of patients in the field. e.g. able to claim for consults, wound care, and splinting”.

“ECPs should be bulk funded by MOH and ACC on a pro-rata basis commensurate with workload”.

“If the ambulance services deliver exclusively them MoH and ACC would need to be consulted. Some DHBs would look at the project as a way of identifying Emergency Department congestion and ease of patient care”.

Delivery of an Emergency Care Practitioner Education Programme

Results from interview

4.1 Envisaged training and implementation of Emergency Care Practitioners
Stakeholders respondents were asked to describe their opinions regarding the type and level of training that could be required for ECPs in New Zealand. Quotes include:

“This would only be practicable in a tertiary institute setting”.

“Tertiary education in a university setting with inter-disciplinary teaching where appropriate”.

“Co-ordinated by internal education training coupled with input from tertiary specialist clinicians with the ambulance sector and Clinical Advisory Group oversight”.

“Must be a Masters level tertiary programme preferably through a University with research focus”.

“Education would need to be at least undergraduate level, and more appropriate post graduate study. Local providers and or overseas providers would be required”.

4.2 Desired minimum/base skill level for an Emergency Care Practitioner

The minimum skill level required to become an ECP in the United Kingdom as stated in the competence and curriculum framework is appropriate experienced ‘Advanced Paramedics’ and ‘Registered Nurses’ who have professional registration (Department of Health, 2006). The transcribed list includes:

“This would need to be scoped out and costs associated with minimal requirements. Within the current workforce strategies, suggest that benchmarking is considered within the ambulance workforce”.

“Bachelor of Health Sciences Paramedic with enrolment in Postgraduate Diploma / Masters and completion of at least one or two papers specific to the role”.

“Advanced Paramedic or Registered Nurse”.

“Above the Advanced Paramedic, operating as a Physicians Assistant and combined with Nursing”.

Vehicles that may be required

Results from interview

5.1 Physically mobilising Emergency Care Practitioners

Quoted statements from the Stakeholder respondents include:

“This would need to be scoped out and costs associated with minimal requirements. This would be funded by emergency ambulance services”.

“A Jeep type vehicle or a front-line vehicle. Any case may require ECP skills, some patients may be transported so you cannot discount the need for an actual ambulance”.

“Station wagon type vehicle capable of carrying sufficient equipment”.

“By car, not ambulances as ECPs are not there for transport”.

“All Ambulance Officers should be in ambulances. This allows an increase in transportation options. If an area had considerable workload requiring ECPs then possibly, a designated vehicle”.

The feasibility of establishing Emergency Care Practitioners in New Zealand

Jackie Clapperton
### Professional Registration

#### Results from interview

**Do you think that New Zealand Advanced Paramedics should be professionally registered?**

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<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
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<td></td>
<td>15/15 (100%)</td>
<td>0/15 (0%)</td>
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</table>

Table 6.1 Professional registration

Stakeholder respondents who said yes to Advanced Paramedics being professionally registered (95% confidence interval – 81.90% to 100%).

#### 6.2 Benefits of Registration

**Contingency table of benefits of registration**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>(n)</th>
<th>(%)</th>
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<tbody>
<tr>
<td>International affiliations with emergency ambulance services that currently hold registration were suggested as guiding agencies.</td>
<td>6/15</td>
<td>40%</td>
</tr>
<tr>
<td>Development and leadership of professional registration included the MoH and DHBs, with partnership from PHO and the New Zealand emergency ambulance services.</td>
<td>3/15</td>
<td>20%</td>
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<tr>
<td>Registration was essential to ensure public safety and accountability of individuals and organisations.</td>
<td>9/15</td>
<td>60%</td>
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<tr>
<td>To come under the HPCAA (2003) and be treated as a registered health professional and thus claim ACC treatment provider status, include the funding agencies from the outset of development so that the funding is put in place to deliver this level of service</td>
<td>7/15</td>
<td>46.6%</td>
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<tr>
<td>Maintaining a register could also identify if the Ambulance Officer required further training courses, as well as disciplinary functions. Also ensures medical based evidence and implies high ethical values, educational and professional quality.</td>
<td>8/15</td>
<td>53.3%</td>
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It was highlighted by the Stakeholder respondent from NZNO that “On analysis of the ambulance standards in January there is an issue with the accountability of ambulance personnel in that they only need to be issued with compliance by a medical officer not a regulatory body”.

6.3 Disadvantages of Registration
This question highlighted cost as a potential barrier. 8/15 (53.3%) of Stakeholder respondents identified cost as a disadvantage of registration. 6/15 (40%) of Stakeholder respondents identified there would be no disadvantages. Quotes included:

“Cost, if retained as an individual registration board as a small group”.
“Possibility of more bureaucracy/additional administration”.
“Cost to the individual could be a barrier”.

6.4 Overcoming Barriers to Registration
Stakeholder respondents’ quoted views included:

“Legal accountability & cover for individual practitioners removing the limitations of standing orders, and unreasonable expectation for cover of actions under the Medical Director”.

“Gaining MoH & ACC support is imperative, at the moment the view appears to be that the sector is disparate. Perceptions of people in the sector will change over time”.

“Approach the MoH with a case for regulation.”.

“Provision of additional administration support”.

“Educating staff, funders, employers and public on the advantages, cost benefits and professional development of the sector”.

“An agreement to what qualification would be registered and would this registration be the same as other Paramedics?”.

6.5 Body providing oversight and quality assistance for ECPs
Stakeholder respondents’ quotes include the following:

“It is important that the emergency ambulance services’ develop their own organisation to retain and strengthen their place in the health continuum as experts in pre-hospital care”.

“A general health practitioners’ board would be most cost effective where Advanced Paramedics are covered by an umbrella organisation with other health disciplines”.

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“By the regulatory authority that should be appointed by the MoH”.
“National Clinical Advisory Group and Clinical Standards department”.

6.6  **Management of a Register**

This question was not answered or answered as ‘not sure’ by 10/15 (66.6%) of the Stakeholder respondents. The quotes from the interview include:

“As for medicine, nursing and midwifery”.
“Envisage clinical standards department would manage this process”.
“Developed under an ambulance specific council and governing professional body”.

**Mode of implementation**

**Results from interview**

7.1  **Responsibility of clinical support**

Stakeholder respondents in New Zealand considered the following:

“Utilise the present pool of Medical Directors plus have access to GP and or a Physician”.
“The Medical Council of New Zealand should credential this individual”.
“Ambulance sector medical director”.
“Physicians at closest emergency facility”.
“Service Medical Advisor and the GP in the community they work alongside”.

7.2  **Utilisation of Emergency Care Practitioners**

Stakeholder respondents quotes include:

“Pre-determined alternative response to a list of conditions to avoid the unnecessary use of a double crewed emergency ambulance”.
“Delivery of urgent care in the community”.
“This is difficult. Dependant on what the criterion would be. If the ECP is ambulance based then the option of going to a case such as wound care would be dependant if what other cases require their attention. Conversely, would there be enough work for a designated person to respond only when required”.
7.3 Who should be able to request ECP activation and to what sort of patients?

Stakeholder respondent opinion included:

“As for Advanced Paramedic anyone requesting back up and Healthline”.

“Any member of the public via an emergency ambulance communication centre”.

“Patient conditions including accident or medical conditions that upon triage are not regarded as life threatening or in need of immediate hospitalisation”.

“Through an EACC for emergency (although not primarily) and urgent care patient”.

Other issues

Results from interview

The Stakeholder respondent from Auckland University of Technology had other concerns that required documentation. “They considered that the United Kingdom qualifications do not all benchmark with New Zealand. A foundation Advanced Paramedic degree is equivalent to a diploma, an honours degree is equivalent to a degree, and some postgraduate programmes appear to have level seven components and fit with graduate diplomas at level seven. It is important that the ECP model is not constrained by people saying we do not have suitably qualified people. There are already qualified staff, and this could be trialled now. The degree qualified staff who are in Advanced Paramedic roles would be the logical group to start with. Victoria, Australia has implemented a trial, it would be worthy consulting with Rural Ambulance Victoria’s (RAV) on their findings. RAV did not start with a post graduate programme but worked with two appointees to ascertain what the gaps exist in their knowledge base and what specific extra skills are actually needed. RAV only employ degree graduates” (AUT Stakeholder respondent, 2006).
DISCUSSION

The majority of Advanced Paramedic respondents stated that they needed additional opportunities to advance their careers and suggested the opportunity to undertake a tertiary undergraduate or postgraduate degree would facilitate this. Having an identified formal clinical career pathway was also identified as an important theme by the Advanced Paramedic respondents, if ECPs were introduced. Advanced Paramedic respondents have acknowledged in the results that tertiary level study has been undertaken since becoming an Advanced Paramedic. The research did not identify particular areas of study that was undertaken.

The tertiary centres in New Zealand that offer the undergraduate degree in Paramedicine have started to recognise that clinical reasoning is an essential element in developing ‘higher knowledge level’ Advanced Paramedics, who are now developing abilities to question best practice and research (Auckland University of Technology, 2008). It is important to recognise and maintain these elements as continuous evolving characteristics to be challenged. Success and scrutiny of the extension of roles and scope of practice need to counter balance and become inherent measurement points. Grantham’s ideology describes these attributes as “Underscoring the need for strong clinical reasoning skills in pre-hospital care is the fact that Advanced Paramedics face the same uncertain patient presentations as physicians, coupled with a completely uncontrollable environment” (Grantham, 1999).

The role of an emergency ambulance Advanced Paramedic is constantly evolving, particularly internationally. In New Zealand however once the qualification of ‘Advanced Paramedic’ has been reached, there are very few opportunities available to extend clinical practice. A formalised clinical career pathway has not yet been created to challenge academic knowledge or clinical practice past the level of Advanced Paramedic.

A qualitative naturalistic inquiry research study conducted by Cooper (2004) had an aim in gaining an understanding of the current education system, and future development of training and education within a United Kingdom ambulance trust. The purposive study sample included 61 Stakeholders and included Paramedics, Technicians, Managers, ECPs, Emergency Department consultants, managers and nurses. Data was collected using semi-structured individual interviews, and on two occasions respondents were paired. Five focus group interviews were performed with a purpose of promoting interaction within the group to stimulate individual views on training and education.
Data was analysed using the constant comparison method to eventually identify key emergent themes and models. A total of 44 interviews were conducted over a period of one year. Results identified that Paramedicine should be a graduate profession, with associated concerns that higher education should be stimulating and interesting with a clear career pathway. There were also concerns of possible workforce gaps with existing staff that may not have the ability to attempt higher education. The desire to strengthen and challenge clinical practice within pre-hospital care has been discussed in a paper written by Kent Brown (2000). The report associates knowledge, cognition and metacognition as elements required to challenge higher thought processes within the confinement of clinical reasoning in pre-hospital care. Metacognition appears to be the single umbrella element encompassing both the other two at a higher knowledge level. Described as an abstract concept, Kingten Andrew (as cited in Boychuk, 1999) recognises the term as a differentiation between mediocrity and excellence in critical thinking.

Deskilling along with training for skills that were rarely used, was seen as an issue by the respondents in the research conducted by Cooper (2204) The emphasis from the respondents in this study focused on self directed professional development and included a recertification process placement in the Emergency Department which resulted in mixed views on the value of such a placement. The respondents however were universal that the Emergency Department clinical placement was a valuable process for creating multi-professional links, breaking down barriers and enhancing communication. Limitations in the study were that the respondents tended to emphasise the negative aspects of their work, despite the interview questions focusing of the advantage of current system of training and education.
Potential barriers

A United Kingdom study looking at the emerging role of the ECP in 2004 made some interesting points regarding pressure being applied to those involved in healthcare education to produce personnel who are ‘fit for practice’ and also break down those territory barriers between professions and specialities – interestingly referred to as ‘tribalism’ (Cooper, et al 2004 and Cooper, 2004). The connotation behind this term brings about thoughts of primitive rivalries coupled with rational and irrational behaviours. Within the context of most health professions there is an underlying truth to the statement, which is often more rife and identified as ‘horizontal violence’ (Petrie, 2004) within boundaries of singular professions.

One Advanced Paramedic made comment in relation to this term within their questionnaire and states: “Ambulance culture needs to move away from ‘blame’ towards other professions (e.g. running down GP’s and Nurses) especially if ECPs are introduced, that will be working closely with these people one day”.

Including other health related professions such as nurses and doctors in the development of an ECP structure, and operational plan from the outset (even within the boundaries of this study), implies that their opinions are important and that their inclusion may promote a positive framework of team work and cross boundary professionalism.

Clinical risk

Exploring clinical risk in Table 3.7 should be considered a significant result to address. If Advanced Paramedic respondents are witnessing poor treatment by their clinical colleagues on a regular basis, then always 6%, often 22%, and occasionally 52% could be argued as a crisis point and may require further in depth investigation. Accountability could be seen as overtly questionable, and may offer doubt in that a proportion of Ambulance Officers are potentially not competent and fit to practice. What constitutes the specifics of ‘poor treatment’ has not been investigated within the context of this research. The balance of risk given an Advanced Paramedics expected level of invasive skill and advanced knowledge (National clinical advisory group, 2007) could benefit having a professional register. Implementation of registration objectively may need to include all levels of Ambulance Officer (Ambulance New Zealand, 2004).
A media report published in The Dominion Post (Beaumont, 2008) identifies that clinical risk is indeed significant within the New Zealand emergency ambulance sector. A coroner investigating the death of a patient in 2006 expressed concerns that ambulance staff failed to assess the patient's vital signs, advised the patient to take paracetamol and rest, leaving the patient at home. Unfortunately, in less than 24 hours that patient died from an abdominal rupture. The article discusses the need for emergency ambulance service regulation and national standard for all ambulance officers.

Advanced Paramedic and Stakeholder respondents identified that a benefit in introducing ECPs would reduce the number of attendances to Emergency Departments, which was also a benefit seen in the introduction of ECPs in the United Kingdom (Department of Health, 2004). The concept has benefits for the patient and the Emergency Department, but it does suggest greater exposure to clinical risk if the patient is left at home, and requires robust protocols and procedures with oversight and audit maintenance if introduced in New Zealand. A United Kingdom study conducted by Snooks et al (2004) developed and evaluated ‘treat and refer” protocols for ambulance crews, allowing them to leave patients at the scene, with onward referral or self care advice as appropriate. The method involved training five Paramedics and five Emergency Medical Technicians (EMTs) from one emergency ambulance station in a two day training course in ‘treat and refer’ protocols. This was measured against a control group at another emergency ambulance station working with the standard practice. Twenty three protocols were developed which was expected to cover 75% of the patients left at the scene by the attending ambulance crew. The study involved 251 patients in the intervention group and 537 patients in the control group.

Results relating to patient safety included 5 of the 93 patients (5.4%) in the intervention group and 12 of the 195 (6.2%) in the control group were identified who had been left at home and were admitted to hospital in the 14 days after the 999 call. The clinical reviewer judged that 3 patients in each group should have been taken to the Emergency Department at the time of the 999 call. The study failed to demonstrate a change in the primary outcome measure (the proportion of patients not conveyed to hospital) associated with the introduction of ‘treat and refer’ protocols. The limitations identified in the study included the impracticality of being able to randomly allocate patients to the study groups. This was due to the nature of the intervention which required training of staff in new protocols.
The power of the study was also reduced because of a lower recruitment to the study than anticipated.

Advanced Paramedic judgment, decision making and dealing with clinical risk and uncertainty has yet to be widely researched. Shaban, Smith and Cumming (2004) discussed these concepts relating them to the Paramedic setting using two analytical frameworks. They agreed that ‘additional’ clinical risk is placed on any area of emergency care, and that little is known of how Paramedics make judgments and decisions, or how they deal with risk and uncertainty they commonly face in their tasks and the environment, in which they work. The paper written by Shaban et al. (2004) introduces two distinct conceptual frameworks ‘the mechanics of error’ and the ‘lens model’. The first model described by Reason (as cited in Shaban et al, 2004) examines the fundamental concepts of error in adverse events, and the mechanics of error, referring to this as a human condition. The second framework advocated by Hammond and Cooksey (as cited in Shaban et al, 2004) allows for some characterisation of, or insight into risk and uncertainty, and describes judgment processes in instances where the task is not known, such as in the Paramedic setting. The researchers conceive that the lens technique would be useful in the primary analysis of the judgments of Paramedics when attending patients with conditions of unknown aetiology, and that could be achieved by case audit or review.

O’Meara (2003) describes the ‘genesis of existing prehospital care models and role of Advanced Paramedics within the public safety paradigm has resulted in strong reliance on hierarchical structures and relatively inflexible clinical protocols to regulate professional behaviour’. Advanced Paramedic respondents considered that benefits in establishing ECPs would allow more autonomy in practice and the associated advantages in securing professional registration would be the first step towards autonomy in practice. As Advanced Paramedic practice roles continue to evolve the associated autonomy needs to have accountability. Procedures and guidelines can assist Advanced Paramedics in making decisions, but unfortunately humans are not infallible.
Ambulance Regulation and Professional Registration

The New Zealand Nursing Organisation (NZNO) Stakeholder respondent relayed concerns surrounding the issue of non-regulation of Advanced Paramedics. The concern is the potential expansion of roles, but dangerously pushing the boundaries of safety whilst sitting outside the HPCAA (2003) (NZNO Stakeholder, September 14, 2007).

The New Zealand Nursing Organisation is a powerful entity which represents thirty nine thousand health workers. They are a professional body which is regularly sought after to provide comment and submissions on many issues specifically at higher levels. A document of interest is a submission made on behalf of the NZNO regarding the authority to regulate anaesthetic technicians under the HPCAA (2003) (NZNO & PNC, 2007). Referral to this document along with wider consultation could be appropriate when looking to develop Advanced Paramedic registration and regulation further (NZNO Stakeholder, 2007).

The MOH have determined that anaesthetic technicians will be regulated by the HPCAA and now the MOH are requesting submissions on which regulatory body should undertake this role. There are three options outlined in the MOH document:

*The Medical Council:* Due to the close working relationship between anaesthetic technicians and Anaesthetists (anaesthetic technicians work under the direct supervision of anaesthetists) it is reasonable that the authority that is responsible for regulating anaesthetists (the Medical Council) might also regulate anaesthetic technicians.

*The Nursing Council:* While the argument for regulation of anaesthetic technicians by the Nursing Council is not as strong as for regulation by the Medical Council, many anaesthetic technicians are trained and have practiced as registered nurses; therefore, potential also exists for anaesthetic technicians to be regulated by the Nursing Council.

*Establishing a Technicians Board:* The MoH is aware of other technicians groups who are either in the process of preparing an application for regulation or have already submitted an application for regulation which the MoH will be consulting on in the future (Ministry of Health, 2007).

Consideration if and when registration is implemented would be whether ECPs if introduced, would hold their own registration, or that ECPs would be registered as Advanced Paramedics, with adherence to specific practice regulations (Department of Health, 2004).
Professional ambulance bodies

In the United Kingdom, soon after the Health Professions Council (HPC) was formed, it was required that the HPC had to liaise with professional bodies for all the professions that the registrar was responsible for. At that time the only profession not to have professional body was the ambulance profession. The professional body known as the British Paramedics Association (BPA) was set up in order to ensure that the profession would be represented and fulfill the self regulation responsibilities for standards and education (British Paramedic Association, 2008).

According to the information available on the website, a formal business plan was prepared for the BPA in (2003) in an effort to provide some firm direction and structure. Initially, the Paramedic element of the ambulance profession had just been subjected to an increase in HPC fees of some 300%, which had generated significant reaction around the United Kingdom. This fact along with the lack of understanding about being a professional generally was making the attraction of members to the BPA very difficult. Significant concern from Advanced Paramedic respondents and the Stakeholder respondents was the cost involved in establishing registration, retaining registration, the need for indemnity insurance as well and whether this could be a money making venture with very little outcome.

What are the benefits of a professional body?

The BPA cites the main areas for benefit to members lie in the philosophy that the ambulance profession shall work towards undertaking responsibility for their own professional future. Historically the standards worked to and the awards following training have been driven largely by the employers with significant medical support. Having a professional body was the opportunity to change the way that education, training and associated awards are established (British Paramedic Association, 2008). Australia has a well established College of Ambulance Professionals (ACAP). The ACAP Board of Directors is currently seeking input from their membership looking at the specifics of Advanced Paramedic regulation and ways in which a regulatory regime may be progressed. Preliminary work has identified three broadly different models of regulation which are outlined in a document titled 'Defining a Regulatory Framework for Paramedics' (Australian College of Ambulance Professionals, 2007).
The New Zealand emergency ambulance sector does have a professional body in the form of Ambulance New Zealand. Further investigation to determine a strategic course of action to implement this type of concept is a direction worth exploring for the New Zealand emergency ambulance sector.
LIMITATIONS

According to Walonick, 1997 response rate is the single most important indicator of how much confidence can be placed in the results of a survey. A low response rate can be devastating to the reliability of a study. One of the most powerful tools for increasing response is to use follow-ups or reminders (Walonick, 1997). Researchers can increase the response from follow-up attempts by including another copy of the questionnaire. The most successful follow-ups have been achieved by phone calls. Following up phone calls were done with an increase in return of 7%, with a second copy of the questionnaire sent out for completion. Again this was only possible and limited to the database available. Definitely the inability to establish any further connection with the Wellington Free Ambulance group and the Taranaki services also severely limited data gathering.

St John had allowed use of stationery labeled with their brand and postage. When cost is a contributing factor (for a student) the use of these envelopes was greatly appreciated. This however, could have been a serious faux-pas on the author’s behalf. Feedback which was supplied much later from those completing the questionnaire was that there was resistance to completing the questionnaire, based on thought that the research was being conducted for St John on the author’s behalf. This may have had an effect on the response rate from the other streams of emergency ambulance services also – having another service ask for information may not have been entirely acceptable in hindsight.

Limitations within the database may have also contributed in part with the poor return rate. The database was not entirely current. Some Advanced Paramedics may have been included that were no longer working in the capacity of Advanced Paramedics and addresses were not current in some cases. The limitation of the database has also affected results. The demographic data for the Advanced Paramedic respondents should have been compared with the actual total demographic profile of the emergency ambulance service in New Zealand. It was difficult to establish if sampling was representative or if the return rate was higher in males or females. The Wellington Free Ambulance, Taranaki and Auckland Rescue Helicopter Trust questionnaires were sent out for internal distribution by a senior manager. Therefore establishing gender of these respondents was not possible.
Streamlining the questionnaire to the most appropriate questions was also a difficult and important task. It may have improved response rates with a fewer number of questions, although it is difficult to see which of these could have been omitted. One question in both the stakeholder interview and the Advanced Paramedic questionnaire in hindsight could have been posed in a different way. The question referred to where both Advanced Paramedics and Stakeholders would see a New Zealand equivalent based ECP operating. I had chosen a ranking system from one to five (Polit et al, 2001) with an expectation form the author that each number would be ranked in priority order in relation to a most preferred area of need on a continuum, to the least preferred area of need. Interpretation allowed for ambiguity with the results provided quite varied. Examples being that not all of the settings had been included in the ranking tier, or some of the settings received the same number as other settings.

A limitation in the Stakeholder interview was that even though there was telephone dialogue between the researcher and the Stakeholder, some of the Stakeholders elected to send back the interview electronically rather than complete the interview face to face or by teleconference. Polit et al, (2001) states that completion of questionnaires without interview by a researcher will produce different results than those filled in with a researcher. A benefit is that the absence of an interview ensures that there will be no biases reflecting the respondents reaction to the interviewer than to the questions themselves. Polit et al (2001) goes on to say that interviews far outweigh those of questionnaires. The questions a less likely to be misinterpreted by respondents because the interviewer can determine whether the questions have been understood, and can explain in detail if there is misunderstanding.

Another question which was included in both the Advanced Paramedic questionnaire and the Stakeholder interview was “Do you think ECPs would be a realistic option for the New Zealand emergency ambulance services?” The limitation is bias in the result, as inadvertently the question asked for different types of answerers. The Advanced Paramedic questionnaire asked for a Likert type responses ranging from strongly agree to strongly disagree, whilst the Stakeholder interview required a dichotomous (yes/no) response. The question should have asked for the same type of results in both the Advanced Paramedic questionnaire and the Stakeholder interview.
Conclusions

The current New Zealand Health system and the increasing New Zealand population are faced with rising demand for health services. If this is not addressed the consequences are unmet needs for the public, and increased pressure to manage this demand is placed on the current health systems that are in place, with little or no increase in funding or staffing. Relevant to the research is identifying the deficiencies that currently exist within the New Zealand Health system, and linking the findings from the research and evidence from the literature to attempt to identify if establishing ECPs in New Zealand, could assist to improve the current health structure and systems. The issues to be discussed include the potential extension of roles for the New Zealand emergency ambulance sector, a decline in the number of rural health practitioners, and issues within primary health care services and after hours care.

38% of Advanced Paramedic respondents regarded ECPs as a (definitely yes) realistic option for the New Zealand Ambulance Services. Stakeholder respondents unanimously agreed that ECPs would be a realistic option for the New Zealand emergency ambulance services. Respondents have identified that an ECP could be utilised broadly in a variety of primary health care/community, ambulance and hospital settings. Existing relationships between health professional colleagues could be strengthened, allowing collaborative management and cross referral communication was seen as a benefit by the respondents.

Barriers to the introduction of the ECPs would be funding, and cannot be modeled from either the NHS or Australian systems. This needs to be tackled with agreement and financial leverage from the MoH, ACC and from the New Zealand emergency ambulance services. Developing a professional body as is operational in the United Kingdom could assist in policy development of professional standards and an education pathway. It could also promote reputable cross boundary professionalism particularly with other emergency health professionals, which was identified as an advantage by the Advanced Paramedic respondents.
Registration for New Zealand Ambulance Officers has prospective establishment of 2009, according to Ambulance New Zealand. 97% of Advanced Paramedic respondents agreed to being professionally registered and 100% of the Stakeholder respondents also agreed to professional registration. Regulation under the HPCAA and professional registration may assist in alleviating the wider health sector concerns, and will eliminate any confusion to the public and health professional colleagues. Advanced Paramedics are the personnel likely to be able to undertake this innovative role. Motivation levels are high and have been acknowledged within the results with 70% of the Advanced Paramedic respondents acknowledging a desire to undertake an ECP qualification as a new role. Consistently through the results this venture was seen as an exciting role for the New Zealand emergency ambulance services and the New Zealand Health System. Workload and skill maintenance is a possible barrier in rural areas of New Zealand. Cohesion, agreement and communication are crucial to begin with a solid foundation to increase the chance of any sustainability.
Recommendations

1. This research is a beginning point. Consideration of higher level debate of ECPs may be required from the MoH, ACC and engagement from Stakeholders.

2. Generation of a governing body, who would have the responsibility for development of professional standards and education, was suggested by both Advanced Paramedics and Stakeholder respondents.

3. The ECP is an innovative role. It allows the New Zealand emergency ambulance services to raise their profiles as a professional healthcare provider. Advanced Paramedic respondents suggested a clinical career pathway could be developed to augment progression.

4. Professional registration needs to be implemented to provide protection to the public, to show transparency and limit clinical risk realistically through an independent body – such as a New Zealand Ambulance Officers Council.

5. Consideration could be given to delivering education about the HPCAA, as well as a pamphlet with specific ‘frequently asked questions’ concerning professional registration and regulation. This could be achieved through the internal resources of the New Zealand emergency Ambulance services, perhaps in a newsletter or forum delivered to all levels of Ambulance Officers.

6. Further investigation should be undertaken. Visiting and consulting other emergency ambulance services in the United Kingdom and Australia could allow actual experience and supplement ideas in the potential set up and development of a New Zealand comparative system.
REFERENCES


The feasibility of establishing Emergency Care Practitioners in New Zealand

Jackie Clapperton


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Jackie Clapperton


### APPENDICES

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<td>Advanced Paramedic Postal questionnaire</td>
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<td>Appendix Four</td>
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INFORMATION SHEET FOR ADVANCED PARAMEDICS/STAKEHOLDERS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you of any kind and we thank you for considering our request.

What is the aim of the project?
This project is being undertaken as part of the requirements for a dissertation in the Masters in Health Sciences (endorsed in resuscitation).
This study aims to ascertain from New Zealand advanced paramedics whether there is sufficient theoretical knowledge, clinical autonomy and motivation to pursue introducing a formal educational pathway and operational structure for emergency care practitioners in New Zealand. In addition the views of principal stakeholders will be determined to assess the overall feasibility of such a proposal.

What type of participants are being sought?
The research participants in group 1.0 would be New Zealand advanced paramedics and are a purposive sample (Borbasi, Jackson and Langford, 2004). Those included in the study would be advanced paramedics currently employed by a New Zealand emergency level ambulance services and who are currently practising with this qualification. This would be extended to include those advanced paramedics who hold an educational or managerial position within the same organisations. The participants would be recruited with permission from the electronic databases held by identified ambulance services. Confidentiality of the participants would be assured.
The stakeholder participants in Group 2.0 encompasses hierarchical leaders who have a vested interest in ambulance operations, ambulance officer scope of practice and skill level, as well safe practising limits and training.

What will participants be asked to do?
Should you agree to take part in this project, you will be asked to complete the attached questionnaire. This once completed should be sent back in the self-addressed envelope provided by the 28th February 2007.
Please be aware that you may decide not to take part in the project without any disadvantage to yourself of any kind.

Can participants change their mind and withdraw from the project?
You may withdraw from participation in the project at any time and without any disadvantage to yourself of any kind.

What data or information will be collected and what use will be made of it?
The aim of the survey is exploratory and seeks to collect preliminary information under the following headings:

- Basic demographic data
- History of training and years of practice
- Subsequent training pursued by the advanced paramedic.
- The Advanced Paramedics perceived need for further training.
Professional Registration
Emergency care practitioners
Role satisfaction

A series of interview questions is seeking information from stakeholders. The interviews would be semi-structured in design to capture the varying roles of the stakeholders interviewed. The type of questions that would be used are listed below under the following headings:

- Whether they would support the initiative
- Concerns they would have with its implementation
- Funding options
- Protection for ambulance staff through professional registration
- Mode of implementation
- Delivery of an emergency care practitioner education programme
- Vehicles that may be required.

The data will be solely used for the purpose of the study. The student researcher will be solely responsible for the data obtained. The results of the project may be published and will be available in the library but every attempt will be made to preserve my anonymity. You are most welcome to request a copy of the results of the project should you wish.

The data collected will be securely stored in such a way that only those mentioned above will be able to gain access to it. At the end of the project any personal information will be destroyed immediately except that, as required by the University's research policy, any raw data on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed.

Reasonable precautions will be taken to protect and destroy data gathered by email. However, the security of electronically transmitted information cannot be guaranteed. Caution is advised in the electronic transmission of sensitive material.

What if participants have any questions?
If you have any questions about our project, either now or in the future, please feel free to contact either:-

**Jackie Clapperton**
Department of Wellington School of Medicine and Health Sciences
Cell phone 027 419 5450
jackie.clapperton@stjohn.org.nz

Or

**Associate Professor. Duncan Galletly**
Department of Surgery and Anaesthesia
Wellington School of Medicine
University Telephone Number: - (04) 385 5541

The three supervisors for this project include:
**Associate Professor. Duncan Galletly**
**Dr. Tony Smith**
**Professor. Malcolm Woollard**
This project has been reviewed and approved by the Academic Committees of the University of Otago.

THE FEASIBILITY OF ESTABLISHING EMERGENCY CARE PRACTITIONERS IN NEW ZEALAND.

CONSENT FORM FOR

ADVANCED PARAMEDICS and STAKEHOLDERS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;

2. I am free to withdraw from the project at any time without any disadvantage;

3. The data [video-tapes / audio-tapes] will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed;

4. The results of the project may be published and available in the library but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

................................................................................................................. ..............................
(Signature of participant)      (Date)

This project has been reviewed and approved by the Academic Committees of the University of Otago.
The feasibility of establishing Emergency Care Practitioners in New Zealand

This dissertation is specifically looking at the feasibility of establishing Emergency Care Practitioners in New Zealand. I would be very grateful if you would take the time to answer the following questionnaire.

If you have any questions about the information being requested, please contact me by phone on 027 4195450 or email jackie.clapperton@stjohn.org.nz

This questionnaire has been posted to all New Zealand employed ambulance officers designated as Advanced Paramedics; Intensive Care Paramedics; and Advanced Life Support Paramedics employed by the District Health Boards. The designation, specific skill and knowledge level is individual to the emergency ambulance service you may be employed by. For the ease and purpose of this questionnaire I have referred to everyone as Advanced Paramedics.

1.0 Demographic data

1.1 Gender
(Please circle one) Male Female

1.2 Age (in years) ______________________

1.3 Ethnicity (Please tick one that you primarily identify with)
_____ Maori
_____ New Zealand European
_____ Other European
_____ Asian
_____ Indian
_____ Samoan
_____ Tongan
_____ Other (please state) ______________________
1.4 What is the population base you work within?
(Please tick one)

_____ Rural only
_____ Urban and Rural
_____ Metropolitan only

1.5 What region do you work within?
(Please tick one)

_____ Northern/Auckland Region
_____ Midland Region
_____ Central Region
_____ Taranaki
_____ Wairarapa
_____ Wellington
_____ Northern Region (South Island) (now includes Blenheim)
_____ Southern Region (South Island)

2.0 History of Training and Years of Practice

2.1 How long have you worked as an ambulance officer at any level?
(Volunteer through to Advanced Paramedic)

___________________________________________________

2.2 How long have you worked as an Advanced Paramedic?

___________________________________________________
2.3 Who was the main funder of your Advanced Paramedic training? (Please tick one)
    _____ Self
    _____ Employer
    _____ Scholarship
    _____ Other

2.4 What formal qualifications do you hold? (Please list) (Please include all qualifications such as degrees, diplomas, certificates)

2.5 Have you done any tertiary level (associated with a University or Polytechnic) study since becoming an Advanced Paramedic? (Please tick one)

    Yes           No
2.6 Which of the following activities have you been involved with over the previous two years? (Please tick)

- Attended work related conferences
- Presented at work related conferences
- Involved in mortality and morbidity reviews
- Attended skills workshops
- Given lectures/tutorials to other colleagues/peers
- Provided mentoring/supervision to other colleagues/peers
- Other (Please state) ____________________________

2.7 What further training/courses would you be interested in undertaking? (Please list)


2.8 Do you have any extended skills or knowledge that you can utilise in your role as an Advanced Paramedic?

- Rapid sequence induction (RSI)
- Thrombolysis
- Specialist emergency response team (SERT)
- Helicopter response currently
- Helicopter long line training
- Helicopter winch trained
- Registered Nurse
- Enrolled Nurse
- Others please identify below
3.0 **Registration**

3.1 Do you understand the New Zealand Health Professional Competence Assurance Act (2003)?
(Please tick one)

- [ ] Definitely Yes
- [ ] Probably Yes
- [ ] Don’t Know
- [ ] Probably No
- [ ] Definitely No

*Registration can be defined as the recording of professional qualification information relevant to government licensing regulations (Mosby, 2002, p 1480). Its principal intention is to protect the health and safety of the public by ensuring that health practitioners are fit and competent to practise. (Health Practitioners Competence Assurance Act, 2003)*

3.2 Do you think that New Zealand Advanced Paramedics should be professionally registered?

- [ ] Yes
- [ ] No
3.3 What do you think the **advantages** of registration would be for Advanced Paramedics? (If any)

3.4 What do you think the **disadvantages** of registration would be for Advanced Paramedics? (If any)

3.5 What would you think the **purpose** of registration for Advanced Paramedics would be?
3.6 Do you think New Zealand Advanced Paramedics are covered/operate clinically under the Health Practitioner Competence Assurance Act (2003)? (Please tick one)

- [ ] Definitely Yes
- [ ] Probably Yes
- [ ] Don’t Know
- [ ] Probably No
- [ ] Definitely No

3.7 In your opinion as an Advanced Paramedic, have you witnessed any incidents in which patients have been subjected to poor treatment by ambulance officers of any qualification? (Please circle one)

<table>
<thead>
<tr>
<th>Always</th>
<th>Often</th>
<th>Occasionally</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 30%</td>
<td>15-30%</td>
<td>6-15%</td>
<td>1-5%</td>
<td>0%</td>
</tr>
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</table>

4.0 **Emergency Care Practitioners**

4.1 An Emergency Care Practitioner is the next level of autonomous speciality care, (above that of an Advanced Paramedic) which is currently operational within the United Kingdom. Have you heard of this concept?

- [ ] Yes
- [ ] No

*Please read the commentary attached on page 11 before continuing.*
4.2 Would you consider this a realistic option for the New Zealand ambulance services?
(Please tick one)

_____ Definitely Yes
_____ Probably Yes
_____ Don’t Know
_____ Probably No
_____ Definitely No

Why? (Please give reason)

4.3 Would you be interested in undertaking this qualification?

Yes  No

Why? (Please give reason)

4.4 Would you undertake this qualification if you were required to self-fund?

Yes  No
4.5 In the United Kingdom, emergency care practitioners work in a variety of settings. Where would you see a New Zealand equivalent based?
(Please choose 4 options below and rank in priority from 1-4)
1 = highest Priority – 4 = lowest priority

_____ Metropolitan ambulance based
_____ Urban/Rural ambulance based
_____ Rural ambulance based
_____ Emergency departments
_____ Utilised as part of after hour GP practices
_____ Other (please state) ________________________
5.0 **Role satisfaction**  
(Please circle one for each question)

<table>
<thead>
<tr>
<th>5.1</th>
<th>I feel satisfied/happy with my current role</th>
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<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Agree</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>5.2</th>
<th>I feel valued</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.3</th>
<th>I am highly capable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.4</th>
<th>I feel I am experienced in my job</th>
</tr>
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<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Agree</td>
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<table>
<thead>
<tr>
<th>5.5</th>
<th>I fully utilise my clinical skills to the best of my ability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Agree</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>5.6</th>
<th>Are there any other specific skills or knowledge you would think could enhance your practice? If yes, please list.</th>
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Any further comments? 

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The feasibility of establishing Emergency Care Practitioners in New Zealand

This dissertation is specifically looking at the feasibility of establishing Emergency Care Practitioners in New Zealand. I would be very grateful if you would take the time to answer the following interview questions.

If you have any questions about the information being requested, please contact me by phone on 027 4195450 or email jackie.clapperton@stjohn.org.nz

Stakeholders
This interview has been electronically posted and/or verbally conducted to a selected group of ‘Stakeholders’. This group encompasses hierarchical leaders who have a vested specific interest in ambulance operations, ambulance officer scope of practice and skill level, as well as safe practising limits and training. It has also been disseminated to those ‘stakeholders’ who have an interest in evolving trends in primary health care. The outcome of this study has the potential to improve patient care and health services within New Zealand.

1.0 Emergency Care Practitioners

1.1 An Emergency Care Practitioner is the next level of speciality care (above that of an Advanced Paramedic), which is currently operational within the United Kingdom. Have you heard of this concept?

Yes
No

Please read the commentary attached on page 5 or listen to the following commentary before continuing.
1.2 What could you consider to be some of the benefits in establishing Emergency Care Practitioners in New Zealand?

1.3 What extended skill and knowledge base would be useful if Emergency Care Practitioners were introduced in New Zealand?

1.4 Professional standards of clinical competencies would need development for Emergency Care Practitioners. Who should be responsible for the development of these?

1.5 In the United Kingdom, Emergency Care Practitioners work in a variety of settings. Where would you see a New Zealand equivalent based? (Please choose 5 options below and rank in priority from 1-5)

1 = highest priority – 5 = lowest priority

- Metropolitan ambulance based
- Urban/Rural ambulance based
- Rural ambulance based
- Emergency departments
- Utilised as part of after hour GP practices
- Other (please state) ____________________________

2.0 Concerns with implementation

2.1 What are your organisations major concerns with establishing Emergency Care Practitioners in New Zealand? (Under the headings of)

Safety

Workforce
**Management**

**Strategic**

**Policy**

**Oversight**

**Audit**

3.0 **Funding options**

3.1 How do you think the establishment of Emergency Care Practitioners could be funded?

4.0 **Delivery of an Emergency Care Practitioner education programme**

4.1 How would you envisage the training of Emergency Care Practitioners could be implemented?

4.2 What would be the desired minimum/base skill level for an Emergency Care Practitioner?

5.0 **Vehicles that may be required**

5.1 How would Emergency Care Practitioners be physically mobilised? 
Your thoughts and why?
6.0 **Professional registration**

6.1 If introduced should Emergency Care Practitioners be registered in New Zealand?

6.2 What would be the benefits of this?

6.3 What would be the disadvantages of this?

6.4 How might barriers to registration be overcome (if any)?

6.5 What body would your organisation see as providing oversight and quality assistance for Emergency Care Practitioners?

6.6 How would a register be managed?

7.0 **Mode of implementation**

7.1 Emergency Care Practitioners may require clinical support from a medical supervisor. Who would you see being responsible for this?

7.2 If you were to consider how an Emergency Care Practitioner would be utilised, what would your thoughts be?

7.3 Who should be able to request their activation and to what sort of patients?
1.0 Emergency Care Practitioners

1.6 Would you consider this an option for the New Zealand ambulance services?

Yes  No

Why?

1.7 Would you consider this an option for the New Zealand health system?

Yes  No

Why?

8.0 Any other issues?

8.1 Are there any other issues about Emergency Care Practitioners that you or your organisation think are relevant?
Commentary - Emergency Care Practitioner

1. What is an Emergency Care Practitioner?
An Emergency Care Practitioner (ECP) or Paramedic Practitioner is an advanced autonomous practitioner capable of assessing, treating and discharging/referring patients’ at the scene. Usually an ‘Advanced’ Paramedic or nurse who has undertaken Masters specific training and higher education in order to respond to the first contact needs of patients’ accessing urgent care (Department of Health, 2005).

2. Where do they currently operate?
According to Woollard (2006) they are operational in the United Kingdom under a pilot scheme but vary considerably with respect to type and duration of training, permitted scope of practice and even job title.

3. What were the aims in establishing Emergency Care Practitioners in the United Kingdom?

   - Decrease number of unnecessary transports to emergency departments
   - Target patients’ to most appropriate place of care
   - Increase patient satisfaction
   - Preserve emergency ambulances
   - Treat appropriate 111 patients at home and discharge with or without referral
   - Identify patients who could have a delay in hospital admissions
   - Identify the most suitable type of transport e.g. non emergency ambulance or car
   - Arrange direct referral to most appropriate healthcare or social service provider
   - Accept GP requests for home visits to assess patients for which a 111 ambulance may have otherwise been requested

4. What level of study have they done to become an Emergency Care Practitioner?
This varies considerably again. Invariably the training is University based, specifically higher education. The requirement was to complete a Masters Degree as well as ongoing training and education. Clinical supervision for one programme was supplied by general practitioners and emergency department doctors. Two days per week were spent at lectures in a university the rest is in clinical practice. The clinical areas that Emergency Care Practitioners have provided care from includes ambulance based, emergency departments, general practice surgeries, minor injury units and walk in centre’s. This is the training basis for only one tertiary provider in the United Kingdom (Woollard, 2006).
APPENDIX FOUR

Emergency Care Practitioner Specific Competencies


Dealing with patients
- Demonstrate effective and enhanced communication and interpersonal skills when dealing with patients across the lifespan, including those with special needs
- Demonstrate the ability to ask key questions in order to obtain a comprehensive clinical history
- Undertake a holistic assessment of patients in a range of settings incorporating the elements of history taking, conducting the ‘interview’ and developing a therapeutic relationship
- Demonstrate a range of techniques to use in eliciting a comprehensive history from patients
- Demonstrate effective clinical assessment and examination skills including the use of a stethoscope, sphygmomanometer, auroscope, ophthalmoscope, torch and thermometer
- Demonstrate effective physical examination techniques, and in particular, the skills of inspection, percussion, palpation and auscultation
- Demonstrate effective assessment and management of patients who present with violent or aggressive behaviour
- Demonstrate understanding of ways in which violent or potentially violent situations may be managed and defused
- Undertake assessment of patients who present under the influence of drugs and/or alcohol and be able to determine normal presentations and those that deviate from normal
- Demonstrate the ability to perform a rapid assessment of patients’ domestic and social support arrangements and devise appropriate action plans where necessary, including referral to others in the health and social care team.

Understanding basic biosciences
- Demonstrate a good understanding of general anatomy and physiology, particularly in relation to the upper and lower limbs and demonstrate familiarity with related terminology
- Demonstrate a good understanding of the physiological and pathophysiological processes and changes that occur in patients across the lifespan
- Demonstrate a good understanding of the anatomical and physiological differences between adults and children
- Demonstrate a basic understanding of the pharmacology and pharmacodynamics of drugs commonly used in emergency care
- Demonstrate a broad based understanding of drugs commonly used in the routine management of medical conditions and the ability to refer to appropriate information sources for further information
- Demonstrate knowledge of commonly used and misused drugs/substances and their physical manifestations
• Demonstrate the ability to interpret basic investigations including urinalysis, blood tests, glucometers and be able to identify appropriate the pathological investigations required for common conditions and to obtain appropriate specimens in relation to these.

Clinical conditions and presentations

• Undertake assessment of the cervical spine and be able to identify any deviations from normal
• Assess, treat and refer or discharge patients with mild allergic reactions
• Assess patients who present with a range of minor injuries using a structured approach (e.g. the look, feel move approach) and treat, refer or discharge them as appropriate
• Demonstrate confidence in the assessment and management of patients with bony and soft tissue injuries of the upper limbs including the hand, wrist, forearm, elbow and shoulder
• Demonstrate confidence in the assessment and management of patients with bony and soft tissue injuries of the lower limbs including the foot, ankle and knee
• Demonstrate knowledge of and confidence in using the OTTAWA guidelines in relation to musculoskeletal injuries of the lower limbs
• Demonstrate an understanding of the importance of determining the mechanism of injury in relation to patterns of injury and clinical presentations
• Demonstrate an understanding and awareness of the differences in fractures and their management in adults and children
• Demonstrate knowledge and understanding of IRMER regulations and other ionising radiation protection issues
• Understand the indications for requesting basic radiological investigations and refer patients as appropriate
• Demonstrate confidence in the assessment, treatment and management of wounds and lacerations and be able to provide a rationale for all actions and interventions taken
• Demonstrate confidence in wound cleansing techniques and the selection and application of a range of wound care products and dressings
• Demonstrate knowledge and understanding of the management of simple, uncomplicated dislocations in patients of all ages
• Demonstrate confidence in the assessment, treatment and management of minor injuries including animal and human bites, stings and minor burns and scalds
• Understand the indications for the use of walking aids including elbow crutches and axillary crutches, walking sticks and Zimmer frames and be able to demonstrate safe techniques for use
• Demonstrate confidence in identifying the need for and application of a range of splints and supports including slings, collars and bandages
• Demonstrate an understanding of the indications for Plaster of Paris application, the techniques involved, potential problems and instructions for ongoing care
• Demonstrate knowledge and understanding of referral processes and pathways across the health economy and the indications for referring patients
The feasibility of establishing Emergency Care Practitioners in New Zealand

Jackie Clapperton

- Assess, treat and refer or discharge patients who present with minor head injuries and minor neck injuries, providing appropriate follow-up advice where necessary
- Assess patients who present with headaches including migraine headaches, identify differential diagnoses and be able to treat, refer or discharge as appropriate
- Demonstrate the ability to articulate clinical findings in relation to normal and abnormal presentations
- Assess, treat and refer or discharge as appropriate, patients who present with a range of minor illnesses including rashes, respiratory tract infections, sore throats, tonsillitis, earaches, ophthalmic complaints including irritation, inflammation, conjunctivitis and suspected foreign bodies or corneal abrasions
- Perform a simple eye assessment and be able to refer as appropriate those patients who present with a ‘red eye’ or as a consequence of ocular trauma
- Demonstrate familiarity with a range of common ear, nose and throat problems and assess, treat and refer or discharge patients as appropriate, providing a rational for all actions and interventions taken
- Demonstrate knowledge of a range of dental emergencies and oral problems and be able to assess, treat and refer or discharge patients as appropriate
- Demonstrate confidence in dealing with patients presenting with minor complaints including mild allergic reactions, allergic rhinitis, pyrexia’s, local infections, those who have run out of their medication or who present with mild asthma attacks, urinary tract infections or constipation
- Demonstrate knowledge in assessing and managing patients who present with a range of gynaecological complaints including vaginal bleeding, bleeding during pregnancy, dysmenorrhoea, suspected ectopic pregnancy, vaginal discharge, vaginal thrush and those requiring emergency hormonal contraception
- Demonstrate a good understanding of meningitis and meningococcal disease and their related symptoms, signs and immediate treatment
- Assess, treat and manage febrile children, taking particular note of relevant past medical history
- Demonstrate knowledge of and familiarity with local child protection procedures including the Child Protection Register and the Children’s Act and be familiar with indicators of non-accidental injury
- Demonstrate confidence in the assessment and recognition of the sick child and institute immediate and ongoing treatment as required including early specialist referral
- Assess and manage the crying/inconsolable child and his/her carers and demonstrate the ability to conduct a comprehensive patient assessment
- Assess, treat and refer as appropriate those children (and adults) who present as a consequence of toxic ingestion and those who present with urinary symptoms, vomiting, diarrhoea and/or dehydration
- Demonstrate the ability to perform a thorough, systematic assessment and examination of the respiratory and cardiovascular systems, noting in particular key symptoms and signs suggestive of underlying disease processes e.g. clubbing
• Demonstrate the ability to perform a systematic assessment and examination of the abdominal and gastrointestinal systems, in particular having the ability to recognise patients with an acute abdomen, those with acute retention of urine and other acute complaints such as renal colic
• Understand the clinical significance of vital signs in all age ranges
• Demonstrate the ability to assess the patient in pain using a range of assessment tools and administer analgesia using pharmacological and nonpharmacological methods
• Demonstrate the ability to assess and examine the endocrine system and skin
• Demonstrate assessment and examination of the nervous system, both central and peripheral
• Demonstrate the ability to carry out a mental health assessment on a range of patients noting any deviation from normal and the ability to devise appropriate action plans taking note of others involved (e.g. depression and its severity, deliberate self harm and the degree of risk involved, anxiety disorders, phobias, acute and chronic presentations
• Demonstrate knowledge and understanding of the components of the Mental Health Act and their application
• Demonstrate understanding of the issues associated with domestic violence, non accidental injury (in all age ranges), elder abuse and those in the vulnerable groups and be able to devise action plans and/or make referrals as appropriate
• Make sense of and assimilate clinical findings to enable working or provisional diagnoses to be established in relation to a range of presentations
• Demonstrate the ability to assess and examine patients who present with back pain and treat, refer or discharge them as appropriate, providing a rationale for all actions taken
• Demonstrate an understanding of the significance of red flag markers in relation to clinical findings and act accordingly.

Whole systems working
• Describe and explain the purpose and function of the range of settings in which emergency/unscheduled care is delivered, including the ambulance service, primary care, out-of-hours facilities, Walk-in-Centres (WICs), Minor Injury Units (MIUs) NHS Direct (NHSD) and Accident and Emergency (A&E) departments
• Demonstrate knowledge and understanding of the roles and values of those involved in delivering emergency/unscheduled care and develop a diary of local networks across the health community, including relevant contact details, both in-hours and out-of-hours
• Demonstrate familiarity with the prioritisation systems and processes used in A&E departments including triage, streaming and ‘see and treat’
• Demonstrate familiarity with the processes involved in delivering primary care services including booking systems and the roles of all team members, including General Practitioners, District Nurses, Health Visitors, Practice Nurses and Receptionists
• Demonstrate an understanding of the various structures and processes underpinning the organisation of the ambulance service including communications, priority dispatch systems, radio procedures, the range of emergency response vehicles available and activation procedures
• Demonstrate familiarity with equipment particular to the ambulance or out-of-hospital setting including: extrication devices (e.g. KED and RED), long boards, spinal immobilisation devices, carry chairs, lifting cushions, patients slides, portable ventilation systems, manual and electric suction devices, splints (e.g. vacuum, box, or traction) and the advantages and disadvantages of the various modes of transport
• Demonstrate an understanding of scene safety, mechanisms of injury and patient extrication techniques in the out-of-hospital setting
• Demonstrate a good knowledge of interservice working involving all the emergency services, including collaboration and communication and understand of the role and contribution of the wider multi-disciplinary team to the delivery of emergency/unscheduled care
• Demonstrate familiarity with referral processes in relation to the wider health community and how these may be utilised by ECPs
• Demonstrate awareness of the roles and responsibilities of ECPs in relation to sudden death and those of the coroner, his officers, funeral directors and the preservation of forensic evidence, both at the scene and beyond.

**Developing clinical judgement**

• Demonstrate effective clinical decision making skills and the application of sound clinical judgement based on clinical findings
• Make sense of clinical findings and articulate them noting any deviations from normal and develop appropriate action plans in relation to these
• Understand differential diagnoses and be able to make safe and effective decisions including referrals to appropriate specialists or other clinical team members
• Demonstrate evidence of professional development through learning diaries and personal profiles
• Demonstrate an understanding of change management processes.

**Clinical effectiveness**

• Demonstrate an understanding of evidence – based medicine
• Describe the importance of audit in both practice and professional development and its role in measuring and evaluating the outcomes of care
• Demonstrate a clear understanding of the practical use of clinical audit in assessing and validating clinical quality and practice
• Discuss the use of guidelines and protocols in emergency/unscheduled care
• Demonstrate effective critical appraisal skills
• Describe and explain the roles and responsibilities of the ECP in relation to Clinical Governance.

**Treatments**

• Demonstrate an understanding of the principles and practice underpinning the use of Patient Group Directions (PGDs) including their legal status
• Describe and explain the indications for thrombolysis in both hospital and out-of-hospital settings, the various agents involved and the associated risks
• Interpret 12 lead ECGs and react in a timely manner in relation to findings
• Describe the use and benefits of telemetry and telemedicine in the delivery of emergency/unscheduled care
• Demonstrate the ability to objectively assess pain in patients across the age continuum and to achieve effective analgesia with a range of analgesic agents and techniques
• Demonstrate an understanding of the effects of common disease processes such as renal failure and the dynamics of age have on drug effectiveness and the necessary precautions to avoid patient harm
• Describe the principles of safe prescribing and mechanisms for reporting adverse drug reactions.

Legal, professional and ethical issues/dilemmas

• Demonstrate a good understanding of the Code of Professional Conduct and scope of professional practice of ECPs and their significance in relation to the development of clinical practice
• Understand and explain what is meant by accountability, responsibility, delegation, supervision, liability, vicarious liability and professional regulation
• Demonstrate an awareness and understanding of the professional, legal and ethical frameworks within which out of-hospital care is practised and delivered
• Understand and explain what is meant by the terms consent, capacity, confidentiality and disclosure and their application in emergency/unscheduled care settings to patients across the lifespan
• Demonstrate the ability to record and document patient histories, examination findings and treatment decisions and actions, in a succinct and consistent manner
• Demonstrate understanding of the correct handling and stewardship of confidential patient information and familiarity with the Data Protection Act and the role of the Caldicott guardian
• Demonstrate a clear understanding of the legal and prescribing rules associated with the prescribing, administration and supply of medicines
• Demonstrate understanding of the roles and responsibilities of coroners and their officials, in relation to sudden death and the legal and professional responsibilities of practitioners in relation to the preservation of forensic evidence.
Arriving safely

● Demonstrate familiarity with current ambulance service best practice regarding driving (e.g. Institute of Health Care Development (IHCD))
● Demonstrate awareness of guidance on parking upon arrival at incident scenes
● Demonstrate understanding of the principles of scene safety and scene protection
● Describe and explain HAZCHEM codes and the importance of the UN number.

Clinical procedures, (Xi) Additional modular components and (Xii) Chemical, Biological, Radiation and Nuclear incidents.

In addition to those learning outcomes outlined above, students are required to have gained confidence and competence with regard to a number of clinical procedures and skills and achieved those learning outcomes stipulated in the specified modular and specialist courses, namely i.e. Advanced Life Support (ALS), Paediatric Advanced Life Support (PALS) and a pre-hospital trauma or emergency care course such as Pre-Hospital Trauma Life Support (PHTLS), Pre-Hospital Emergency Care (PHEC) or Pre-Hospital Trauma Course (PHTC).