A Model of Continuous Professional Development for Registered Pre-Hospital Practitioners in Ireland

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PhD Thesis

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Submitted to the University of Limerick, March 2015.
Abstract

The introduction of a Regulatory body in Ireland with responsibility for ensuring high standards of education and professionalism for ambulance, and other pre-hospital, practitioners was a welcomed initiative in 2001 due to a need for improvement in care delivered to patients before arrival at hospital.

This Regulatory body, the Pre-Hospital Emergency Care Council (PHECC), was established under Statutory Instrument with an initial priority being to develop three levels of pre-hospital practitioner: Emergency Medical Technician (EMT); Paramedic; Advanced Paramedic (AP). The introduction of these three levels meant that only such registered practitioners could practice in the pre-hospital environment. However for practitioners to renew their registration, they had only to meet simple and minimal criteria with no requirement to demonstrate any level of competence.

The Council’s 2011-2014 Strategic plan identified the need to introduce a system of continuous professional development/competence as a priority.

The purpose of the studies in this thesis was to engage with the three levels of practitioner in Ireland and to seek their views and opinions so as to identify factors that would inform the implementation of a continuous professional competence (CPC) framework for all pre-hospital practitioners. The expectation in when initiating this work was that the results would assist in the introduction of a framework for one group of registrants in particular, EMTs. In reality the outcomes from these studies provided the evidence base when drafting the formal guidance document that was subsequently issued officially to all EMTs in Ireland by the Regulator.
Following that introduction of CPC, a retrospective analysis was performed through engagement with those registrants so to allow for further refinement of the process before the framework would subsequently be introduced to the two remaining registrant groups, paramedics and APs.

At a practical level, this thesis represents the first series of studies to engage with all levels of pre-hospital emergency care registrants on a national level in Ireland and is one of only very few to report nationwide pre-hospital research. Data were gathered using qualitative and quantitative methods, in the form of on-line surveys and focus groups. These data then formed the basis for the initial introduction of the CPC model. After a six-month period, further engagement with registrants provided the additional data to refine the process further. Therefore, this work represented a meaningful process of consultation with practicing pre-hospital care providers that would inform the information to be provided to them by their Regulator and the format in which that would be delivered. To my knowledge, there is no previously published example of such relationship between pre-hospital practitioners and Regulators internationally.

Further, the design of this thesis allowed additional engagement with Irish pre-hospital practitioners following the introduction of CPC. Through publication of the outcomes, the thesis makes a contribution to both the international literature on continuous professional competence (CPC) for pre-hospital practitioners specifically and, in particular, the development of the profession in Ireland. The implementation of CPC aligns Irish pre-hospital practitioners with other well established international best practice models. This thesis, through substantial engagement with registrants, has identified the factors which they believe are important for the successful
implementation of CPC and adds to the international literature on pre-hospital care and, in particular, practitioner competence in this regard.

The model of CPC will have significant implications for all registrants; organisations who operate in the pre-hospital environment; the Regulator; and will positively impact on patient care by ensuring a national standard of competence exists for all relevant practitioners. While Ireland has been the focus of this thesis, the publication of its findings in peer-reviewed journals means that its relevance may extend beyond the Irish setting to those working more broadly in the fields of continuous professional development and professionalism internationally.
Declaration of Originality

I, Shane Knox, declare that the work contained in this thesis is original and, excepting where stated in the following chapters, all work was completed by me.

Shane Knox
Acknowledgements

In the first instance I would like to express my sincere gratitude to my supervisor Professor Colum Dunne for his support, guidance, patience and encouragement throughout my entire studies. Professor Dunne was the one supervisor who commenced this journey with me and remained with me the whole time. For this I am ever indebted to him.

Without the support of my manager Mr. Macartan Hughes, Chief Ambulance Officer and Head of Education and Competency Assurance in the Irish National Ambulance Service (NAS), this study would never have commenced. It was through his proposal to the Director of the NAS and the subsequent approval and support of that director Mr. Frank Mc Clintock that allowed me to be seconded to dedicate my time to the study. I am very grateful to Macartan Hughes for his support, advice, assistance and genuine interest in my studies and to Mr Mc Clintock for permitting my secondment.

I would like to thank Dr. Cathal O’ Donnell, Medical Director of the National Ambulance Service, for assisting and encouraging me with my initial study application to the university. This was a vital first step for me and I appreciate Dr. O’ Donnell’s support.

This proposal was also supported by Dr. Geoff King, the Director of the Pre-Hospital Emergency Care Council (PHECC), who acted in the capacity of external supervisor and always offered encouragement and guidance throughout my programme. Dr. King made the presentation to PHECC Council who in turn accepted it outright. Again, I
greatly appreciate the endorsement of those PHECC council members and appreciate all the support PHECC has given me over the years.

I would like to thank my work colleagues, officers and staff within the NAS College for their support. I would also like to thank all those registrants within the many organisations who participated in surveys and focus groups around the country and, in particular, Ms. Roisin Maguire, Principal of the Civil Defence Training College, for her assistance in organising venues, assisting with focus groups, and for liaising with the Voluntary Organisations.

I would also like to thank Dr. Suzanne Dunne who assisted me with statistics (Nvivo), SPSS, World Café methodologies, formatting, and for always being able to normalise any issues encountered.

Finally, I wish to acknowledge the constant encouragement and support of my wife Síle and our girls: Maria, Niamh and Sarah for allowing me all the study time and for being so tolerant and without whose support I would never have completed this research.
Dedicated to Dr. Geoff King RIP (29th August 2014):

Director of the Pre-Hospital Emergency Care Council (PHECC).

Dr. Geoff King was the inspirational leader of, not just the Pre-Hospital Emergency Care Council, but of pre-hospital care in Ireland. His arrival from Australia to Ireland in 2001 as the first director of PHECC marked the commencement of unprecedented change in ambulance services in Ireland. Geoff was an experienced doctor who had worked in South Africa, Mozambique, Cairns and prior to his appointment to PHECC, was the medical director of the Royal Flying Doctor Service in Queensland Australia. Although few people knew it, Geoff was an Associate Professor at the University of Queensland and a senior lecturer at James Cook University. While he was a registered General Practitioner his specialism was obstetrics and gynaecology and he could talk for hours on obs and gynae, and indeed did so to many an advanced paramedic class in the national ambulance service college.

He was responsible for bringing all the Irish tribes of pre-hospital care together. I honestly have never met an individual who could negotiate, temper and influence discussion and debate like Geoff. He had a warming charismatic influence and it naturally flowed when he entered a room, without him even trying, and all he had to do was smile and say ‘G’day’ or ‘hey’. That did it.

He steered or, maybe sometimes dragged, Irish ambulance services into the 21st Century and he was responsible for introducing the sixth professional register in Ireland for Healthcare professionals – Pre-hospital practitioners.
Geoff invited me to commence further studies and always showed a keen interest in the subject area. He agreed to be the external supervisor for this PhD and would always check my progress either in person or by phone.

Geoff was an outstanding individual who changed the practice of pre-hospital care in Ireland and our services, individuals, organisations and most importantly our patients have all benefitted from this Australian luminary. We were privileged to have such an outstanding and progressive leader who professionalised our discipline.

Geoff passed away in August 2014, we all miss him and I am forever indebted to him. May he Rest in Peace.
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<td>Continuous Professional Competence</td>
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<td>CPD</td>
<td>Continuous Professional Development</td>
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<td>DFB</td>
<td>Dublin Fire Brigade</td>
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<td>EMT</td>
<td>Emergency Medical Technician</td>
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Executive Summary

Internationally there has been a move towards the development of Pre-Hospital Practitioners (ambulance personnel) through improved educational programmes and the introduction of continuous professional development/education. A report on Irish ambulance services in 1993 recommended a significant improvement in the quality of training provided to ambulance personnel and the future development of paramedic training. Another significant recommendation was the introduction of an advisory body to ensure uniform standards of service in terms of response times, training, and cost effectiveness. This body was established in May 1998 as the National Ambulance Advisory Council (NAAC). However, because it was an advisory body with no statutory powers, the NAAC’s ability to achieve its objectives was limited and it was replaced in April 2000 with a regulatory body, the Pre-Hospital Emergency Care Council (PHECC).

PHECC is an independent statutory agency with responsibility for standards, education and training in the field of pre-hospital emergency care in Ireland, and is the national Regulator. This Regulator is responsible for establishing and maintaining a register of pre-hospital emergency care practitioners at three levels: Emergency Medical Technician (EMT), Paramedic and Advanced Paramedic (AP). Their mission statement is to ‘protect the public by specifying, promoting and monitoring standards of excellence for the delivery of quality pre-hospital emergency care for people in Ireland’.
In its 2011-2014 Strategic Plan, PHECC identified the need to develop and implement a continuing professional competence framework to support all levels on the register. Continuous Professional Competence (CPC) is the term adapted by PHECC, which is synonymous with Continuous Professional Development, but is specific to Irish pre-hospital registered practitioners. Prior to the commencement of this study, professional development was a random and fragmented process. In future, all registrants will be required to show evidence of CPC as part of their re-registration as practitioners with PHECC.

The objective of this study, in the absence of any other consultation with pre-hospital PHECC registered practitioners, was to engage with Emergency Medical Technicians (EMTs), paramedics, and advanced paramedics (APs). Information from the consultative process would then inform the development of guidelines for practitioner Continuous Professional Competence (CPC). Subsequent to this national engagement, guidelines would be introduced to one registration group and further feedback would be sought after the initial period of CPC introduction. This feedback from practitioners would assist with the development of future CPC guidelines for the other practitioner groups.

In-line with the PHECC Strategic Plan and the objectives of this thesis, the first 3 year cycle of CPC commenced for PHECC registrants at EMT level in November 2013.
Summary Introduction – Personal interest

I am an Assistant Chief Ambulance Officer in the Health Service Executive – National Ambulance Service fulfilling the role of Education Manager, and I have been in this position for three years now. I have twenty-five years service in Northern Ireland and Ireland.

Originally from Portadown in County Armagh, Northern Ireland and from a large family of twelve children, my fulltime working life commenced when I entered the family business at the age of seventeen. This career pathway was almost mandatory for all eight sons and was used as an apprenticeship to life and gave each of us time to decide to move on and into other roles, if that was what we wished to do. Only three brothers remain in the family business today.

Having served eight years in the family business in a period of dark and difficult times in Northern Ireland, for any business, and for every resident, I left to seek a new job in a completely different role. I successfully applied for a position in the Northern Ireland Ambulance Service (NIAS) and commenced work there in February 1990. My initial posting was with patient transport services before progressing to the Ambulance Technician training programme in May 1990. I completed the first stage of that training programme and was presented with the ‘Best student’ award. I worked in one of the ambulance service’s busiest stations, Craigavon, County Armagh, and responded to thousands of emergency and non-emergency calls throughout my career. I completed the mandatory three years as an ambulance technician before applying for and commencing the paramedic programme. In March 1994 I qualified as an Ambulance Paramedic (advanced life support practitioner) and continued to work as a senior crew member within the Northern Ireland Ambulance Service. I thoroughly
enjoyed my work through the nature of being able to assist patients and relatives at a time when they needed immediate care provided by ambulance staff. I had the pleasure of working with a professional workforce in what were sometimes extremely challenging times. My station colleagues were an exceptional group who collectively shared valuable learning experiences with me and taught me a huge amount. I genuinely enjoyed every day of going to work in the NIAS. However my desire was to develop myself further and whilst I enjoyed working with other staff members, whether on calls or through study for various in-service programmes, I wished to move on yet still not lose the link with patients. My focus was to try and move towards training within the service.

Personal circumstances changed and I married and moved to County Longford in 1998 and commenced training for a new position in the first advanced ambulance communications centre in Ireland, based in Tullamore, County Offaly. I worked there until 2002 and then applied for a job as a Training and Development officer in the National Ambulance School in Dublin. I completed all the necessary programmes required for a Training Officer, in the Mersey regional ambulance service in Liverpool and then the Regional Training Centre in Ladybridge Hall, Bolton with the Manchester ambulance Service. In 2004/2005 I completed the first Irish advanced paramedic (AP) Higher Diploma programme and was one of the first qualified APs to be practising in Ireland in late 2005. I progressed to being the first ambulance training officer to be selected as a supervisor for the advanced paramedic clinical internship in 2006 and the first Irish training officer seconded to the AP course.

Since the beginning of my ambulance career I have been studying and working on work-related programmes. I enjoyed the progression within the ambulance service and felt the time was right to continue to further study. In 2006 I commenced a Master
of Science degree in Human Resource Management and Development with the University of Leicester and completed that programme in late 2009.

I authored a chapter in a UK Paramedic Textbook in 2007 and was also a multi-chapter reviewer for the same text. In 2010 I was a reviewer for another pre-hospital text and in 2011 I was a chapter reviewer for a Tactical Medicine book.

I was directly involved with the advanced paramedic programme as a training officer since 2006 – 2008 when I left to manage a new National Ambulance Service (NAS) training facility in Galway. I have still managed to maintain my role as a clinical internship supervisor for trainee advanced paramedics; I assess trainee paramedics; I am an examiner for the regulatory body and for our current university partners. I am a registered Tutor and Facilitator with PHECC and I am a member of both the PHECC’s Medical Advisory Committee and Education and Standards committee. In January 2015 I was nominated to represent the National Ambulance Service and appointed by the Minister for Health to PHECC council.

My Masters Degree dissertation subject was continuous professional development and as part of that study I conducted a semi-structured interview with the Director of the Pre-Hospital Emergency Care Council, Dr. Geoff King. A luminary in the advancement of pre-hospital care in Ireland this Australian doctor has caused the most progressive and positive move for Irish ambulance practitioners through his steady guidance, guile and interaction with multiple agencies and professions. Dr. King encouraged me to progress further with my studies. I subsequently submitted a proposal to complete a PhD on Continuous Professional Development for PHECC registered practitioners. This was presented to PHECC Council and accepted/supported by those members.

Through agreement with my Chief Ambulance Officer, Mr. Macartan Hughes, the National Director of the Ambulance Service, Mr. Frank Mc Clintock and with the
request of Dr. King I was seconded to PHECC and commenced my studies with the University of Limerick in February 2011. The Graduate Entry Medical School in the University of Limerick accepted my proposal and Professors Paul Finucane and Colum Dunne agreed to supervise my studies. My secondment ended with PHECC only ten months later when I was promoted to the rank of Assistant Chief Ambulance Officer and commenced duties within the NAS in September 2011. However I continued my studies.

It became abundantly clear to me, as my time in the ambulance service continued, I wanted to progress the development of, not just practitioners but also the profession, so that Irish pre-hospital practitioners would be recognised as some of the best in the world. Part of our development as a profession must include our ability to improve ourselves long beyond our time spent in the ambulance college so that we are always striving to do the very, very best for every patient we encounter. Dr. King and PHECC had laid down robust training, education and clinical standards now there was an opportunity to progress the CPD agenda and I wished to be part of that implementation. I believed that Irish practitioners were motivated to embrace CPD but only if they were part of the planning process. This belief formed the basis of my PhD proposal and a requirement for the achievement of my overall objective; the introduction of a model of CPD. The successful implementation of this CPD model would, I had hoped, ensure the high quality of care provided by practitioners to the benefit of patients; allow me to achieve my goal of graduating with a PhD, while again adding to the overall development of a growing profession in Ireland.
Chapter One

Background to pre-hospital care in Ireland and rationale for this thesis.
Introduction

Ambulance services in Ireland have undergone significant development in a relatively short period of time. Progress has been steady and continues to keep pace with international best practice. The Health Act 1970 [1] provided the statutory basis for the provision of ambulance services by each individual Health Board. Ambulance services were then provided on a regional basis until the formation of the Health Service Executive (HSE) in 2005 and the simultaneous establishment of the National Ambulance Service (NAS). The Ambulance services, including pre-hospital care, in Ireland are now provided by the NAS of the HSE with the exception of Dublin City were, in practice, two ambulance services provide full time year round services: HSE-NAS and Dublin Fire Brigade (DFB) [2]. Dublin City Council are contracted by the HSE to provide 11 DFB ambulances in Dublin City while the NAS provides services to the remainder of the city and county [3].

In 1993 a report from the Irish government [4] stated that the ambulance service “forms a valued and integral part of the emergency services” and “was used as an extension of the hospital service with the objective of getting the patient into hospital as quickly as possible so that advanced medical treatment could be provided by a medical practitioner”, thus implying: 1) that advanced medical treatment could only commence within a hospital and 2) that the only purpose of the ambulance service was to provide transport for patients.

The same report also recommended a significant improvement in the quality of training provided to ambulance personnel and the future development of paramedic training. One final significant recommendation was the introduction of an advisory body to ensure uniform standards of service in terms of response times, training, and cost effectiveness. This body was established in May 1998 as the National
Ambulance Advisory Council (NAAC). However, because it was an advisory body with no statutory powers the NAAC’s ability to achieve its objectives was limited [5] and it was replaced in April 2000 with a new Regulatory body, the Pre-Hospital Emergency Care Council (PHECC).

PHECC is an independent statutory agency with responsibility for standards, education and training in the field of pre-hospital emergency care in Ireland [6]. PHECC are responsible for establishing and maintaining a register of pre-hospital emergency care practitioners at three levels: emergency medical technician (EMT), paramedic and advanced paramedic (AP).

In 2007 PHECC published their Education and Training Standards which outlined course objectives and learning outcomes for all certifiable or registrant level programmes. These standards were based on the UK standards, previously used by the NAS, and accredited then by the Institute of Health and Care Development (IHCD) for ambulance technician and ambulance paramedic programmes.

**Pre-Registration Training**

In the United Kingdom in 2004 it was noted that there was a need to revise the ambulance education and training curriculum to align it to a more consumer led health service which would reflect the broader professional base seen in programmes associated with other healthcare professions [7]. However the system then in the UK, and the system currently used in Ireland, of pre-qualification training does have significant advantages. It produces relatively skilled personnel in a short period of time, the standard of training is high, and the feedback from courses is good [8]. In addition, there is benefit in utilising experienced pre-hospital practitioners currently
employed by an ambulance service [9] during the clinical components of the programme.

Some of the criticism associated with this traditional model of ambulance training is that it does not deliver the range of skills necessary in a modern healthcare system, it is highly skills focused with emphasis on the management of those with life threatening conditions, but who are comparatively uncommon in the workload profile of ambulance staff [10]. Studies also indicate the need to move from a protocol driven practice service based on limited underpinning knowledge [11]. However, in Ireland ambulance staff are not directed by protocol but guided by Clinical Practice Guidelines (CPGs). There is also a need to move from surface (rote learning) to deep thinking strategies with a greater decision making repertoire [8] and the ability to use knowledge and experience to problem solve and provide solutions for what has become a more complex practice for pre-hospital practitioners [12].

UK ambulance training had a narrow focus on technical clinical skills and the transportation of the sick and injured. While the skills used were updated over time, the curriculum paid little attention to the broader repertoire of professional skills and attributes demonstrated in other healthcare disciplines such as critical thinking, familiarity with clinical governance and health policy, patient assessment and autonomous practice. Many of these changes have occurred in other healthcare disciplines in response to a changing health service that has become more consumer led [7].

There is a need for those involved in health care education to produce personnel who are ‘fit for practice’ within a seamless service and to break down the ‘tribalism’ that exists reducing the barriers between professions and specialities [8].
The Current Educational Model and Drivers For Change

Utilisation of ambulance services has increased markedly in recent years [13-15]. In other countries (e.g. UK, Australia, etc), there has been a transition of pre-hospital care from a simple response, deliver first aid and transport model to a more integrated role within the health system including stronger links to the primary care system [12]. Education now requires a greater emphasis on decision-making, treatment and where appropriate, referral [16]. The use of formal referral pathways by ambulance services is a relatively new development that indicates the changing role of the ambulance practitioner [15]. A report published by the Department of Health in the UK stated that community paramedics were ‘treating patients at home; helping to provide primary care out of hours services; helping to respond more efficiently and effectively to non-urgent 999 calls; and that there was further scope to improve education and training of ambulance staff to create a workforce that could provide a greater range of mobile urgent care’ [17].

In Australia, Victoria’s Metropolitan Ambulance Service (MAS) introduced a referral service in 2003 to divert low priority calls to other services such as GPs, nursing services and non-emergency patient transport [18]. The number of calls managed by the referral service increased from 5669 in its first year of operation, to 26,528 in 2006-07. The number of referrals grew in a similar fashion, from 3747 to 18,516 [18]. When the model of pre-hospital care changes, so too must the education of pre-hospital practitioners. Internationally ambulance practitioners are required, more than ever, to have sound decisions making skills regarding treatment, transfer to a pre-determined hospital depending on the patient’s condition/injury, discharge on scene, or treat and refer.
In 2013, recommendations were made to the Clinical Commissioning Groups in England that one of their priorities should be to manage urgent and emergency activity through an integrated approach, particularly for emergency medical admissions to hospital. The report highlighted the importance of a whole systems approach, ‘involving hospitals and community, primary and ambulance services through joint service planning and sharing clinical information across different agencies’ [19].

A review of the Health and Social Care services in Northern Ireland [20], recommended many changes in services to the local community. The report stated that the ambulance service should have the ability to transfer patients to urgent care centres rather than defaulting to major acute hospitals or to refer patients back to their General Practitioner if they do not see the need to transfer the patient to either urgent or emergency care centres.

The Welsh ambulance service also intends to reduce the amount of ‘unnecessary 999 journeys’ to emergency departments by introducing a clinical model that supports non-conveyance [21], while the Scottish ambulance service, in conjunction with National Health Service (NHS) Highland, permit paramedics to perform health checks as part of the wider anticipatory care programme and thereby increases Primary care capacity while ensuring the skills maintenance of paramedics in remote areas [22].

**Professionalisation**

Like other healthcare professions ambulance practitioners and paramedic practice is beginning to be defined as an academic discipline with its own body of knowledge, its own literature and increasingly its own research base providing evidence for practice [15]. Key defining features of a ‘profession’ include: expertise in a discrete area of
specialist knowledge; autonomous practice; standardised educational preparation, and explicit professional ethics [23].

Yet practitioners must embrace the multitude of activities that contribute to a professional’s development and the outcome of good CPD should be practitioners with increased competence and improved patient care [24].
The Role of the Regulator - the Pre-Hospital Emergency Care Council (PHECC).

The PHECC is, inter alia, charged with protecting the public through promoting and monitoring standards of excellence. PHECC’s leadership role in advocating further development of pre-hospital care is highly influential and it has also acted as an important driver of research and collaboration between ambulance services, general practitioners, training bodies and academic institutions [25].

As part of its regulatory role PHECC will want to ensure that all registrants are competent, up-to-date and in-line with professional pre-hospital best-practice. Developing a robust model of certifiable CPC is central to this objective.

PHECC has identified the CPD issue as extremely important. The PHECC Annual Report 2008 stated: ‘Council has prioritised the following initiatives for 2009 and onwards…the development and implementation of a comprehensive Continuous Professional Development (CPD) framework’ [26].

If an appropriate model of CPD was developed then it would be the first of its kind in Ireland for almost 5,000 registered practitioners (total = 4994: 419 Advanced Paramedics, 2129 Paramedics and 2446 EMTs (6th March 2015)) and, as a consequence, would add significantly to the development of the profession itself.

PHECC has introduced many initiatives and standards that have progressed the role and skills of pre-hospital practitioners in Ireland, including:

- Standards in education and training
- Recognition of training institutions
- Implementation of a trainers’ framework
- Registration of personnel
- Clinical practice guidelines (CPGs)
The Regulator (PHECC), as part of their regulatory function, introduced voluntary registration for all practitioners in March 2006. This voluntary registration by all practitioners simply meant that they would all sign-up to a PHECC register. There was no requirement to show evidence of competence, other than annual certification in cardiopulmonary resuscitation (CPR). In order to re-register, practitioners had to submit a completed ‘self-declaration form stating that they are currently practicing, are of good character and in good health and would commit to the PHECC code of conduct and ethics.

In the future, the Regulator would insist that in order to maintain their registration status, all registrants would have to show evidence of continuous professional competence (CPC). This is similar to other regulated professions in Ireland including nursing and, as a result of the Medical Practitioners Act (2007), medical doctors. This Act states:

*A registered medical practitioner shall maintain the practitioner’s professional competence on an ongoing basis pursuant to a professional competence scheme applicable to that practitioner*[27].

Currently there is no specific model of continuous professional development that addresses the needs of the Regulator, the employers (HSE-National Ambulance Service, Dublin Fire Brigade and Private Ambulance Services), the Voluntary Organisations (Civil Defence, Order of Malta Ireland, St. John Ambulance, Irish Red Cross, etc.) and the registrants.
Research Objectives of This Thesis

The specific objectives of the research were to:

- Locate the study in the wider literature on continuous professional development.
- Ascertain the professional development requirements of key stakeholder groups (e.g. advanced paramedics, paramedics, and emergency medical technicians) through primary research data collection.
- Recommend a model of CPC which will meet the needs of the various stakeholder groups involved in delivering an effective pre-hospital service to patients.
- Implement a model of continuous professional competence (CPC) to address current requirements of PHECC registration, with the potential to expand and augment.
- Commence CPC with one registrant level in the first instance and review that model, with a view to implementing the revised model with the remaining two levels of registrant.
- Review models of continuous professional development from other international pre-hospital services.

Prior Research

There are two key areas of prior research which have relevance for this study – contextual background and substantive material. In terms of context, the pre-hospital emergency care field has experienced incremental changes instigated by the formation of PHECC. Over a period of time the pre-hospital emergency care field has
challenged long established practices such as: strong unionisation, lack of structured training, weak accountability mechanisms, and the challenges posed by a more litigious environment where assessment of risk is central to the way in which health professionals now operate.

In short, the organisational culture has moved from one of inertia to a more receptive environment in which the Regulator has induced a momentum and acceptance of the need for change. It is therefore timely that CPC becomes more formalised in this era of improving professional practice. High profile cases in allied professions such as medicine (e.g. Shipman and Neary) [28, 29] have prompted a reconsideration of operating practice and the need for continuous professional development not only in terms of higher risk but also to provide improved care to patients. The tradition of graduating from a training programme and obtaining a license for life seems naïve in this era [30].

Substantively, CPD in the pre-hospital emergency care field has developed in other international settings (e.g. Norway [31], Australia [32], Canada [33] and the United Kingdom [34]). This study would therefore draw on best practice experience elsewhere, accepting that CPD is context specific and may not be imported without adaptation – hence the importance of the Irish context discussed above. Anecdotal evidence from international settings would suggest that although CPD has emerged in response to the needs for regulation it has paid less attention to the job specific requirements of professionals in their field of practice. There appears to be a misalignment between the requirements for regulation and the on-the-job needs of practitioners. Whilst the need for regulation and professional training are not mutually exclusive, evidence from international settings would suggest a greater need for alignment. A study based on the Irish experience could result in an emerging model of international best practice from which others could learn.
Research Approach

In the first instance, this thesis sought to define precisely what is understood by CPC, its key components, the benefits for patients, participants, employers, and the role of the Regulator therein. The study would also identify what type of educational methodologies was best suited to the registrants. This would involve an educational needs assessment to determine which types of CPC activities registrants would prefer. It was important to define the parameters of the study to ensure it was realistic and feasible. Consultation with the registrant groups was essential. This consultation commenced through discussion, surveys and focus groups with the immediate stakeholders: three PHECC registered levels within the various organisations: HSE – National Ambulance Service, Dublin Fire Brigade, Voluntary Organisations, Private Providers, Defence Forces, Coastguard, and specialist Garda (Irish Police) Units.

The first outcome of the study was to introduce a compulsory model of CPC for one registrant group. The study was widely participative, iterative and incorporated a process of validation by participants to ensure maximum buy-in and optimal prospects for successful implementation. In short, gathering information from a wide range of stakeholders not only ensures incorporation of their ideas in any emerging model but is more likely to secure their endorsement of the final outcome.

This study is the first time Irish pre-hospital care practitioners have been asked for their opinion to help inform and shape a model of CPC. With the introduction of a CPC model for EMTs in November 2013, this study has laid the basis for the CPC model for all three registered levels and has added value to the field of research in pre-hospital care. The introduction of CPC will mean that practitioners will have, at the very least, documented evidence of competence and certification of skills thus ensuring a minimum national standard for all practitioners.
The Study Components

Prior to any work involved in this thesis initial discussions were required with the Regulatory body executive and leaders of the voluntary organisations. These discussions highlighted the plans for the introduction for CPC in Ireland and the gap in knowledge regarding the attitudes and awareness of pre-hospital practitioners with respect to a) the need for such requirements and b) what aspects of CPC they believed to be key to their roles and the format that would be most relevant and useful to them. Therefore the first stage of the thesis involved three separate but converging pathways: engaging with the Regulatory body executive and leaders of the voluntary organisations; reviewing the literature with an emphasis on CPD and quantitative research from ambulance and other healthcare professions; engaging with a registrant level group, EMTs, to inform the design of a questionnaire.

The next stage involved engaging with the higher level registrant groups, paramedics and advanced paramedics, to determine an appropriate methodology for CPC activities; designing a questionnaire to distribute to EMTs, paramedics and advanced paramedics.

This was then followed by analyses of the data and identification of CPC activities which would be suited to all registrants. This educational needs assessment led to the design and draft publication of a guidance booklet for the first registrant group: EMTs. The draft document was presented to focus groups for feedback leading to the refinement of the proposed CPC activities and eventual publication of a CPC Guidance booklet for EMTs. The publication of the booklet coincided with the introduction of CPC as a compulsory requirement for EMT registration with PHECC. Following publication groups of EMTs were facilitated whereby their actual experience of CPC over the prior six months and their evaluation of the guidance
document were determined. The outcomes of this work would inform the next (potentially improved) iteration of the guidance document and its modification for use by higher level registrants.

**Engaging with the PHECC executive**

The PHECC executive consisted of the Director, Registrar, three Programme Officers and one administration manager. Meetings were convened at least monthly, to inform the group of progress and any issues that may arise. There was a need to elicit any feedback or concerns members of this group may have had with regard the proposed direction of the study.

It was agreed, based on a presentation made to this group, that the emergency medical technician (EMT) cohort should be the first registrant level to engage with for feedback and input into the type of CPC model. The basis for selecting this registrant level was due to the fact that the majority of EMTs were members of voluntary organisations and, by the very nature of their association, meant that they were highly motivated and enthusiastic individuals. Consultation with this group would commence initially with their respective national leaders of training.

It was also agreed that simultaneous engagement with advanced paramedics who had recently completed a programme of training to ‘up-skill’ them to the new PHECC clinical practice guidelines, would be appropriate. This training was delivered using a novel methodology and it was determined that feedback from this level of registrant would be timely and could inform the study.
The Journey

A summary of the preparation for and key component parts of the thesis.
Meeting with Leaders of the Voluntary Organisations

Four meetings were organised with leaders of training in the main voluntary organisations: The Civil Defence; Irish Red Cross; Order of Malta Ireland; and the St. John Ambulance Brigade. The purpose of these meetings was to determine their requirements from a new CPC model and keep the group involved so that the implementation of the model could be introduced with minimal disruption. Any concerns or issues they might have could be addressed before the introduction of the CPC model and they could be kept informed of the developing model so that they could in turn answer any questions from their EMT members who would be the first registrant level to complete compulsory CPC.

Reviewing the literature

There was a need to review the current relevant literature related to CPD/CPC for healthcare professionals with a particular emphasis on pre-hospital care and ambulance practitioners. There was also a need to review literature identifying CPD and quantitative research to determine what recent studies had been completed. These studies could inform our proposed surveys and questionnaires for distribution to registrants.

Engaging with a registrant level group to inform the design of a questionnaire

An invitation to present at a biannual pre-hospital conference in 2011 [35] was used as a platform to engage with EMTs. Instead of presenting to the conference the designated session at the event was advertised as an opportunity for EMTs to interact and contribute to the discussion regarding a model of CPC for PHECC registrants. Responses at the conferences were recorded and summarised using mind mapping
[36] software. This exercise was used, combined with the literature review identifying quantitative research, to construct a questionnaire for distribution to all registrants.

**Review of Questionnaire**

The first draft of the questionnaire was forwarded for review to the Head of Department at the Statistical Consulting Unit within the University of Limerick (CSTAR) for guidance and any required changes. In addition I completed a course on ‘Questionnaire Design’ presented by CSTAR. All amendments to the questionnaire were made in accordance with the feedback from the statistical unit and then forwarded as part of the Ethics approval application.

**Ethics approval and application to the PHECC Registrar**

Conduction of the study and its design were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland. In addition an application to the PHECC Registrar was made to seek permission for the survey to be distributed to all registrants, with a focus on the previously decided group: EMTs.

**Consulting with senior managers of the National Ambulance Service (NAS)**

It was important to engage with senior relevant managers of the NAS as one of the key stakeholder groups with the largest number of paramedics and advanced paramedics in Ireland. The meeting objectives were to discuss how they might facilitate CPC for staff/registrants; inform them of the need to ensure that new registrants will be required to show evidence of CPC to maintain their registration;
consider the integration of CPC into their future strategies for staff and answer any concerns they may have about CPC and registration.

The NAS team consisted of the National Director, the Medical Director, and the Head of Education and Competency Assurance. The CPC team comprised the PHECC Registrar and the researcher.

This was a productive meeting and while it cannot be stated that the meeting prompted the introduction of policies related to CPC and registration of staff these policies were designed, approved and published within four months of this consultation [37, 38].

**Informing Registrants**

Through the PHECC website (www.phecit.ie) and via the PHECC newsletter, *The Voice*, registrants were informed of the study before commencement [39] and then again before the distribution of the electronic survey [40].

**Consulting with the PHECC Clinical Care Committee**

One of the committees within PHECC was nominated as an overseeing committee; the clinical care committee. The proposal to survey registrants and the objectives of that survey were communicated to members of the clinical care committee within PHECC. No objections were raised and the proposal to distribute the survey to registrants was supported by this committee.

**Engaging with another registrant group to determine an appropriate methodology for CPC activities**

Following the introduction of new PHECC clinical practice guidelines (CPGs) in 2010 an ‘up-skilling’ programme was developed and implemented for advanced paramedics
(APs). Recognising that practitioners may have varying learning styles: those who learn by doing; those who focus on the underlying theory; those who need to see how to put their new knowledge into practice; and those who learn by observing and reflecting on what happened [41], the training methods employed included four discrete modalities:

- Self-directed learning from a purpose-designed pre-course educational manual
- A written assessment workbook based on the manual and new CPGs
- A two-day ‘hands-on’ course delivered centrally comprising 15 small group practical sessions with discussion-based skill stations
- Practical scenario-based assessment, where candidates were required to manage a complex clinical scenario in front of their peers as part of the final assessment.

To inform future educational programme development for these CPC activities we sought to determine which teaching method was most effective for medium-term learning from the perspective of AP learners. To do so, a short answer survey was devised measuring the effectiveness and user-friendliness of each training method, particularly in relation to self-reported behaviour change [42]. (Chapter 3)

**Survey circulation – EMTs**

Following receipt of ethics approval and a final review of the survey by the statistical unit within the University of Limerick, the first questionnaire was distributed to registered EMTs. All EMTs (925) registered to practice in Ireland were contacted by email. Questions were entered into a Survey Monkey™ (www.surveymonkey.com) on-line questionnaire. A link was provided to the survey and to a concise, unbiased explanation of the survey topic. Participation was voluntary and anonymous. Consent
to participate was recorded [43] and there was a 43% (n=399) response rate (Chapter 4).

**Survey Circulation – paramedics and advanced paramedics**

The survey was modified slightly to accommodate paramedics and advanced paramedics and circulated to both groups. All registered paramedics and advanced paramedics (n=1816) were invited by email to complete an anonymous on-line survey. The overall response rate was 43% (n=789). This study suggested that Irish paramedics and advanced paramedics are supportive of CPC linked with their professional development and registration. Blended learning, involving evidence of patient contact, team-based learning and practical skills are preferred CPC activities [44] (Chapter 5)

**Drafting of the guidance document in preparation for issue**

Following collation and analysis of the data gathered from the surveys a draft Guidance Booklet was designed by the researcher and supervisor. This booklet was reviewed by the PHECC executive and agreement reached and a decision was made to circulate to focus groups of EMTs for discussion and amendment (Chapter 7).

**Focus Groups**

Three focus groups were utilised to discuss the booklet using a version of the ‘World Café’ method of facilitation (Chapter 7). This is a small group process in which individuals experience a series of dialogues with other participants. Three groups comprised of all three registrant levels were convened regionally, collectively representing a nationwide perspective with a total of sixty-three participants.
Feedback from these groups further informed, refined and modified this Guidance Booklet.

Publication of the CPC Guidance Booklet for EMTs following consultation

This booklet was published both in hard copy and on-line [45] in November 2013 and was distributed to every registered EMT in Ireland. This marked the commencement of mandatory CPC for the first level of PHECC registrants – EMTs (Chapter 8).

Focus Groups – EMTs post CPC introduction

Six months after the introduction of EMT CPC 5 groups of EMTs participated in focus group discussions and these data are included in Chapter 9. The intention was to engage further with EMTs and seek feedback on the process so that the model might be further refined with a view to introducing the same model for paramedics and advanced paramedics.
References


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34. Continuing Professional Development and Your Registration [http://www.hpc-uk.org/assets/documents/10001314CPD_and_your_registration.pdf]


39. Pre-Hospital Emergency Care Council: PHECC Voice 2010

40. Pre-Hospital Emergency Care Council: PHECC Voice 2011
   [http://www.phecit.ie/PHECC/Publications_and_Resources/Newsletters/Newsl etter_Items/Summer_2011/Continuous_Professional_Competence__CPC_.asp x]

    Maidenhead, UK: Peter Honey Publications 2006.


Chapter Two

A review of prior literature related to continuous professional competence in allied health professionals internationally, with emphasis on the Irish setting.
Introduction

Ambulance services in Ireland have undergone significant development in a relatively short period of time. Progress has been steady and continues to keep pace with best international practice. The Irish ambulance service has its origins in the transport of sick persons to local infirmaries and workshops. During the Jacobite/Williamite conflict at the end of the 17th century, wounded soldiers were brought from Athlone (County Westmeath) during the siege for treatment at the Royal Hospital Kilmainham in Dublin. This was the last major war in Ireland where large armies fought pitched battles. By mid-19th century ambulances were controlled by the relieving officer in the ‘workhouse’ for the purpose of transporting the dead and dying to and from the workhouse. Such transport was usually by donkey and cart. Towards the end of the 19th century horse-drawn ambulances were used in which a stretcher was carried [1]. In the early 20th century motorised ambulances were controlled by the County Councils and were the responsibility of the hospital matron or County foreman. Their function was for general transport and patient transport. In the early 1970s, Ireland’s ambulance service became associated with the transport of patients to infirmaries and workhouses [1]. The Health Act 1970 [2] provided the statutory basis for the provision of ambulance services by each individual Health Board. Ambulance services were provided subsequently on a regional basis until the formation of the Health Service Executive (HSE) in 2005 and the simultaneous establishment of the National Ambulance Service (NAS). Since then, ambulance services in Ireland have been provided solely by the NAS with the exception of Dublin City where Dublin Fire Brigade (DFB) offers a parallel, somewhat integrated, service [3]. Currently, Dublin City Council is contracted by the HSE to provide 11 DFB ambulances in Dublin City while the NAS provides services to the remainder of the city and county [4].
In 1993, a report from the Irish government [1] stated that the ambulance service ‘forms a valued and integral part of the emergency services’ and ‘was used as an extension of the hospital service with the objective of getting the patient into hospital as quickly as possible so that advanced medical treatment could be provided by a medical practitioner’. Thus, this report implied that advanced medical treatment could only take place within a hospital, and that the sole purpose of the ambulance service was to provide patient transfer.

However, the same report also recommended a significant improvement in the quality of training provided to ambulance personnel and development of paramedic training. An additional recommendation was the introduction of an advisory body for paramedics to ensure effectiveness of practice. The resultant body was established in May 1998 as the National Ambulance Advisory Council (NAAC). However, as an advisory body without statutory powers, the Council’s ability to achieve its objectives was limited [5] and it was replaced in April 2000 by the Pre-Hospital Emergency Care Council (PHECC).

**The Regulatory body – the Pre-Hospital Emergency Care Council (PHECC)**

PHECC is an independent statutory agency responsible for standards, education and training in the realm of pre-hospital emergency care in Ireland [6]. The agency is responsible for the registration of pre-hospital emergency care practitioners at three levels: emergency medical technician (EMT), paramedic, and advanced paramedic (AP).

In the 2011-2014 PHECC Strategic Plan, the need for a continuing professional competence (CPD) framework to support pre-hospital registered practitioners was
stated [7]. “Continuous Professional Competence” (CPC)” was adopted by PHECC as synonymous with CPD. The initial three-year cycle of CPC was scheduled to commence in 2014. Indeed, PHECC has committed to introducing CPC, both in May 2012 [8] and re-iterated in January 2013 [9].

At present no system of CPC exists - professional development is a random and fragmented process but, in the future, registrants will be required to show evidence of CPC as part of their re-registration as practitioners with PHECC.

This is similar to what other health professional regulators require, both nationally (e.g. An Bord Altranais – the nursing regulator) and internationally (e.g. Health and Care Professions Council in the UK). PHECC is, inter alia, charged with protecting the public through promoting and monitoring standards of excellence. As a result, PHECC will want to ensure that all registrants are competent, up-to-date and in-line with professional pre-hospital best-practice. Developing a robust model of certifiable CPC is central to this objective.

PHECC has identified the CPC (CPD) issue as extremely important. PHECC’s Annual Report 2008 stated: ‘Council has prioritised the following initiatives for 2009 and onwards…the development and implementation of a comprehensive Continuous Professional Development (CPD) framework’[10].

PHECC has introduced many initiatives and standards that have progressed the role and skills of pre-hospital practitioners in Ireland, including:

- Standards in education and training [11]. Ensuring that all Recognised Institutions (RIs), the training institutions accredited by PHECC to provide recognised programmes of pre-hospital training, develop respective course curricula in accordance with these national educational standards.

- Recognition of training institutions [12]. PHECC ensures that training institutions that wish to deliver programmes of education for pre-hospital
practitioners and responders are accredited in accordance with the PHECC Council rules and regulations [13]. One of the functions of PHECC is to ‘recognise, in accordance with rules made by Council, institutions providing [this] education and training’. Implementation of a trainers’ framework [14]. This framework outlines the competencies required for trainers to teach on PHECC accredited programmes.

- Registration of personnel [15]. A register was developed to allow registration and licensing of all pre-hospital practitioners at three levels: emergency medical technician (EMT); paramedic and advanced paramedic (AP).
- Clinical practice guidelines [16]. These are algorithms of care used by practitioners to guide them with patient management across an array of medical and trauma conditions for adults and paediatrics.

PHECC registered EMTs, paramedics and advanced paramedics will be required to provide evidence of CPC experience as part of their re-registration process analogous to requirements of regulating bodies in other health professions, both nationally and internationally [17-24]. If such a model were to be implemented, it would be the first of its kind in Ireland for all ambulance practitioners and add significantly to the development of the profession itself.

Registrants may not be aware of the benefits of CPD or the potential support mechanisms available, including dedicated time off for training, fee reimbursement, and credit recognition as no evidence of engagement exists currently. Addressing the concerns of those participating in CPD may be vital for a programme model to be successful.

The aims of this review are to examine the current literature involving correlations between continuous professional development (CPD), regulation and the professionalisation of emergency medical technicians, paramedics and advanced
paramedics. Furthermore, this review will examine the reported benefits and difficulties encountered by other professions (internationally) regarding regulation of CPD and how CPD relates to professionalism with a view to extrapolation into the Irish setting.

Is there consensus regarding what Continuous Professional Development is?

Definitions of continuous professional development span an array of professions; each definition focusing on CPD from a different perspective. CPD is commonly used to describe a process of development following a professional training programme. Other terms are used interchangeably, including Lifelong Learning (LLL), Continuing Professional Education (CPE), Continuing Vocational Training (CVT), Continuing Medical Education (CME), Post Qualification Development and Continuing Education (CE) [25, 26]. While these terms are commonly associated with the concept of CPD, Henwood et al [27] argue that there is a distinct difference between CPD and continuing education (CE), on the basis that CPD reflects the need for a lifelong, systematic learning experience whereas CE tends to involve intermittent learning episodes. Dowds and French [28] suggest that CE is less beneficial than CPD due to the passive learning models involved in CE compared to the active and experimental learning models of CPD. The British Construction Industry Council [29] has adopted what is now one of the most commonly accepted definitions of CPD: ‘CPD is the systematic maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for execution of professional and technical duties throughout the individual’s working life’. This definition relates entirely to the
individual and their ‘professional duties’ and is not linked to the employer. It was modified slightly by Henwood et al [27] and adopted by the College of Radiographers (UK) to make clear the association between ‘practitioners’ and the ‘service provided’. Specifically related to healthcare professionals, a definition was provided by the UK’s Health and Care Professions Council (HCPC). The HCPC is a UK Healthcare Regulator with over 310,000 registrants from 16 disciplines. The HCPC defines CPD as ‘a range of learning activities through which health professionals maintain and develop throughout their career to ensure that they retain their capacity to practice safely, effectively and legally within their evolving scope of practice’[30].

Perhaps a more accurate description of CPD for healthcare professionals is that defined by the South African Regulator, the Health Professions Council of South Africa (HPCSA):

‘The purpose of CPD is to assist health professionals to maintain and acquire new and updated levels of knowledge, skills and ethical attitudes that will be of measurable benefit in professional practice and to enhance and promote professional integrity. The beneficiary will ultimately be the patient/client’[31].

The HPCSA’s definition links the individual with both the profession and the integrity of the profession. Their definition does not alone refer to ‘knowledge, skills and attitude’ but includes ‘ethical attitudes’ linking this to their code of professional conduct and ethics [31]. The inclusion of ‘measurable benefit’ is significant as CPD would be otherwise meaningless. Yet probably the most important part of this definition is linking the benefits of CPD to the patient/client.

The Irish Nursing and Midwifery Regulatory body (An Bord Altranais agus Cnáimhseachais na hÉireann), provide a similar definition that links the benefits’ of continuing nursing education to the patient: ‘...it consists of planned learning experiences which are designed to augment the knowledge, skills and attitudes of
However this definition is not linked to any requirement for Irish nurses and midwives to participate in CPD programmes to maintain registration.

**Is CPD an Individual or Shared Responsibility?**

There has been considerable debate as to whether responsibility for CPD lies with the individual or the employer. Madden and Mitchell [33] define CPD as ‘the maintenance and enhancement of the knowledge, expertise, and competence of professionals throughout their careers according to a plan formulated with regard to the needs of the professional, the employer, the professions and society’. The use of the word ‘competence’ in the context of CPD implies an outcome in terms of performance. Notably, this definition explicitly recognises the employer as a stakeholder in the CPD process. Henwood *et al* [27] go further and believe that the registration body, professional body, employer, educator and individual all have roles to play in CPD.

While Smethers [34] argues that CPD is the individual’s own responsibility, and not ultimately the employer’s, Cross *et al* [35] offer another perspective in relation to CPD and nursing in Ireland. They suggest that CPD also ‘assists employers to avoid charges of vicarious liability by ensuring that they take reasonable steps to ascertain that their employees are competent to carry out their duties’.

Morgan *et al* [36] also associated CPD with more than just the individual by identifying three main themes implicit in explanations of the motivation to adopt CPD: Organisational, individuals gaining competence for advancement and the professions concerned with updating to maintain professional competence.
The Professional Associations Research Network [37] conducted research to determine who derives benefit from CPD: the professional, the employer, the profession itself, the general public, or a combination of the above. The authors suggest all of these stakeholders benefit from CPD. Not all professional bodies interpret CPD in this way and for some CPD is explicitly for the benefit of stakeholders beyond the professionals themselves: the profession, the professional body, employers, society or the general public.

The responsibility for CPD lies with a range of different partners, all with different agendas, which may not necessarily by synonymous. However the outcome should always be that CPD benefits the patient [28].

These definitions at least suggest that CPD related to healthcare professionals is a process that involves developing practitioners and maintaining competence for the benefit of society with regard to the needs of the employer and the profession itself.

**Is there a need for CPD?**

**Government reports**

“Building a culture of Patient Safety” [38], a report on patient safety and quality assurance in the Irish health service, asserts that health professionals can no longer be regarded as ‘trained for life’ upon qualification and that systems are required to ensure lifelong learning, professional development and regular competence assurance. This would in turn provide a competent workforce of skilled professionals who would be fit for purpose and competent in managing patients’ needs.

The report also states that employers should have systems in place to ensure that all professional staff participate in CPD and are provided with adequate time and resources to do so. Similarly, the Irish Health Information and Quality Authority
(HIQA) recommends promoting a supportive environment for patients, service users and staff that emphasises the importance of learning in order to improve the service for all [39]. More specifically, this HIQA report also asserts that ‘individual members of a workforce must be skilled and competent’ and it recommends that services should ‘facilitate staff in maintaining and developing their competencies to fulfil their responsibilities in delivering high quality and safe care’. In relation to CPD, this HIQA report also recommends that employers should facilitate staff in ‘maintaining necessary competencies to meet their relevant professional registration requirements’ [39]. The UK’s Care Quality Commission compliance requirements stipulate that registered staff must have appropriate support to enable them to deliver care and treatment to service users safely and to an appropriate standard, including: professional development; being enabled, from time to time, to obtain further qualifications appropriate to the work they perform [40].

A report produced by the Department of Health and Children in Ireland [41] outlines the discussions that occurred between the Department and various health professionals and related to issues that may be encountered in trying to form a national registration body for healthcare professionals. The group comprised 16 professional bodies in total, with no representation from pre-hospital care.

The document is detailed and topics such as legislation, formation, remit etc. were all discussed. CPD was included as an obvious link between continued registration and mandatory CPD for registrants to maintain their registration with the Regulator. The importance of CPD is emphasised: ‘because of a growing concern about the need continually to retain competence within the profession rather than merely to attain competence at the beginning of one’s professional life’ [41].

The report recognised a key distinction between two main categories of CPD: one is to maintain and update professional competence and is profession-specific, while the
other focuses on areas of personal development. The professional bodies and the Department both concurred that the focus should be on the first type of CPD, maintaining professional competence and that competence-based CPD must be a compulsory element of statutory registration.
CPD and the Irish Ambulance Service

A study commissioned by the Pre-Hospital Emergency Care Council (PHECC) and carried out by the Centre for Immediate Care Studies, Department of General Practice, University College Dublin gave relevant examples of CPD from allied health professions and included a discussion paper regarding Continuous Professional Development for Emergency Medical Technicians in Ireland [42].

At the time, the term ‘emergency medical technician’ was relevant and related to the legislation under which PHECC was established [43]. The term was also associated with the national examinations PHECC implemented whereby successful candidates would be awarded the National Qualification in Emergency Medical Technology (NQEMT) [6].

Ten principles of professional commitment are listed, some of which are currently within the PHECC code of professional conduct and ethics [44], but only one of these principles is discussed in-depth: professional competence.

Eraut [45] discussed the issues surrounding Continuous Professional Development and the relationship between professional knowledge, education and competence. He argued that while much emphasis is placed on continuing education there is less of an emphasis on competence and the assessment of that competence within a profession. Eraut (1994) described how the best managers support CPD through appraisals and funding while the worst do neither. Additionally, he suggested that there may be a more covert reason for supporting CPD, that of assisting with organisational change, career development or new aspects of professional work, rather than improving the quality of current professional performance.

Bury (2004) differentiated between ‘competence’ and ‘performance’: ‘competence is the ability to carry out a task or role; performance is the business of carrying out that
task or role [42] and suggested that ‘in healthcare, performance is the more desirable target of any educational activity... a more valid strategy but one with less reliability since it is more difficult and variable to deliver on’.

Miller’s theory of hierarchical learning [46] is used to describe how activities, related more closely to the day-to-day practice of the professional and are most closely linked to performance- based learning. Conversely, classroom, passive learning, or attendance at conferences, relating poorly to the day-to-day activity, have low validity but are commonly the type of CPD or Continuous Medical Education (CME) offered due to the fact that these types of activities are easily achievable.

This discussion on the various methodologies used in CPD/CME programmes continues and the authors cite Davis et al [47] study of 14 randomised controlled trials of didactic versus interactive CME interventions. That study concluded that didactic sessions did not appear to be effective in changing performance whereas interactive sessions can affect practice and sometimes healthcare outcomes. The discussion concluded with the suggestion that if the learning strategies are interactive, relevant, practice-oriented and delivered in a non-threatening atmosphere, then there can be a change in the professional’s behaviour.

Bury & Cummins [42] described the perceived provision of CPD at that time within the Irish ambulance services. It is interesting to note that more than ten years later the same limitations are prevalent:

- Small numbers of Training and Developments Officers (TDOs)
- Wide ranging services and training roles for TDOs
- High service demands (with year-on-year increases nationally)
- Absence of linkage to contractual or registration requirements
- Absence of career or financial incentives
- Absence of a culture of continuing professional development
Perhaps only the last listed limitation has changed somewhat given that all paramedic post-graduate interns since 2008 must present a CPD portfolio at the end of their 12-month internship programme within the HSE-National Ambulance Service as guided by the PHECC education standards [11]. Under those same education standards advanced paramedics must maintain a portfolio of learning during their post-graduate internship, although this was only introduced in 2010. However both examples do account for some change in the culture relating to CPD, even if it was imposed by PHECC through the training institution responsible for the programmes.

The summary of Bury and Cummins [42], similarly acknowledges barriers that have not changed since 2004:

‘there is a clear recognition of the professional requirements for skills maintenance and keeping up to date with new information among EMTs themselves and among management of services – however, resource limitations and the absence of functional models have prevented regional or national initiatives to be undertaken’ [42].

The final chapter in the report consists of a discussion paper. Various models of CPD for EMTs are considered and recommendations made. The first point considered is that the link between registration and CPD should also be linked to a contract. This could be the case for new contracts perhaps but trying to change current contracts would have the potential to cause serious industrial relationship issues. The other disadvantage stated by the authors is that ‘CPD structures could be perceived as disciplinary rather than quality assurance tools’ [42]. They recommend that compliance with CPD should be a requirement for renewal of EMT registration by PHECC.

The question of whether CPD should be either profession or employer driven is discussed. The suggestion that the working environment must facilitate CPD with structures such as protected time and funding support for attendance at approved
courses could be well received by practitioners, but perhaps not by management of organisations within the current financially restrained economic environment. The next question posed by the authors is whether CPD should be compulsory or optional. It would appear that the authors believe the only purpose of optional CPD would be in the initial introduction of the scheme and that it should only be used as a transitional arrangement before a system of mandatory participation is introduced. However Dowds and French [28] suggest that there seems to be no link between mandatory CPD and any improvement in competence or change in practice. In addition they argue that mandatory CPD, while it may provide evidence of competency, could be viewed as restrictive for practitioners in that it takes away their right to decide their own educational requirements and may also be viewed as an invasion of practitioner autonomy.

Bury and Cummins also highlighted the need to inform EMTs of the consequence of non-compliance with CPD requirements ‘every effort should be made to encourage compliance but it is essential that non-compliance with CPD structures should be understood to carry penalties’ [42]. If the practitioner is non-compliant with the CPD requirements then, the authors suggest, a fixed period of remediation should be made available and if this was not used or the EMT was unsuccessful then a limited form of registration may be required to enable sufficient supervised practice to facilitate re-registration. It is important to note however, that while the authors suggest the process to maintain registration they did not consider the absolute extreme, i.e., if the EMT failed to meet the CPD requirements and failed to complete the remediation. This may cause an issue for PHECC as this could lead to the practitioner not being re-registered, as opposed to being ‘struck-off’ the register as this is not within the legislation under which PHECC was established [6].
Finally, clinical governance arrangements must be explored by all parties involved as CPD structures raise many clinical governance issues and professionalism should be seen as a key driver to the introduction of CPD [42].

Overall this report gives a brief but concise view of other profession’s CPD frameworks and makes suggestions for the implementation of a CPD framework for Irish EMT practitioners. Although the report was completed in 2004, one of the most notable elements is that the barriers that existed then to the introduction of CPD for EMTs appear to remain today.
Healthcare Professionals and CPD

As there are multiple healthcare professions, and too many to consider in turn, some examples are discussed in more detail than others. Chapters five and six include references to radiographers, pharmacists, medical practitioners, nurses and dieticians [48, 49]. As the largest healthcare profession, Nursing and Midwifery was selected as one of the main professions to be discussed. A review of Irish physiotherapists is also included as there are Irish studies of CPD and physiotherapists [28, 50] and this is a profession, within Ireland, that has considered introducing CPD since the mid 1960s. Finally, nursing and physiotherapy have succeeded in being recognised as professions due to their strategic alliance with medicine [51] which was a further reason for focusing on these professions in the discussion on CPD.

Nursing and Midwifery

The Nursing and Midwifery Council (NMC) (UK) in a Green Paper on workforce for health [52] discussed the importance of highly trained professionals who are up-to-date with developments in healthcare. In addition the NMC calls for continuous professional development to be a requirement for all healthcare professionals in all EU Member States and that competent authorities within those should set national CPD standards. The paper goes even further adding that CPD in some member states operates on a voluntary basis and that the European Commission should make CPD a compulsory requirement for healthcare professionals in their career development.

In this context it is not clear if the NMC is referring only to nurses and midwives in the European community, as the paper itself relates to the recognition of nurses’ and midwives’ qualifications within Europe. However, usually when the term ‘healthcare professional’ is used it relates to all professionals within the healthcare sector [52].
Irish Nursing

The Irish nursing and midwifery board (An Bord Altranais agus Cnaimhseachais na hÉireann) the regulator for nurses and midwives does not require registrants to show evidence of competence and to practice as a nurse or midwife in Ireland. Instead to practice, or maintain practice nurses/midwives must: be on the active register; pay the annual retention fee; comply with any fitness to practice restrictions or conditions attached to their registration.

In addition, it’s recently published (10th December 2014) ‘Code of Professional Conduct and Ethics’ under Principle 3, ‘Quality of Practice’ requires the registrant to be: “competent to practise safely as a nurse or midwife. If there are limitations to your competency, you and your employer should address them so that you can practise safely and within your scope of practice”[53].

The Irish nursing and midwifery board has introduced a system whereby Continuing Education Units (CEUs - points awarded for CPD programmes) are allocated to approved CPD training and education programmes. However, according to its guidelines on CPD ‘the Board does not require a Registered Nurse or Midwife to submit evidence of continuing education/CPD to the Board’ and, additionally, ‘the Board does not specify a minimum number of CEUs to be achieved by a registrant’[54]. This is not the case for nurses in other jurisdictions.

Nursing Council of New Zealand

As a consequence of the Health Practitioners Competence Assurance Act (HPCA), New Zealand [55] regulatory authorities have significant power in relation to professional competence and the Act requires them to ‘set standards of clinical
competence, cultural competence, and ethical conduct to be observed by health practitioners of the profession’. The Nursing Council of New Zealand (NCNZ) issues annual practising certificates (APC) which allow the nurse to practice/work and also has the authority to decline to issue an APC if the applicant has, at any time, ‘failed to meet the required standard of competence, failed to comply with conditions, not completed an ordered competence programme, or not held an APC (or practiced) for 3 years preceding application’ [55]. In 2004 the NCNZ implemented their Continuing Competence Framework which specified three main aspects associated with the maintenance of a personal professional profile and self declaration of competence, which is required on an annual basis [56].

These are:

**Evidence of ongoing professional practice**

1. Nursing practice in a capacity for which a nursing qualification is required in order to practise in direct relationship with clients, or in nursing management and administration, nursing education, nursing research or nursing professional advice or policy development – minimum of 60 days or 450 hours within the last 3 years.

2. Evidence of ongoing professional development: Ongoing education – minimum of 60 hours in the last 3 years, relevant to work environment and practice as a nurse.

3. Evidence of meeting the Nursing Council’s competencies for the nurse scope of practice: Being able to meet the Council’s competencies for your scope of practice i.e. Registered Nurse, applied to the area or context in which you practise [56].

In 2004 the NCNZ began approving professional development and recognition programmes (PDRPs) as recertification programmes under section 41 of the HPCA Act [55]. This was to allow nurses who were already demonstrating continuing
competence through PDRPs to be exempt from recertification audit. PDRPs are developed by employers and professional organisations to recognise and support individual nurses. The assessment processes they use are based on the submission of a practice portfolio [57].

Following the introduction of the Continuing Competence Framework (CCF) in 2004 the Nursing Council of New Zealand commissioned a major research project in July 2009 to determine if the way it was currently measuring competence – through practice hours, professional development hours and assessment of competence – was the best way to determine continuing competence [58]. The key findings were: the overwhelming consensus of key stakeholders was that the CCF is a critical and important mechanism to ensure nurses are fit and competent to practice; seventy-six percent of survey respondents believe the Council’s CCF and processes for renewing practicing certificates provides the mechanism to ensure nurses are competent and fit to practice; the development of the CCF was well researched and included extensive consultation with stakeholders.

There were additional findings: there was a lack of clarity with regard the role, responsibility and accountability of the Council, the individual nurse and the employer in terms of ensuring continuing competence to practice and public safety; questions were raised regarding the verification and legal status of the ‘self-declaration’ on the application for practicing certificate form.

Five percent of nurses renewing their practising certificates annually are randomly selected for individual recertification audit. The statistical findings from the audits conducted over the previous five years suggested that the five percent measure is appropriate and effective. This recertification audit is generally considered by respondents to be an important quality indicator that provides a measure of validity and reliability to the CCF.
International Nursing: a consensus model for continuing competence

Vernon [59] proposed an international consensus model for the assessment of continuing competence in nursing. This was a consensus view agreed amongst nursing regulatory experts and regulatory authorities from Australia, Canada, Ireland, New Zealand, the United States of America and the United Kingdom. Table 1 gives an overview of the international continuing competence framework from the nursing regulators within the selected countries.
Table 1. Current continuing competence frameworks

<table>
<thead>
<tr>
<th>Country and Regulator</th>
<th>Continuing Competence Frameworks</th>
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<tbody>
<tr>
<td><strong>New Zealand: Nursing Council of New Zealand</strong>&lt;br&gt;(National Framework)</td>
<td>Recertification of practicing certificate annually&lt;br&gt;Maintain a professional portfolio:&lt;br&gt;Self-declaration (self assessment against relevant competencies for practice)&lt;br&gt;Practice – minimum of 450 hours (60 days) in previous 3 years&lt;br&gt;Professional development minimum of 60 hours in previous 3 years&lt;br&gt;5% audited annually</td>
</tr>
<tr>
<td><strong>Australia: National Nursing and Midwifery Board of Australia</strong>&lt;br&gt;(National Framework)</td>
<td>Revalidation of registration annually&lt;br&gt;Maintain a professional portfolio&lt;br&gt;Formal self-declaration of competence annually&lt;br&gt;Practice – must have practiced in previous 5 years or completed return to practice programme – statutory declaration from individual or employer indicating hours spent in practice&lt;br&gt;Continuing professional development (CPD) minimum of 20 hours annually&lt;br&gt;2% audited annually</td>
</tr>
<tr>
<td><strong>Ireland: An Bord Altranais agus Cnáimhseachais na hÉireann – The Nursing and Midwifery Board of Ireland</strong></td>
<td>Annual payment of a ‘retention’ fee to remain on the register of Nurses and/or Midwives&lt;br&gt;Currently no mandated or formally monitored continuing competence requirements&lt;br&gt;No audit requirement</td>
</tr>
</tbody>
</table>
| **United Kingdom:** Nursing and Midwifery Council (UKNMC) (National Framework) | Required to renew registration every 3 years  
Maintain professional portfolio  
Self-declaration – complied with all prep standards and signed notification of practice or intent to practice  
Prep practice standard- minimum of 450 hours in previous 3 years or undertaken approved return to practice programme  
Prep continuing professional development (CPD) standard in previous 3 years  
No audit % stated – Risk approach |
|---|---|
| **United States of America:** National Council of State boards of Nursing (NCSBN, Council of Regulators-incorporated Federal model) (national principles requirements vary across states and territories) | Annual revalidation of registration – models vary significantly between states. Indicators include:  
Self-declaration, including self-assessment of competence  
Declaration of criminal convictions, physical, mental, and drug related issues that affect the ability to provide safe effective nursing care  
Continuing education credits  
Practice hours  
Separate legislative jurisdictions/regulatory boards in each state/territory. Mutual recognition agreements some states  
Audit requirements exist in some states – risk based approach in some others |
| Canada: Canadian Council of Registered Nurse Regulators (CCRNR 2011) | Revalidation of registration  
Self-declaration including self assessment  
Continuing education – annual requirements  
Report of CE activities and evaluation of learning needs  
Development of a learning plan, report on previous plan  
Peer feedback/review meetings  
Practice – minimum of 1,125 hours in 5 years  
Requirements vary between the legislative jurisdiction  
No Audit is stated |
|---|---|

[59]
Agreement was reached on the components of the best practice international consensus model and the following were included as ‘guiding principles’: common language-lexicon of terminology; best practice continuing competence framework (CCF); mandatory assessment linked to annual recertification/revalidation/relicensure; indicators of continuing competence; self-assessment; mandatory practice hours (specified number/timeframe); annual audit of a percentage of practising population; peer assessment [59].

Irish Physiotherapists

The Irish Society of Chartered Physiotherapists (ISCP) identified in their strategic plan of 1966, that CPD was a key area for development and this was reiterated by the Department of Health and Children in 2001 [28]. The ISCP introduced CPD in July 2005 [50]. In 2006 the ISCP’s ‘position statement on continuing professional development’ stated that ‘chartered physiotherapists are autonomous practitioners and are therefore responsible for their own CPD needs and activity’ and that ‘the responsibility for CPD lies with the ISCP member’ as described in their Rules of Professional Conduct [60]. Although CPD was introduced in 2005, by 2014 the physiotherapy discipline was not regulated by the Health and Social Care Regulator (CORU).

The Health and Social Care Professionals Act [61] became law in 2005, this in turn allowed for the creation of the Irish Health and Social Care Professions Council in 2007, who later changed their name to CORU. CORU is the Regulatory body and has responsibility for twelve healthcare professions. Currently (early 2015) there are only four full registers opened however they plan to open all other registers in 2015-2017. In addition they intend to add two more professions to their list of twelve in 2015. In
May 2014 the Minister for Health appointed the Physiotherapists registration board and it is the intention of this registration board and CORU to open the Register for physiotherapists in late 2015 [62]. Of the four professions registered with CORU currently there is no requirement for any of their registrants to maintain CPD. However, it is hoped that CPD for Social Workers will be introduced in 2015 [62].

The format of CPD within Irish Physiotherapy

Where CPD occurs in a structured environment the Irish Society of Chartered Physiotherapists (ISCP) class this as formal while other planned or unplanned learning is classed as informal. The ISCP share the view of the World Confederation for Physical Therapy in that the emphasis should be on self-directed learning and learning outcomes instead of simply accruing hours [63]. The ISCP asks members to accumulate 100 hours of CPD over a three year period yet does not stipulate how these hours can be reached. A balance of formal and informal CPD with a minimum of 30 points in each category being accrued and the development of a CPD portfolio by each member is the requirement set out. Random audits may occur of an individual’s portfolio at the end of the three year cycle.

Dowds and French [50] make the point that CPD should include both formal and informal activities and that the informal activities are often performed routinely without being documented as CPD. In addition to documenting the routine activities such as in-service training, clinical supervision and performance appraisal they advocate ‘reflection’ on the informal activities combined with attendance at conferences and courses. In their opinion, CPD activities could be enhanced if there were CPD co-ordinators or mentors in the workplace.
The ISCP formal activities include short courses, conferences, post-graduate courses (certificates, diplomas, MSc, PhD) in collaboration with third level institutions, mandatory training, clinical interest group events or workshops and scientific meetings. Informal activities are sub-divided into planned and unplanned activities. Planned activity is any activity that is performed to meet pre-determined learning needs. Unplanned activities include: clinical supervision, reflective practice, in-service training, journal clubs, peer review and other day-to-day activities.

From all the activities listed ‘at the core of CPD is the concept of reflective practice’ [28]. According to Ashton [64] it is the integration of new knowledge into practice through use of reflection that improves and updates skills and knowledge. While reflection is used to improve clinical practice it is not solely associated with improvement in clinical practice and it could also be used for improving upon other professional issues; conflict management, managerial skills etc. The authors maintain that reflection is not a natural process and that the skills required to reflect effectively need to be learned and practiced. The basis of good reflection is the ability to be self-critical and analytical. The use of reflective practice tools or templates allows the practitioner to describe the reflection and document the exercise for insertion in their CPD portfolio.

Reflection is then linked to clinical supervision where discussion around patient incidents or interventions is used to improve future patient care. The importance of clinical supervision is substantiated by the fact that of a list of 16 CPD activities staff grade physiotherapists, in an acute hospital setting in Ireland [28], stated this was the most important.

While this array of CPD activities allows flexibility for the physiotherapist can there be an objective measurement of how these CPD activities impact on patient care or improved performance? A study physician performance and healthcare outcomes
carried out by the University of Toronto Davis et al [47] explored the impact of Continuing Medical Education (CME). The study reviewed related literature from 1993-1999 and concluded that some evidence exists that shows interactive CME sessions enhance participant activity and provide the opportunity to practice skills, can effect change in professional practice and on occasion, healthcare outcomes. Conversely, the study also suggests that didactic sessions do not appear to be effective in changing physician performance.

While this study by Davis et al could be classed as a robust review of the existing literature at the time, it is important to note ‘that what was measured in this review was performance change, not learning’ [47]. It could be argued that although there appeared to be no tangible change in performance and healthcare outcomes the physician may still have learned something of benefit through attendance at CME events. While these benefits may not be linked directly to improved patient outcomes there may be a beneficial increase in knowledge nonetheless.

The authors suggest that the exclusively didactic CME modality has little or no role to play if performance change is the immediate goal of a CME activity. Such programmes should receive less credit or even no credit as they do, for example, in the Canadian Maintenance of Competence Program system of the Royal College of Physicians and Surgeons of Canada [65].

The need to maintain competence

In one systematic review, sixty two out of sixty three studies showed that doctors’ performance deteriorated over time and that physicians with more experience may, paradoxically, be at risk for providing lower-quality care [66]. Public opinion surveys
(UK) suggested that people expect health professionals to participate in revalidation for their registration and that many believe that this already occurs [67].

One theory has estimated that the lifespan of knowledge gained in a vocational degree is four years [68]. A Irish report published by the Commission on Patient Safety and Quality Assurance, ‘Building a culture of patient safety’ [38] states that ‘health professionals can no longer be regarded as ‘trained for life’ upon qualification’, and that systems are required to ensure lifelong learning, professional development, and regular competence assurance. This would, in turn, produce a competent workforce of skilled professionals capable of managing patient needs. That publication further stated that employers should ensure all staff participate in CPD and have appropriate support and resources to do so, reiterated more recently by the Irish Health Information and Quality Authority (HIQA) [39].

CPD related to healthcare professionals is a process that involves developing practitioners and maintaining competence for the benefit of society with regard to the needs of the employer and the profession itself. A report from the UK, ‘A First Class Service: Quality in the New NHS, stated that ‘Patients and their families place their trust in health professionals. They need to be assured that their treatment is up to date and effective and is provided by those whose skills have kept pace with new thinking and new techniques’ [69].

CPD provides the framework to ensure health professionals ‘retain their capacity to practice safely, effectively, and legally within their evolving scope of practice’ [30]. This evolving scope of practice and CPD links with the professionalisation of the discipline which would benefit from a structured and independently regulated approach ensuring practitioners are competent and can provide effective and safe treatment to patients.
CPD, Professionalisation, Regulation, and Registration of Pre-Hospital Practitioners

The ‘primary purpose behind professional registration is occupational regulation: to protect the public interest by ensuring that only suitably trained, competent, qualified and ethical practitioners are registered and permitted to practice’ according to the Australian Healthcare Professions Regulator [70]. The relevant literature related to CPD and registration/regulation originates predominately from America, the United Kingdom and Australia and discusses various tenets relating to the paramedic profession. Caffrey et al [71] discuss how the role of the paramedic in the America has become specialised and could contribute more to the health care system through integration in more team-based care in non-acute community, inter-facility and tactical response. The study identifies the fragmented approach to specialty certification for paramedics and note how regulators and other health care professions influence and regulate the practice of paramedicine. Paramedicine practitioners, they suggest, need to establish a profession-based specialty board to organise and standardise a specialty national certification system.

Similarly, Newton [72] discusses the multiple terms used to describe paramedics in the UK: ‘practitioner’; ‘specialist’ and ‘emergency care practitioner’ and hopes that paramedics with an extended scope of practice continue to use the designation that contains the professional, and protected, title of ‘specialist paramedic’.

The introduction of a ‘specialist paramedic’ is also proposed in an Australian study on industrial paramedics [73]. Here the authors suggest that an ‘industrial paramedic’ is ‘an advanced clinical practitioner in paramedicine with an expanded scope of practice’ and that they should hold a specialised tertiary qualification and are committed to maintaining their clinical competency through continuing professional development.
O’Brien et al [74] discuss the move of the Australian paramedic education model from one of post-employment to pre-employment and a university-based degree programme. This study further discusses how the move of education for healthcare professions into universities and the higher education sector contributes to the ‘legitimation, maturing and as a consequence, ‘mainstreaming’ of a profession’. The awareness of a changing and indeed developing profession is highlighted in another Australian study [75]. This study asserts that the paramedic profession is in transition with the nature of paramedic work changing, with increased responsibility for clinical decision-making and treatment. There is now a greater need for Australian paramedics having to make decisions about triage, management and referral of patients to other healthcare professionals/facilities. This study also discusses the change in paramedic education from one of post-employment based education to university and pre-employment model of education. The combination of changes in the education and role of Australian paramedics, the authors suggest, contribute to the ‘professionalisation’ of the paramedic discipline. They also link the professional status of a discipline to professional regulation through registration or membership of a professional association. This link is also stated by O’Meara [76]: ‘professional recognition of paramedics through registration, improving educational standards and integration into the health system contributes toward the formation of a professional identity’. This is reiterated by Donaghy in his editorial in the same journal [77] where he suggests that membership of the professional body in parallel with regulation ‘further endorses our desire to be acknowledged as professionals’.

Woollard [78] goes further and describes what constitutes professionalism in UK paramedic practice: clinical governance; education and research; continuous professional development; self-regulation through professional bodies and registration
with the regulatory body. The author concludes that it is how paramedics are viewed externally which will determine whether they are seen as being a profession.

Professions have been described as occupations supported and characterised by university education, scholarly research, shared professional knowledge and skills, ethical codes, status in society, autonomy, and accountability to society and the profession [45, 79]. In the field of paramedic practice, professionalism has been defined as a set of competencies or observable behaviours that are identified in a national competency profile [80] and ‘extends beyond patient care and initial education to foster a particular approach to one’s work’ [81].

In the context of healthcare, more broadly there are a number of key principles that should underpin statutory professional regulation, which include safety and quality of care, confidence in providing that care, and assuring professional standards are in place [67]. Along with regulation and CPD, the development of a competency-base workforce is one of the key components of modernising healthcare careers [82].

According to Sir Donald Irvine (British Patient Association), ‘professionally-led regulation offers the best chance of securing consistent day-to-day practice, provided it is firmly directed to patients’ interests and vigorously implemented’. Furthermore, he suggested that ‘professionalism is at the heart of the doctor-patient relationship’ [83]. Lifelong learning and continuous improvement are hallmarks of professionalism [84].
Professionalisation of pre-hospital practitioners

There is a significant amount of studies, emanating from Australia, on the issue of professionalisation and how the Australian and New Zealand ambulance services, and profession, have not been considered for professional registration and regulation. This is described in detail in the next section. However, in summary, the paramedic profession within Australia and New Zealand are continuing to lobby for professional registration and integral to that process is the need to be viewed as a full profession. What is described here is provided to highlight the contrast between Australia, New Zealand and the Irish context.

Australia and New Zealand

The link between professionalisation and education in Australian paramedicine is explored by Williams et al [51]. The discussion starts with many definitions of the term ‘profession’ and then continues with an interpretation of the actual process of professionalisation.

Professionalisation, according to Volmer and Mills [85] ‘is the process of an occupation attempting to obtain the status and recognition of a profession’. The authors cite Freidson’s [86] argument that ‘professionalisation is perception; the public recognition of an identity conferred from without’. Perhaps Wilensksy’s [87] summary of the process of professionalisation is more objective:

- Development of full-time occupation and formation of occupational territory
- Establishment of training schools or colleges; linkage to university education should occur within several decades
- Occupational promotion to national and international parties
• Professional licensing and accreditation
• Code of ethics is implemented

In addition the authors suggest that other disciplines such as nursing and physiotherapy succeeded in being recognised as professions due to their strategic alliance with the medical profession [51]. However, no such alliance exists between medicine and paramedics in Australia, the lack of which could be viewed as an impediment to professionalisation [51].

If the paramedic discipline is to develop a unique profession–specific body of knowledge, another milestone in the development of a profession, then it needs to have a national standardised training curriculum according, to Williams et al [51]. In turn this should be linked to national registration and regulation which is currently not the case.

Reynolds [88] offers another perspective and cites Greenwoods’ [89] five characteristics of what constitutes a profession: a systematic body of theory, authority, community sanctions, ethical code, and a culture. These were taken into consideration when establishing a registration programme for ambulance personnel in Australia. Under the category of ‘Authority’, Greenwood [89] maintains that when an occupation strives towards professionalisation, one of it aspirations is to acquire a monopoly. Reynolds [88] raises the question of ambulance provision in Australia being funded and administered by state governments perhaps implying that this too is a monopoly. Interestingly, without regulation of ambulance services, lack of registration of all ambulance grades and the resultant licensing of practitioners as an alternative to registration, then, certainly in terms of the possibility of personnel being able to transfer to other ambulance services in Australia, there would indeed appear to be a monopoly. In New South Wales, for example, ambulance personnel may administer medications in accordance with and approval from the Director General of
the department of health, however if that paramedic moves to another service or resigns then they are no longer authorised to use those medications [90]. Thus, as ambulance personnel are not registered then licensure, instead of registration on a national basis, means that the practitioner is only recognised within his/her state and not by other states. This limits the individual in that skills and experience are not equally accepted in other states within the same country, thereby allowing no transferability.

In the absence of national regulation and registration a professional voluntary code of conduct was introduced by the professional association representing paramedics in Australia, Paramedics Australasia. This code is summarised under the following headings: integrity; respect; responsibility/accountability; competence; consent for patient care; confidentiality; research; ethical review [91]. The sanction for breaching this voluntary code of conduct is termination of association membership.

The fact that the ambulance discipline is not recognised as a true profession may have delayed the regulation and registration of this ‘semi-profession’ [88]. However, this is not the case with other healthcare professions within Australia. In March 2008 the Council of Australian Governments (COAG) agreed to establish a single national registration scheme for Healthcare professionals [92]. The Australian Health Practitioner Regulation Agency (AHPRA) was formed by an Act of Parliament and is bound by the Health Practitioner Regulation National Law. Between 2009 and 2010 registration legislation was passed in all states allowing for the registration of ten healthcare professions. These included: nursing, dental, podiatry, chiropractic, medical, optometry, pharmacy, physiotherapy, psychology and osteopathy. Four additional professions were added: Aboriginal and Torres Strait islander health practice; Chinese medicine; medical radiation practice and occupational therapy. By 2014 the AHPRA were responsible for fourteen professions; with almost 620,000
healthcare practitioners registered to practice in Australia [93]. AHPRA advised that such regulation and registration is necessary to safeguard the public so that if a professional is banned from practicing in one State then he/she would be banned in all States.

This is one way in which professional registration helps to protect the public but what of other healthcare professions and why are Australian ambulance practitioners not included on the current list of professions? The answer probably relates to the fact that all of the professions initially amalgamated by the AHPRA were already regulated professions in all jurisdictions [92] and they were brought together under a single national scheme. So it would appear that to achieve national regulation and registration within Australia the first step would be recognition of the profession.

In February 2010, the Australian Health Workforce Ministerial Council requested advice on the proposal to include paramedics as a profession in the National Registration and Accreditation Scheme. The project team developed a discussion paper and convened discussion forums in capital cities. The professional body, Paramedics Australasia (formerly Paramedics Australia), was hopeful that registration for Australian paramedics would be in place by 2015 [94].

Williams et al [95] explore the concept of a ‘full profession’ and whether the Australian Paramedic Discipline is considered a profession. The study asked the Australian paramedic membership if they view the discipline as a profession, and if the paramedic community wished to be considered a profession. Perhaps not surprisingly, the outcomes from the survey showed that participants believed their discipline was not viewed as a profession, but they did wish to be considered as a profession. The authors described five characteristics that a profession should possess, similar to Reynolds [88] and Greenwood [89], and suggested the paramedic
discipline still lacked two professional characteristics: a distinct body of knowledge and professional authority.

A comparison of nursing and physiotherapy is made and the study describes how both these professions achieved national registration and regulation enabled by their alliance and subordination to the medical profession [95]. They further suggest that the formation of national associations was a critical factor in the professionalisation process in that these associations could provide the vehicle for lobbying, influence and authority.

While the key objective for the profession is to attain national registration and regulation there appears to be no urgency in making this a reality for paramedics within Australia. The New South Wales Government in their review of ambulance services found that ‘the operational benefits of registration do not appear to outweigh the costs in the short to medium term’ [96]. However, a submission made to the Department of Human Services in response to their discussion paper examining the regulation of the health professions in Victoria, (Australia) contend that the absence of regulation of paramedic practice poses a clear threat to the health, safety, and well being of the public. In addition, the authors argue that paramedic practice meets all of the criteria for consideration of statutory regulation of practice, as defined by the Australian Health Minister’s Advisory Council [97].

There appears to be support from the medical fraternity, albeit conditional. The Australasian College for Emergency Medicine (ACEM) submitted their response to the consultation paper which considered options for the regulation of paramedics within Australia. They stated that the ‘ACEM supports the principle of national registration of paramedics’ however go on to comment that ‘the support of ACEM for paramedic registration must not be interpreted as support for the independent clinical
practice of paramedics, without appropriate clinical governance models that include medical oversight...’[98].

The Australian Health Workforce Ministerial Council made a decision on 10th October 2014 to defer the inclusion of paramedics on the Australian Health Practitioners register until sometime in 2015. This decision resulted in the Government of Victoria announcing that it will consider establishing its own paramedic board while Southern Australia and Tasmania have also taken independent steps to attempt to regulate the paramedic profession [99]. All registered health professions in Australia are required to maintain CPD each year in order to renew their registration and this is a mandatory national requirement [100]. Ironically, as the paramedic discipline is not required to be registered within Australia this, as a consequence, means there is no national mandatory requirement to maintain CPD.

This apparent lack of urgency for registration and regulation of paramedics within Australia is not mirrored by their close neighbours, New Zealand. Williams et al [95] describes how the New Zealand Government [101] recommended that paramedics should urgently form a national registration body. The government’s report states:

“We believe it is essential for paramedics to be registered under the Act (Health Practitioners Competence Assurance Act 2003) and urge the industry to take the necessary steps to be considered for registration...we recommend that work to achieve registration proceed”. However by early 2015 registration of ambulance practitioners in New Zealand had not been implemented while nursing and fourteen other health professions are regulated under this Health Practitioners Competence Assurance Act [55]. The New Zealand Ministry of Health describe a range of reasons as to why all healthcare professions may not be regulated under the Act due to: a low level or risk of harm; practitioners work with, under the supervision of, a regulated profession; employment arrangements provide an appropriate form of regulation outside the Act
to minimise risk of harm to the public; self-regulation by the profession can provide an appropriate from of regulation [102].

Interestingly, self-regulation has also been described as a poor mechanism for regulation especially after the serial killings of Dr. Harold Shipman. The Shipman inquiry was critical of the role of the General Medical Council, the self-regulating regulator, noting that ‘the balance between protecting patients and being fair to doctors was weighted towards the interest of doctors’ [103]. This inquiry questioned the benefit of self-regulation and as a consequence the report had implications for doctors specifically and other healthcare professions generally, in that all would have to show evidence of competence and revalidation.

While the paramedic discipline itself appears keen to be recognised as a profession it seems to have made no impact on Government decision-makers in trying to progress national registration, regulation and the subsequent professionalisation of the discipline. However, Australian and New Zealand paramedic students appear to be strong advocates of paramedic professionalism and also support the need for regulation and may actually be the agents of change for paramedics in trying to achieve full professional status [104]. It is important to note, that New Zealand has primary legislation which specifically ensures mandatory competence assurance for all those regulated professions even though, currently, this does not include the paramedic profession, but this legislation must be viewed as a positive step towards ensuring competence amongst healthcare professions.

The issue of whether or not to regulate the paramedic profession is not unique to the southern hemisphere, in Ontario, Canada (December 2013) the Health Professions Regulatory Advisory Council (HPRAC)[105] recommended to the Minister of Health and Long-Term Care that paramedics in Ontario should not be regulated on the basis that ‘it is not in the public interest’ and although HPRAC recognise that ‘paramedic
practice entails a degree of risk of harm to the health and safety of the public’ they believe that the oversight system provided by doctors in base hospitals, ‘is sound and adequately addresses the risk of harm to patients’.

In contrast both Ireland and the UK have registration for paramedics the difference being that the UK registers paramedics only (this group in Ireland are referred to as advanced paramedics) and no other level of pre-hospital practitioner. Regulation of paramedics in the UK is the responsibility of the Health and Care Professions Council (HCPC). The HCPC is a multi-professional regulator with sixteen registered professions and has in access of 322,000 registrants [106] while Ireland’s regulatory body, the Pre-Hospital Emergency Care Council (PHECC) registers all three levels of ambulance practitioner: EMT; paramedic and advanced paramedic. A report by the Health Information and Quality Authority (HIQA) [107] in Ireland recommended that a workforce plan be devised and implemented to provide ambulance practitioners with a greater level of autonomy and clinical decision-making. This is in contrast to paramedics in Canada and America where physician assistance through medical oversight is common, and practitioners are not as autonomous as their UK and Irish counterparts. This autonomous practice also contributes to the development of the profession, in conjunction with professional registration and regulation.
Regulation of pre-hospital practitioners and CPD requirements:
examples from other jurisdictions

Canada: Alberta

Alberta regulates a number of health professions. The majority of these health professions are regulated by self-governing colleges under the Health Professions Act [108]. Pre-Hospital practitioners (EMTs, paramedics etc) are governed by the Alberta College of Paramedics under the Health Professions Act. The health professions colleges are required to: set entry requirements (education, practical training and examinations); identify services provided by regulated members; set standards for professional practice; set continuing competency requirements; investigate complaints and impose disciplinary actions if required.

In order to practice in Alberta all pre-hospital practitioners must hold current registration with the Alberta College of Paramedics and maintain competence. The continuing education programme is a credit-based system and is mandatory for all registered practitioners. This includes practitioners in areas such as education, research, management and leadership. All practitioners must achieve 120 continuing education credits every two years through knowledge and skill maintenance, continuing education, professional development, and multiple learning and evaluation activities [109]. Some modules are classified as mandatory within the 120 credits and as such, must be completed as part of the continuing education credit.

The Alberta College of Paramedics determines which activities can be completed for credit in the continuing education programme and assigns credits to all approved learning activities based on four pre-determined criteria: relevance to practice setting, level of participation, time commitment, and contribution to profession/discipline.
**Canada: Ontario**

The paramedic profession in Ontario is not a regulated profession and each practitioner works under license issued by a ‘Base hospital’. There are eight base hospitals and each is responsible for the delivery of training, quality assurance, certification, education and advice to paramedics from within the host hospital. There are three levels of paramedic: primary care paramedic (PCP); advanced care paramedic (ACP); critical care paramedic (CCP). PCPs are the largest group of paramedics in Canada. In Ontario approximately 80% of the province’s 7,000 paramedics are PCPs, approximately 20% are ACPs and less than 0.5% are CCPs. To ensure continuing patient care-related competency, paramedics must be recertified with the base hospital every year by taking continuing medical education (CME) courses [105].

**Canada: Provinces/Territories**

Canada does not have a national regulatory body to oversee paramedic regulation and registration. For example, in New Brunswick and Saskatchewan provinces paramedics are self-regulated through a regulatory college or similar institution, under statute. Paramedics in British Columbia and Manitoba provinces are directly regulated by government through legislation [105].

**The United States of America**

Similarly the USA does not have a national regulatory body. Certification, licensure and credentialing are the terms used in relation to pre-hospital practice. Certification is an external verification of the competencies that an individual has achieved and typically involves an examination process. Licensure represents permission granted to
an individual by the State to perform certain restricted activities and Credentialing is a local process by which an individual is permitted by a specific entity (a medical director) to practice in a specific setting (Emergency Medical Services agency). The lack of a standardised system of certification, licensure and credentialing has implications on the quality of emergency medical care across the USA [110]. There is no one-method of maintaining competency for EMS practitioners across the USA. There are fifty State Emergency Medical Service (EMS) offices who license local EMS agencies/providers. Forty percent of all EMS agencies are based in Fire Departments and over one third of States rely on volunteer EMS agencies for emergency response [111]. EMS practitioners are required to re-credential periodically by each State to ensure ongoing continuing education and competency is maintained [112].

South Africa

The Health Professions Council of South Africa (HPCSA) regulate twelve healthcare professions in aspects pertaining to registration, education and training, professional conduct and ethical behaviour, ensuring continuing professional development and fostering compliance with healthcare [113]. The Emergency Care professional board oversee pre-hospital practitioners including paramedics, basic ambulance assistants, emergency care technicians, emergency care practitioners, operational emergency assistants and operational emergency care orderlies.

The HPCSA require all registrants to maintain a learning portfolio and accumulate 30 continuing education unites (CEUs) per twelve-month period and five of the units must be on ethics, human rights and medical law. Each CEU would be valid for 24 months from the date on which the activity took place. Mandatory random audits are conducted to ensure compliance.
There are considerably different approaches to regulation, registration, the need for ensuring CPD and evidence of continuing competence not alone between Countries but indeed within Countries. However there appears to be one common currency used internationally when it comes to assigning credit points to CPD activity: one credit per hour of CPD activity.

**Measuring Continuing Professional Development**

A research project conducted by the Professional Associations Research Network [114] for the International Accounting Education Standards Board, on the different approaches to CPD measurement adopted by professional bodies across the world produced many examples of CPD among professional associations across various disciplines.

One of the strengths of the research is that it was not restricted to international accountant professional bodies alone but also consulted other professional bodies including pharmacists, information technology, public relations, engineering surveyors, psychiatry and the construction industry. However this strength could also be viewed as a weakness in that the research only considered the opinions of those involved in CPD and CPD measurement within the professional bodies, but did not involve consultation with individual professionals or indeed clients/patients.

The authors suggest that the label ‘CPD’ was specifically chosen to embrace these differences for the purpose of post professional qualification development and add that Gardiner [115] wanted the CPD label to embrace informal, or incidental learning which would normally be achieved as part of actual practice. The authors also state that ‘CPD is viewed as a process which involves different phases’ [114].
According to surveys carried out for the research between a quarter and almost half of professional bodies in the four countries surveyed had voluntary CPD compliance policies. This suggests that these professional bodies support the personal and professional development of individual practitioners. Conversely between a third and three quarters of professional bodies in those countries had either a compulsory or mixed policy thus the emphasis would appear to be that CPD was used as a means to maintain competence.

Two types of CPD policy are explored: a voluntary policy towards compliance of CPD activities offered or accredited by the professional bodies, or an obligatory policy one which formulates CPD as an obligation of the individual professional. Obligatory CPD is classed as the traditional approach between the professionals and the organisation that represents them or regulates them, through the professional code of conduct and ethics. The obligatory policy allows for CPD to be used to ensure professionals are kept up-to-date and as a way of maintaining competence.

The association between these two policies and the measurement of CPD is then discussed in relation to input-based and output-based schemes. Input based schemes are commonly used to specify the number of hours of CPD over a period of a year or more. The hours are then converted to points, typically one hour per point, with some activities counting for more points than others depending on the activity.

In relation to the advantages and disadvantages of each scheme their research suggests that the input-based scheme provides an easy quantifiable record of participation, is relatively cheap to implement and does not require a high level of resources to maintain. However this scheme also allows for the presumption that all activities recognised under the scheme will be of sufficient quality, lead to professional development and that all individuals attending CPD activities are attentive and receptive to reap the benefits. These input-based schemes, however, do not directly
indicate whether learning, change in behaviour or impact on the organisation has taken place or is likely to occur.

The output-based model of CPD would appear to be the preferred model in that skills or improvements could be measured. However the disadvantage to this model is the objective measurement of some activities. How can an improvement in organisational performance, personal qualities and attitudes be accurately measured? Although it might be easier for an organisation or professional body to measure the outcome of skills and knowledge it is not always possible to accurately measure all CPD activities. Additionally, greater resources are required to accredit activities and measure outcomes but this scheme is more likely to indicate competence.

In relation to measuring CPC activities the authors describe their model, based on Kolb’s [116] cycle of experiential learning and then link it to what they call ‘the professional development value’ (PDV) [114] of a CPD scheme. They believe that if CPD has a large impact on the individual’s professionalism it can be said to have a high PDV.

Although they describe the benefits of a CPD system that measures CPD outputs they do acknowledge that this can be a costly exercise for the professional body to try and implement. Costs are associated with paying auditors and travel to visit practices and these costs are borne by the individual and the professional body.

In an effort to implement an output-based scheme at a minimal cost, they suggest that a professional body could carry out an audit on a random basis on a small number of returns per year. Firstly if a detailed tick-box or multiple-choice questionnaire was introduced and the professional submitted it electronically and then it was checked electronically this would reduce costs significantly. This would have to be associated with transparent audit criteria where so many pre-determined boxes are ticked and multiple choice questions answered. The authors also caution that for such a system to
have credibility the criteria for passing must be clear and the consequences of not
passing must also be clear. Additionally if the penalty is clear and consistently
applied this may reduce the need for a substantial number of returns to be audited.

**Conclusion**

The evolving professionalism of paramedics needs to be confirmed through
professional behaviours that incorporate adherence to professional codes of conduct,
reflective practice, and commitment to continuing professional development [18]. The
need for CPD for Irish ambulance practitioners was identified almost a decade ago.
PHECC has the opportunity to introduce a model of CPD, linking the registrant to
annual registration, which in turn not only assists with the continuous competence of
practitioners, but links that competence with the professionalisation of the discipline.
There is an obvious inextricable link between maintaining competence and developing
the profession. Timmins suggests that CPD for nursing is essential in developing
nursing as a profession [117]. Henwood *et al* [24] believe that unless the professional
can become intrinsically motivated to participate in CPD, they are likely to create
barriers out of any difficulty encountered, and in order to change must accept certain
realities about their profession.

Irish pre-hospital practitioners have the advantage of seeing how difficult it has been
in other countries, such as Australia, Canada and America, to become recognised as a
regulated profession. Ireland has a National Pre-Hospital Regulator with a proposal to
move forward with CPD. Other Allied Health Professions in Ireland have introduced
CPD, including medical practitioners [118]. The professional must recognise the need
to move away from previous perceptions about ambulance practitioners [119], and use
CPD as a way of moving towards recognition as a stand-alone profession.
The combination of national regulation, registration and competency assurance will also contribute to the professionalisation of the paramedic discipline which in turn would ensure adequate, safe and effective care is delivered to the service user, the patient.
References

   [http://hdl.handle.net/10147/81141]

2. Health Act.

3. Health Information and Quality Authority 2011: Pre-Hospital Emergency Care Key Performance Indicators for Emergency Response Times.


    [http://www.phecit.ie/PHECC/Education_and_careers/Education_and_training_standards/PHECC/Education_and_careers/Education_and_Training_Standards.aspx?Hkey=1733bd9d-1ea7-41e7-af20-8ab0f40ab846]


16. Pre-Hospital Emergency Care Council: Clinical Practice Guidelines for Pre-Hospital Emergency Care. Pre-Hospital Emergency Care Council, Abbey Moat House, Abbey Street, Naas, Co Kildare, Ireland; 2009.


32. The future of nurse education and training in Ireland / An Bord Altranais (the Nursing Board). [http://hdl.handle.net/10147/46323]


57. Approved professional development and recognition programmes. [http://www.hpm.org/index.cfm/1%2c193%2chtml/Approved-Professional-Development-and-Recognition-Programmes-PDRP.html]


91. Code of Conduct. [https://www.paramedics.org/our-organisation/who-we-are/code-of-conduct/]


104. Williams B, Fielder C, Strong G, Acker J, Thompson S: Are paramedic students ready to be professional? An international comparison study. Inter Emerg Nurs 2014, 14002493/1-s2.0-S1755599X14002493-main.pdf?_tid=e931eb6e-c996-11e4-b3be-00000aacb362&acdnat=1426261252_e5af81e43bea3eb3eec0978d33042c06]


Chapter 3

The First Evaluation of CPD Advanced Paramedic Teaching Methods in Ireland.

Published in the

The First Evaluation of CPD Advanced Paramedic Teaching Methods in Ireland.


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Declaration of competing interests: None

Key Words: Continuing Professional Development; Learning; Self-assessment; Teaching and Assessment; Practical Learning; Scenario Assessment
Abstract

**Background** As in other countries, continuing professional development will soon be a mandatory requirement for paramedics who wish to register with Ireland’s regulatory body for pre-hospital practitioners. The availability of effective and efficient educational methodologies is important in supporting the continuing professional development needs of this group. At a time when funding and resources for this purpose are limited (in Ireland), we determine what type of training method might be utilised to reduce cost without reducing effectiveness and benefit.

**Methods** In 2010, a programme to ‘up-skill’ advanced paramedics was introduced by Ireland’s National Ambulance Service which comprised: a) self-directed learning from a purpose-designed manual; b) written assessment workbooks based on the manual and updated clinical practice guidelines; c) small group practical sessions with discussion-based skill stations; and c) practical scenario-based assessment. All participants of this programme were invited to complete a self-administered web-based survey to assess a) short-term effectiveness, b) medium term effectiveness, and c) user friendliness of each of the four educational modalities employed. The survey further explored the preferred learning styles of participants and their perception of the process and outcome.

**Results** We received 83/168 responses (49% response rate). Of these responses 12% (10/83) had not yet completed the programme, and a further 29% (24/83) who had completed the course as part of their recent advanced paramedic programme and for whom, therefore, this CPD programme was irrelevant. Of the remaining 49 (59% :49/83), respondents 73% (36/49) believed that practical learning encouraged
knowledge retention and skills in the immediate and medium term, while 82% (40/49) believed that practical learning influenced patient care immediately. 75% (37/49) stated that practical learning continued to influence patient care after 6 months. All respondents agreed that practical learning is important, with 90% (44/49) stating that they enjoyed the experience of practical learning. In addition, 80% (39/49) of those responding found the provided manual easy to use and, while most agreed that the manual is an important part of learning (92%, 45/49), over 40% (20/49) believed that all of the information they needed for the programme was not included in the manual. However, despite this, since completion of the programme 77% (38/49) had referenced the learning manual.

Conclusion advanced paramedics believed that they enjoyed, and benefited from, practical learning, the self-directed learning manual, the workbook and the practical scenario assessments, and that the knowledge gained benefited patients in the short and medium term. This study suggests that educators and sponsors of training should consider the benefits of small group “hands-on” practical education for pre-hospital practitioners.
Introduction

Ambulance services in Ireland deliver care under a legislated governance structure [1] and the Pre-Hospital Emergency Care Council Order (Amendment) [2] mediated by: the Pre-Hospital Emergency Care Council (PHECC); medical direction via the Medical Advisory Group (MAG) to PHECC and the service providers themselves (statutory, private, voluntary and auxiliary) each with their own internal clinical governance structures. There is a statutory requirement that training be provided and an imperative that clinical practice guidelines (CPGs) be adapted to reflect advances in clinical knowledge.

Translating advances in care guidelines into actual care delivered to patients poses many challenges for the standards bodies and service providers as these advances involve practitioners acquiring new knowledge and skills and the incremental development of existing expertise. The dissemination of such information to a large professional and voluntary workforce is challenging in terms of developing appropriate educational programmes, employing effective and cost efficient training methods, and ensuring clinical competence. The ultimate goal of education is to modify behaviour and, thereby, enhance patient care. Sessions that enhance participant activity and provide opportunities to practice skills can effect change in professional practice and, on occasion, improve patient outcomes [3].

The third edition of the clinical practice guidelines for advanced paramedics (APs) in Ireland was published in 2009 [4]. Significant modification of existing practice and the addition of new medications, skills and routes of medication administration were required. Subsequently, an ‘up-skilling’ process for existing advanced paramedic practitioners was developed and implementation began in June 2010. Recognising that practitioners may have varying learning styles (those who learn by doing, those who
focus on the underlying theory of what is being taught, those who need to see how to put their new knowledge into action in practice, and those who learn by observing and reflecting on what happened [5] the training methods employed included four discrete educational modalities:

- self-directed learning from a purpose-designed pre-course educational manual;
- a written assessment workbook based on the manual and updated CPGs;
- a two-day “hands-on” course delivered centrally comprising 15 small group practical sessions with discussion-based skill stations;
- practical scenario-based assessment, where candidates were required to manage a complex clinical scenario in front of their peers as part of the final assessment.

To inform future educational programme development, we aimed to determine which teaching method was most effective for medium term learning from the perspective of advanced paramedic learners. To do so, a short answer survey was devised to measure the effectiveness and “user-friendliness” of each training method, particularly in relation to short and medium term, self-reported, behaviour change.
Methods

Participants

All advanced paramedics licensed to practice in Ireland are included on the Pre-hospital Emergency Care Council’s (PHECC) practitioners’ register (n=244). An online survey (detailed in Appendix 1) was distributed to 168 eligible advanced paramedics (Figure 1) in April 2011. The survey was conducted using Survey Monkey™ software. Participants were contacted via e-mail to participate 6-9 months after their training was completed. Respondents were provided with a clear, concise and unbiased introduction regarding the topic of the survey. As a follow-up, reminder emails, which have been shown to be beneficial in improving survey response rate [6] were emailed two weeks later. Consent to participate was recorded. Participation was voluntary and anonymous. The survey was piloted before online launch. Ethical Approval was obtained from the Education and Health Sciences Ethics Committee in the University of Limerick and the Research Ethics Committee of the Mid-Western Regional Hospital, Limerick, Ireland.
Figure 1: Participation and exclusion of advanced paramedics

Number of APs on statutory register
(n=244)
- Training officers excluded (n=28) as assisted in the initial design and course delivery
- New graduates excluded (n=24) as had just completed training on most recent curriculum
- No email address (n=14)
- Not completed up-skilling (n=10)

Number of eligible APs (i.e., potential participants)
(n=168)
- Non-responders (n=119)

Responders / study participants
(n=49)
Analysis

Completed questionnaires were coded numerically and inputted to Statistical Packages for the Social Sciences (version 14.0) for subsequent analysis. The results from the five-point Likert scale were grouped into ‘strongly agree / agree’; ‘neutral’; ‘disagree / strongly disagree.

Self-reported effectiveness was measured based on respondents’ ability to respond to specified clinical scenarios. Such self-assessment is integral to many appraisal systems and has been espoused as an important aspect of personal and professional development as health professionals are increasingly expected to identify their own learning needs through self-assessment [7, 8].
Results

Respondents

The response rate from eligible respondents was 29% (49/168). The majority of these were male (92%):45/49): with 36.6% (18/49) aged between 31-35 years which represented more than double the number in any other age group. 55% (27/49) of respondents had completed the advanced paramedic programme between 36-48 months prior, with equal numbers 22% (11/49) having completed the programme more recently or more than four years previously. 29% (14/49) of respondents often or always participated in post-graduate education opportunities, while the majority 63% (31/49) sometimes or only rarely participated. The remaining 8% (4/49) of respondents had never participated in post-graduate education.

User-perceived attributes of teaching and assessment methods

Responses regarding user-friendliness were divided into the positive and negative feedback received for each of the teaching and assessment methods employed in the programme, how they integrated with learning styles, and whether the respondent felt that they were fit for purpose. Collated results are shown in Table 1. In summary, respondents believed that neither reading only nor practical only learning provided all of the required information. However, all stated that practical learning was easier to understand and was an important part of the learning process, while 98% (45/46) stated that practical learning was most suited to teaching of skills and for holding their attention. In contrast, 35% (17/48) of respondents believed they were easily bored or distracted when reading learning material, but stated that reading material was an important facet of learning (45/48 94%) and that the material was a valuable resource
to reference following completion of the programme (38/48:79%). Similarly, respondents indicated that both written (workbook) and scenario-based assessments were appropriate for both learning (83%: 38/46 and 88% 38/43, respectively) and evaluation of knowledge (77%:36/46 and 89%: 40/45, respectively). However, scenario-based assessment was clearly seen as best for determining skill proficiency (20%:9/46 written versus 89%: 40/45 scenario-based, respectively).


Table 1 User-perceived attitudes of teaching and assessment methods

<table>
<thead>
<tr>
<th>POSITIVE ATTRIBUTES</th>
<th>Reading</th>
<th>Practical learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoyable</td>
<td>35/48* = 73%</td>
<td>44/46 = 96%</td>
</tr>
<tr>
<td>Easy to understand</td>
<td>29/48 = 60%</td>
<td>46/46 = 100%</td>
</tr>
<tr>
<td>Easy to use</td>
<td>39/47 = 83%</td>
<td>44/46 = 96%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>NEGATIVE ATTRIBUTES</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Easily bored or distracted</td>
<td>17/48 = 35%</td>
<td>1/46 = 2%</td>
</tr>
<tr>
<td>Difficult to understand</td>
<td>6/48 = 13%</td>
<td>2/46 = 4%</td>
</tr>
<tr>
<td>Difficult to remember</td>
<td>39/48 = 81%</td>
<td>2/43 = 5%</td>
</tr>
<tr>
<td>Too time consuming</td>
<td>5/48 = 10%</td>
<td>0 = 0%</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>INTEGRATES WITH LEARNING STYLE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>36/48 = 75%</td>
<td>35/46 = 76%</td>
</tr>
<tr>
<td>Practical Learning</td>
<td>38/48 = 79%</td>
<td></td>
</tr>
<tr>
<td>Written assessment</td>
<td>45/48 = 94%</td>
<td>44/44 = 100%</td>
</tr>
<tr>
<td>Scenario assessment</td>
<td>38/46 = 83%</td>
<td>38/43 = 88%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIT FOR PURPOSE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Good for teaching/assessing knowledge</td>
<td>33/47 = 70%</td>
<td>42/45 = 93%</td>
</tr>
<tr>
<td>Good for teaching/assessing skills</td>
<td>22/48 = 46%</td>
<td>45/46 = 98%</td>
</tr>
</tbody>
</table>
Outcome measures: perceptions of short-term and medium-term effectiveness

Effectiveness was determined through self-reported perception of ability. The overall results for each of the teaching and learning modalities are shown in Table 2. Practical learning through hands-on skills stations proved most effective in both short and medium-term knowledge or skills retention, with 80% (36/45) of respondents stating that this was successful in both the short- and medium-term. Indeed, 91% (42/46) of respondents believed that they benefited from their practical instructors addressing their individual training needs, from having more than one instructor available to them (27/45: 60%), and either from managing a scenario in front of their peers (33/45: 73%) or from watching their peers manage scenarios (39/45: 87%) (Table 3). Most importantly, the knowledge acquired during practical learning influenced patient management immediately (40/45 respondents 89%) and after six months (37/44 respondents 84%).
Table 2: Short and medium-term effectiveness of learning methods

<table>
<thead>
<tr>
<th></th>
<th>Reading</th>
<th>Practical learning</th>
<th>Written assessment</th>
<th>Scenario assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good retention of knowledge/skill (immediate)</td>
<td>13/48* = 27%</td>
<td>36/45 = 80%</td>
<td>33/46 = 72%</td>
<td>35/45 = 78%</td>
</tr>
<tr>
<td>Good retention of knowledge/skill (at 6 months)</td>
<td>21/48 = 44%</td>
<td>36/45 = 80%</td>
<td>15/46 = 33%</td>
<td>24/44 = 55%</td>
</tr>
<tr>
<td>Influenced patient management (immediate)</td>
<td>37/48 = 77%</td>
<td>40/45 = 89%</td>
<td>Question Not asked</td>
<td>Question Not asked</td>
</tr>
<tr>
<td>Influenced patient management (at 6 months)</td>
<td>33/48 = 69%</td>
<td>37/44 = 84%</td>
<td>Question Not Asked</td>
<td>Question Not asked</td>
</tr>
</tbody>
</table>

* Note: Variations in number of respondents due to the question being skipped/excluded by individual
Table 3: Comments relating to each learning modality

<table>
<thead>
<tr>
<th>The Manual</th>
<th>N = 48</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy material presented in written format</td>
<td>35    73%</td>
</tr>
<tr>
<td>It allowed the individual write additional notes</td>
<td>36    75%</td>
</tr>
<tr>
<td>It was easy to understand</td>
<td>29    60%</td>
</tr>
<tr>
<td>It was user-friendly</td>
<td>39 (n= 47) 83%</td>
</tr>
<tr>
<td>It acted as a reference resource after completion of the programme</td>
<td>38    79%</td>
</tr>
<tr>
<td>Candidates needed to re-read the manual to remember the knowledge</td>
<td>39    81%</td>
</tr>
<tr>
<td>Comments: The strengths of the manual were that ‘it was in colour’, ‘had a mix of text and diagrams’ and the ‘format was interesting and easy to follow’.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Workbooks</th>
<th>(N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The workbook was fair</td>
<td>21    46%</td>
</tr>
<tr>
<td>The workbook was unfair</td>
<td>4    9%</td>
</tr>
<tr>
<td>The workbook was transparent</td>
<td>21    46%</td>
</tr>
<tr>
<td>The workbook was not transparent</td>
<td>8    17%</td>
</tr>
<tr>
<td>I liked open-ended questions</td>
<td>15    32%</td>
</tr>
<tr>
<td>I disliked open-ended questions</td>
<td>17    37%</td>
</tr>
<tr>
<td>I liked closed-questions</td>
<td>29    63%</td>
</tr>
<tr>
<td>I disliked closed questions</td>
<td>1    2%</td>
</tr>
<tr>
<td>Completing the workbook ensured you were prepared for the course</td>
<td>37    82%</td>
</tr>
<tr>
<td>I would recommend a workbook as a form of assessment</td>
<td>24    52%</td>
</tr>
<tr>
<td>The workbook was a good method to assess overall learning</td>
<td>35 (n=36) 97%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skill Stations</th>
<th>(N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy practical learning</td>
<td>44    96%</td>
</tr>
<tr>
<td>The knowledge is easy to understand</td>
<td>46    100%</td>
</tr>
<tr>
<td>The skill stations are user friendly</td>
<td>45    98%</td>
</tr>
<tr>
<td>Candidates who write additional notes</td>
<td>35    76%</td>
</tr>
<tr>
<td>Small group training assessed individual candidate needs</td>
<td>42    91%</td>
</tr>
<tr>
<td>Small group training can be intimidating</td>
<td>4    9%</td>
</tr>
<tr>
<td>Two trainers per skill station improved the educational experience</td>
<td>34    74%</td>
</tr>
<tr>
<td>Comments: ‘Very well received’, ‘kept interested’, ‘enjoyed small group teaching and rotating stations’</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario testing</th>
<th>(N = 45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario test was fair</td>
<td>27    60%</td>
</tr>
<tr>
<td>Scenario test was unfair</td>
<td>8    18%</td>
</tr>
<tr>
<td>Scenario test was transparent</td>
<td>21    47%</td>
</tr>
<tr>
<td>Scenario test was not transparent</td>
<td>10    22%</td>
</tr>
<tr>
<td>Scenario test was good for assessing simple issues</td>
<td>37    82%</td>
</tr>
<tr>
<td>Scenario test was good for assessing complex issues</td>
<td>28    62%</td>
</tr>
<tr>
<td>Managing a scenario in front of my peers was a positive educationally experience</td>
<td>33    73%</td>
</tr>
<tr>
<td>Watching my peers manage a scenario was a positive educational experience</td>
<td>39    87%</td>
</tr>
<tr>
<td>I would recommend scenario testing as a form of assessment</td>
<td>34 (n=44) 77%</td>
</tr>
<tr>
<td>Two trainers per assessment improved the learning experience</td>
<td>27    60%</td>
</tr>
<tr>
<td>Two trainers per assessment was intimidating</td>
<td>8    18%</td>
</tr>
<tr>
<td>Two trainers per assessment was not intimidating</td>
<td>30    67%</td>
</tr>
<tr>
<td>Scenario testing is a good method to assess overall learning</td>
<td>40    89%</td>
</tr>
<tr>
<td>Comments: ‘Excellent’, ‘Being tough replicated real life’, and ‘Some issues with instructors’.</td>
<td></td>
</tr>
</tbody>
</table>
Discussion

There is a large incentive for employers to provide training in an effective and cost efficient way: incurred costs include trainer-related costs (development of the educational material, provision of training equipment and infrastructure, opportunity costs due to staff involvement) and trainee-related costs (opportunity costs associated with provision of study time, study materials and maintenance of service during training). Learning is a continuous process [9] and is not a replication or reproduction of knowledge and skills but an active meaning-making process in which the learner actively engages [10]. Central to this discussion is the long-term effect of training on the practitioner’s behaviour (i.e., reaction of the learners to the process, their increase in knowledge, their application of this knowledge, and effect on their behaviour or practice) [11]. Corporately and ethically, it is not satisfactory to say that personnel were trained and are, therefore, competent. Training must involve the medium-and long-term modification and regular reinforcement of best-practice behaviour.

This study shows that those APs surveyed prefer practical learning and that over 88% of respondents (38/43) believe scenario testing is important and an effective way of teaching and assessing skills and knowledge. When asked how they believe this type of education impacted on them six months after the programme was completed, 80% (36/45) believed that practical learning promoted knowledge retention, while 84% (37/44) believed it also influenced patient management and skills. All participants agreed that practical learning is important, with 96% (44/46) of respondents having enjoyed practical learning.

Of course, varying educational methodologies (including blended learning) may be appropriate for training advanced paramedics. On-line learning [12] and traditional classroom teaching are typical examples that take into consideration diverse learning
styles [13, 14]. Indeed, research- and evidence–based practice were favoured by paramedics in New South Wales, Australia where 90% of those surveyed (742/822) believed that pre-hospital research would improve patient care [15]. High-fidelity simulation, simultaneously assessing cognitive knowledge and field performance, has been utilised in North Carolina (USA) since 2007, and is used as part of the certification programme for paramedics [16]. Subjective multiple choice and standardised patient assessments underemphasise important domains of professional competence for example integration of knowledge and skills, context of care and team working. Assessments, therefore, should foster habits of learning and self-reflection and drive institutional change [17]. Studies of Continuous Medical Education (CME) [3] suggest that some evidence exists that show interactive CME sessions that enhance participant activity and provide opportunity to practice skills can effect change in professional practice and, on occasion, healthcare outcomes. The teaching of clinical skills should include three specific components in our instructional design: learning how to perform certain movements (procedural knowledge); why one should do so (underlying basic science knowledge); and what the findings might mean (clinical reasoning) [18].

In Ireland, “ambulance training” of the 80s and 90s relied on traditional approaches similar to basic medical education and emphasised rote learning rather than requiring students to understand and to reflect [19].
Limitations
This study has some limitations, namely the subjective self-reporting and self-perceived competence components of this study coupled with the low response rate. However, it is the first study of its kind relating to advanced paramedic educational methodology in Ireland that has surveyed all registered APs, and provides some insight into the preferred learning styles of these healthcare professionals.

Conclusions
This study shows that, in the opinion of the respondents, practical learning and assessment are most effective for short- and medium-term information retention and are most influential on patient care for pre-hospital advanced paramedic practitioners. All participants agreed that practical learning is important, with most (44/46: 96%) finding the practical learning experience enjoyable.

Subjectively, Irish advanced paramedics believe that they benefit from this method of training delivery, and that the benefit is then passed on to the patient in the short- to medium-term at a minimum. Employers and training officers should be cognisant of these preferred learning styles when planning AP-oriented education programmes in the future. Future work should document the educational approaches used in supporting the professional development of pre-hospital practitioners and measure their effectiveness, both self-perceived and impact on professional practice.
Acknowledgements

The authors thank the advanced paramedics of the Irish National Ambulance Service and Dublin Fire Brigade who completed the survey and the Training and Development Officers of both these services who contributed to the design and implementation of the programme.
References


13. Fleming ND, Mills C: Not Another Inventory, Rather a Catalyst for Reflection. *To Improve the Academy* 1992, **11**: 137-155

15. Simpson PM, Bendall JC, Patterson J, Middleton P.M: **Beliefs and Expectations of Paramedics Towards Evidence-Based Practice and Research.** *Inter J Evidence-Based Healthcare* 2012, **10**: 196-203


### Appendix 1

**Table 4 Journal: Self-report questionnaire on learning methods**

<table>
<thead>
<tr>
<th>MANUAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I like learning new information when it is presented in a written format</td>
<td></td>
</tr>
<tr>
<td>I make my own additional notes when reading</td>
<td></td>
</tr>
<tr>
<td>I find it easy to understand what is happening when I read</td>
<td></td>
</tr>
<tr>
<td>I find it difficult to understand what is happening when I read</td>
<td></td>
</tr>
<tr>
<td>I get bored or am easily distracted when reading</td>
<td></td>
</tr>
<tr>
<td>Reading is good for teaching knowledge</td>
<td></td>
</tr>
<tr>
<td>Reading is good for teaching skills</td>
<td></td>
</tr>
<tr>
<td>I found the manual easy to use</td>
<td></td>
</tr>
<tr>
<td>I had to read the manual several times to remember the information</td>
<td></td>
</tr>
<tr>
<td>I remembered the knowledge from the manual immediately after reading it</td>
<td></td>
</tr>
<tr>
<td>I remembered the knowledge from the manual 6 months after reading it</td>
<td></td>
</tr>
<tr>
<td>The manual influenced how I manage patients initially</td>
<td></td>
</tr>
<tr>
<td>The manual influenced how I manage patients 6 months later</td>
<td></td>
</tr>
<tr>
<td>Reading the manual is too time consuming</td>
<td></td>
</tr>
<tr>
<td>All the information I needed for upskilling was in the manual</td>
<td></td>
</tr>
<tr>
<td>I believe that a manual is an important part of learning</td>
<td></td>
</tr>
<tr>
<td>Since the completion of the programme I have referenced the manual</td>
<td></td>
</tr>
</tbody>
</table>

**Comments_____________________________________________________

<table>
<thead>
<tr>
<th>SKILL STATIONS - SKILLS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I like learning new information when it is presented in a practical format</td>
<td></td>
</tr>
<tr>
<td>I make my own additional notes in practical stations</td>
<td></td>
</tr>
<tr>
<td>I find it easy to understand what is happening when I see it</td>
<td></td>
</tr>
<tr>
<td>I find it difficult to understand what is happening when I see it</td>
<td></td>
</tr>
<tr>
<td>I get bored or am easily distracted in skill stations</td>
<td></td>
</tr>
<tr>
<td>Practice is good for teaching knowledge</td>
<td></td>
</tr>
<tr>
<td>Practice is good for teaching skills</td>
<td></td>
</tr>
</tbody>
</table>
I found the skill stations user friendly
I found it difficult to remember information from skill stations
I could perform the skill immediately after the skill station
I could perform the skill 6 months after the skill station
The skill stations influenced how I manage patients initially
The skill stations influenced how I manage patients 6 months later
Attending the skill stations is too time consuming
All the information I needed for upskilling was in the skill stations
I believe that skill stations are an important part of learning
I found small group training effective for the teaching of skills
I found small group training allowed the instructor address my individual training needs
I found small group teaching intimidating
I found having two trainers per skill station improved the educational experience

Comments

WORKBOOK ASSESSMENT
Answering questions in a workbook format is an appropriate way of assessing of learning
Workbooks are good for assessing new knowledge
Workbooks are good for assessing attitudes
Workbooks are good for assessing the ability to perform new skills
Workbooks are fair
Workbooks are transparent
I like that workbooks can ask open ended questions
I like that workbooks can ask closed questions
The workbook helped me learn
Completing the workbook in advance of the course ensured that I was prepared for the course
I would recommend using a workbook as a form of assessment
The workbook was good for assessing my immediate retention of information
The workbook was good for assessing my long term retention of information

Comments
SCENARIO TESTING ASSESSMENT METHOD

Managing a complex clinical scenario is an appropriate way of assessing of learning

Scenario testing is good for assessing new knowledge

Scenario testing is good for assessing attitudes

Scenario testing is good for assessing the ability to perform new skills

Scenario testing is fair

Scenario testing is transparent

I feel that scenario testing is good for assessing complex issues

I feel that scenario testing is good for assessing simple issues

The scenario testing helped me learn

Managing a scenario in front of my peers was a good educational experience

Watching my peers manage a scenario was a good educational experience

I would recommend using scenario testing as a form of assessment

Scenario testing was good for assessing my immediate retention of information

Scenario testing was good for assessing my long term retention of information

I found that having 2 instructors assess me improved the learning experience

I found that having 2 instructors assess me was intimidating

Comments_______________________________________________________
Chapter 4

Continuous Professional Competence (CPC) for Emergency Medical Technicians in Ireland:
educational needs assessment

Published in

BMC Emergency Medicine (2013) 13 (1), 25
Continuous Professional Competence (CPC) for Emergency Medical Technicians in Ireland: educational needs assessment

Published: BMC Emergency Medicine (2013) 13 (1), 25

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Abstract

**Background:** As in other countries, the Irish Regulator for Pre-Hospital practitioners, the Pre-Hospital Emergency Care Council (PHECC), will introduce a Continuous Professional Competence (CPC) framework for all emergency medical technicians (EMTs), paramedics and advanced paramedics (APs). This framework involves EMTs participating in regular and structured training to maintain professional competence and enable continuous professional developments. To inform the development of this framework, this study aimed to identify what EMTs consider the optimum educational outcomes and activity and their attitude towards CPC.

**Methods:** All EMTs registered in Ireland (n=925) were invited via email to complete an anonymous online survey. Survey questions were designed based on continuous professional development (CPD) questionnaires used by other healthcare professions. Quantitative analysis was performed.

**Results:** Response rate was 43% (n=399). 84% of participants had been registered in Ireland for less than 24 months, while 59% had been registered EMTs for more than one year. Outcomes were: evidence of CPC should be a condition for EMT registration in Ireland (95%), 78% believed that EMTs who do not maintain CPC should be denied the option to re-register. Although not required to do so at the time of survey, 69% maintained a professional portfolio and 24 % had completed up to 20 hours of CPC activities in the prior 12 months. From a list of 22 proposed CPC activities, 97% stated that practical scenario-based exercises were most relevant to their role. E-learning curricula without practical components were considered
irrelevant (32%), but the majority of participants (91%) welcomed access to e-learning when supplemented by related practical modules.

**Conclusion:** EMTs are supportive of CPC as a key part of their professional development and registration. Blended learning, which involves clinical and practical skills and e-learning, is the optimum approach.

**Keywords:** emergency medical technicians; continuous professional development; CPD; blended learning; e-learning; educational; ambulance.
Background

Pre-hospital care in Ireland is provided by the Health Service Executive’s (HSE) National Ambulance Service (NAS) and (in parts of Dublin city) the ‘Dublin Fire Brigade’. Staff who respond to pre-hospital incidents are all trained to paramedic or advanced paramedic (AP) level. In addition, pre-hospital care is provided at sporting and other public events by emergency medical technicians (EMTs), mostly within the voluntary organisations: Civil Defence, Order of Malta Ireland, St. John Ambulance and the Irish Red Cross. All of these practitioners are registered with the regulating authority, Ireland’s Pre-Hospital Emergency Care Council (PHECC) [1].

Currently, once registered as a practitioner with PHECC there is no requirement to show evidence of competence, other than valid certification in Cardiopulmonary Resuscitation (CPR). In addition to re-register practitioners must complete a self-declaration form stating that they are currently practicing, are of good character and in good health and will commit to the PHECC code of conduct and ethics. There is no current requirement to show evidence of any patient contacts, or to maintain a learning portfolio, or participate in skill maintenance programmes etc. PHECC licences are issued yearly while re-registration occurs every three years.

In 1993, a report from the Irish government [2] stated that the ambulance service “forms a valued and integral part of the emergency services” and “was used as an extension of the hospital service with the objective of getting the patient into hospital as quickly as possible so that advanced medical treatment could be provided by a medical practitioner”, thus implying: 1) that advanced medical treatment could only commence within a hospital and 2) that the only purpose of the ambulance service was to provide transport for patients. The same report further recommended significant improvement in the quality of training provided to ambulance personnel. Reflecting its
most recent iteration, this recommendation is furthered in the PHECC strategic plan (2011-2014) where the need to develop and implement a continuing professional competence (CPC) framework was stated [3]. However, translating advances in care guidelines into actual care delivered to patients poses many challenges associated with the effective acquisition of new knowledge and practical skills in addition to maintenance of existing expertise.

Previous studies have assessed paramedic and advanced paramedic training and continuing education in Ireland [4-7]. However, in this study, we wished to determine, for the first time, the attitudes of EMTs in Ireland towards CPC, their suggested outcomes / preferred delivery format and relevance to their roles. We devised a short answer survey, based on similar questionnaires used by other professions [8-12], to determine current EMT demographics, CPC activities, and attitudes towards effectiveness of the varying training methods employed. It is hoped that this information will inform future CPC programme development.
Methods

Participants

In July and August 2012, all EMTs licensed to practice in Ireland and registered with the Pre-hospital Emergency Care Council’s (PHECC) (n=925) were contacted by email. Questions were entered into a Survey Monkey™ online questionnaire (www.surveymonkey.com). A link was provided to the survey and to a concise, unbiased explanation of the survey topic. Participation was voluntary and anonymous. Consent to participate was recorded. Conduction of the study and its design, taking into consideration published healthcare professions’ questionnaires relating to continuous professional development (CPD) [9-11, 13], were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland.

Data collection and analysis

Health professionals are increasingly expected to identify their own learning needs through self-assessment [14, 15]. Therefore, the survey questions were designed to elicit participants’ views on CPC and, so, the survey was piloted following a presentation on CPC to 120 registered EMTs at a biannual conference in 2011 [16]. Responses were recorded (included audio recording) and summarised at the event using mind mapping software [17]. Following analysis of the exercise, the design of the questionnaire was finalised and trialled using 12 EMTs who were subsequently excluded from the analyses.

The questionnaire comprised questions relating to demographics, opinions on CPC, registration and also included a matrix of 22 listed activities whereby participants
were asked to indicate how relevant they believed each activity was to CPC. Some of the activities related to education generally, while others related specifically to pre-hospital practice. There were 26 items in the questionnaire. Not every single question was answered by every respondent and, therefore, answers are described by number and percentage of responses to specific questions. The data were downloaded from Survey Monkey™ software to an electronic data file and quantitative analysis was performed using Statistical Packages for the Social Sciences (SPSS version 20.0).

Results

Demographics

399/925 responses were received (43% of all registered EMTs), of whom 271 (68%) were Male; 115 (29%) were Female and 13 (3%) did not report gender. Table 1 compares the Age category with Gender.

However, while responses were reasonably well dispersed (Figure 1) across the voluntary organisations: i.e., Order of Malta (96, 24%), Civil Defence (80, 20%), St. John Ambulance Brigade (29, 7%) and the Irish Red Cross (97, 24%), there was considerably less participation by EMTs employed by the Irish State (10%) such as the Permanent Defence Forces, Irish Health Service, An Garda Síochána (Police), etc and private ambulance services 9.7%. It should be noted that there were very few EMTs within these organisations at the time of the survey (as they are not employed in their permanent position as EMTs but may have completed the programme independently).
Table 1 Gender and Age Group

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18-21</td>
<td>22-29</td>
<td>30-39</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>61</td>
<td>82</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>92</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>69.2%</td>
<td>66.3%</td>
<td>70.1%</td>
</tr>
<tr>
<td>Female</td>
<td>30.8%</td>
<td>33.7%</td>
<td>29.9%</td>
</tr>
<tr>
<td>Total</td>
<td>3.4%</td>
<td>23.8%</td>
<td>30.3%</td>
</tr>
</tbody>
</table>

DNRG* – Did not report gender
Figure 1: Respondents by Organisation

Respondents by Organisation (n=399)

- Irish Red Cross (24.3%)
- Order of Malta (24%)
- Civil Defence (20%)
- Private Ambulance Services (9.7%)
- St. John Ambulance Brigade (7.2%)
- Not affiliated to an Organisation (4.7%)
- Permanent Defence Forces (2.2%)
- Dublin Fire Brigade (1.7%)
- Health Service Executive (1.5%)
- Irish Coastguard (1.2%)
- An Garda Síochána (police) (1%)
- Army Reserve (1%)
- Fire Service (1%)
A total of 325 (84%) of respondents were registered EMTs for two years or less (Table 2), with almost half of those (161) being registered for less than one year. Respondents who had been with their organisation for less than five years represented 33% (n=131) of the total surveyed, while 28% (n=113) of those with less than five years service within their organisation had been registered as EMTs for less than two years. 21% of respondents had over 20 years experience with their respective organisations while 34% had less than six years service. 30-39 year old respondents represented 30% (n=118) of the total responses and also represented the largest age group of those with their Organisation for less than five years.
Table 2: Participants’ length of service and registration with regulatory authority

<table>
<thead>
<tr>
<th>Years with current Organisation</th>
<th>0-5</th>
<th>1-2 years</th>
<th>3-4 years</th>
<th>5-6 years</th>
<th>more than 6 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>68</td>
<td>45</td>
<td>17</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% of Total</td>
<td>17.6%</td>
<td>11.7%</td>
<td>4.4%</td>
<td>.3%</td>
<td>.0%</td>
<td>33.9%</td>
</tr>
<tr>
<td>6-10</td>
<td>Count</td>
<td>43</td>
<td>28</td>
<td>16</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% of Total</td>
<td>11.1%</td>
<td>7.3%</td>
<td>4.1%</td>
<td>.3%</td>
<td>.0%</td>
<td>22.8%</td>
</tr>
<tr>
<td>11-15</td>
<td>Count</td>
<td>22</td>
<td>34</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% of Total</td>
<td>5.7%</td>
<td>8.8%</td>
<td>1.0%</td>
<td>.3%</td>
<td>.0%</td>
<td>15.8%</td>
</tr>
<tr>
<td>16-20</td>
<td>Count</td>
<td>8</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% of Total</td>
<td>2.1%</td>
<td>4.1%</td>
<td>.5%</td>
<td>.0%</td>
<td>.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>over 20</td>
<td>Count</td>
<td>20</td>
<td>41</td>
<td>13</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>% of Total</td>
<td>5.2%</td>
<td>10.6%</td>
<td>3.4%</td>
<td>.0%</td>
<td>1.6%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>161</td>
<td>164</td>
<td>52</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>% of Total</td>
<td>41.7%</td>
<td>42.5%</td>
<td>13.5%</td>
<td>.8%</td>
<td>1.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Attitudes towards Continuous Professional Competence

CPC is considered extremely important by 86% (n=343) of the EMTs surveyed. 82% (n=329) agreed that all EMTs should maintain evidence of CPC activities. A total of 61% (n=243) agreed that CPC is the sole responsibility of the registered practitioner (strongly agreed 26%, n=104 and agreed 35%, n=139). Over 78% of respondents (n=313) believed that their organisation should have input, at least to some extent, into what components should constitute an individual’s CPC, with only 7% (n=26) stating that the organisation should not have input. Of the EMTs surveyed, (39%, n=154) disagreed that only the regulatory body (PHECC) should determine the structure of CPC components, while 26% (n=105) agreed that only the PHECC should determine the structure of CPC.

Linking Continuous Professional Competence activities and registration

The majority of EMTs surveyed (69%, 220/321), although not obligated, maintained a professional portfolio at the time of the survey (Table 3), with 24% (n=97) stating that they had completed up to 20 hours of CPC over the previous 12-month period. 11% (n=43) claimed that they had completed over 100 hours of CPC in the same period. Notably, almost a quarter (23%, n= 91) of those who had completed their CPC in the previous year had funded participation themselves, while 29% (n=116) had their costs covered by their organisation either partially (12%, n=46) or in full (18%, n=70). When queried as to appropriate levels of CPC required, given a range of choices: 20 hours; 21-40 hours; 41-60 hours; 61-80 hours and 81-100 hours almost 40% (n=159) believed that an EMT should complete 20-40 hours annually (a combination of the
first two categories), with only 8% (n=34) stating that 81-100 hours would be appropriate.

Over 78% (273/352) of the EMTs surveyed stated that EMTs who do not maintain their CPC and continue not to meet the requirements, should not be allowed to re-register. 95% of respondents either strongly agreed (61%, 218/359), or agreed (34%, 123/359), that evidence of CPC should be a condition for EMT registration. 95% (n=381) stated that registration with PHECC was of personal importance to them.
Table 3: Attitudes towards CPC and linking CPC activities and registration

<table>
<thead>
<tr>
<th>Attitudes towards Continuous Professional Competence (CPC)</th>
<th>Agree</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC is extremely important to me</td>
<td>86%</td>
<td>343</td>
</tr>
<tr>
<td>EMTs should maintain evidence of CPC Activities</td>
<td>82%</td>
<td>329</td>
</tr>
<tr>
<td>CPC is the sole responsibility of the registered practitioner</td>
<td>61%</td>
<td>243</td>
</tr>
<tr>
<td>Your organisation should have some input into your CPC</td>
<td>78%</td>
<td>313</td>
</tr>
<tr>
<td>Only PHECC should determine the structure of CPC</td>
<td>26%</td>
<td>105</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linking CPC Activities and Registration</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently maintain a professional portfolio</td>
<td>69%</td>
<td>220/321</td>
</tr>
</tbody>
</table>

**How many hours of CPC have you completed over the previous 12-month period?**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 20 hours</td>
<td>24%</td>
<td>97</td>
</tr>
<tr>
<td>Over 100 hours</td>
<td>11%</td>
<td>43</td>
</tr>
</tbody>
</table>

**Who paid for your CPC over the previous 12-month period?**

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<tr>
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<tbody>
<tr>
<td>Self-Funded</td>
<td>23%</td>
<td>91</td>
</tr>
<tr>
<td>Paid for by your Organisation – in full</td>
<td>18%</td>
<td>70</td>
</tr>
<tr>
<td>Paid for by your Organisation – partially</td>
<td>12%</td>
<td>46</td>
</tr>
</tbody>
</table>

**How many hours of CPC activities do you think would be appropriate for EMTs in a 12-month period?**

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<tbody>
<tr>
<td>20 hours</td>
<td>14%</td>
<td>58</td>
</tr>
<tr>
<td>21-40 hours</td>
<td>25%</td>
<td>101</td>
</tr>
<tr>
<td>41-60 hours</td>
<td>17%</td>
<td>69</td>
</tr>
<tr>
<td>61-80 hours</td>
<td>8%</td>
<td>31</td>
</tr>
<tr>
<td>81-100 hours</td>
<td>8%</td>
<td>34</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>37</td>
</tr>
<tr>
<td>Skipped question</td>
<td>17%</td>
<td>69</td>
</tr>
</tbody>
</table>

**EMTs who do not maintain their CPC and who continue not to meet the requirements, should not be allowed to re-register as an EMT**

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<tbody>
<tr>
<td></td>
<td>78%</td>
<td>273/352</td>
</tr>
</tbody>
</table>

**Evidence of CPC should be a condition for EMT registration**

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<tbody>
<tr>
<td></td>
<td>95%</td>
<td>341/359</td>
</tr>
</tbody>
</table>

**Registration as an EMT with PHECC is of personal importance**

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<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>95%</td>
<td>381</td>
</tr>
</tbody>
</table>
Consultation regarding specific Continuous Professional Competence activities

Most respondents considered practical type learning relevant (Table 4): training on a simulation manikin 92% (297/321), regular practical assessments 79% (253/319); Cardiac First Response (CFR/CPR) re-validation 97% (311/322); practical training scenarios 97% (313/321); completing a duty with paramedics/advanced paramedics 95% (306/321) and annual major incident exercises 92% (297/319).

With regard to access to e-learning followed by related practice: 91% of respondents (291/320) believed this to be very relevant (45%, n=145) or relevant 46% (n=146); compared with ‘e-learning modules only and no related practice being very relevant 9% (n=29) and relevant 26% (n=80). ‘E-Learning modules only and no related practice’ recorded the highest ‘Very Irrelevant’ (8%, 27/313) / “irrelevant’ 24% (74/313) responses from all categories with a combined total of 32% (101/313) claiming it has no relevance.

In addition to the practical-type, hands-on activities preferred for CPC maintenance, EMTs also considered the following activities very relevant or relevant in maintaining Continuous Professional Competence: courses accredited by PHECC 96% (307/319); keeping a learning portfolio 90% (288/319); mentoring others 87% (277/317); lecturing/teaching 86% (276/319); being a Tutor 79% (251/316); attending relevant conferences 78% (246/317); appraisal with a senior EMT officer (or above) 78% (248/319); case study review 64% (204/317); being an examiner 69% (222/319); appraisal with a doctor/medical supervisor 65% (207/320); first aid competitions 50% (159/315); project work 48% (152/318); appraisal of a journal publication 39% (124/316).
Table 4: Relevance of potential CPC activities

<table>
<thead>
<tr>
<th>Very Relevant/Relevant = Relevant</th>
<th>Relevant</th>
<th>Not Relevant</th>
<th>Total Response to question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical training scenarios</td>
<td>313</td>
<td>2</td>
<td>321</td>
</tr>
<tr>
<td>Annual Cardiac First Response/CPR revalidation</td>
<td>311</td>
<td>6</td>
<td>322</td>
</tr>
<tr>
<td>Attending courses accredited by PHECC</td>
<td>307</td>
<td>2</td>
<td>319</td>
</tr>
<tr>
<td>Doing a duty with paramedics/advanced paramedics</td>
<td>306</td>
<td>7</td>
<td>321</td>
</tr>
<tr>
<td>Major Incident/Emergency exercises</td>
<td>297</td>
<td>7</td>
<td>319</td>
</tr>
<tr>
<td>Training on a simulation manikin</td>
<td>297</td>
<td>7</td>
<td>321</td>
</tr>
<tr>
<td>Access to e-learning followed by related practice</td>
<td>291</td>
<td>5</td>
<td>320</td>
</tr>
<tr>
<td>Keeping a portfolio of CPC activities</td>
<td>288</td>
<td>4</td>
<td>319</td>
</tr>
<tr>
<td>Mentoring others</td>
<td>277</td>
<td>12</td>
<td>317</td>
</tr>
<tr>
<td>Lecturing/teaching</td>
<td>276</td>
<td>15</td>
<td>319</td>
</tr>
<tr>
<td>Access to medical journals/medical books</td>
<td>266</td>
<td>11</td>
<td>320</td>
</tr>
<tr>
<td>Regular practical assessments</td>
<td>253</td>
<td>13</td>
<td>319</td>
</tr>
<tr>
<td>Being a Tutor</td>
<td>251</td>
<td>19</td>
<td>316</td>
</tr>
<tr>
<td>Appraisal with senior EMT Officer (or above)</td>
<td>248</td>
<td>20</td>
<td>319</td>
</tr>
<tr>
<td>Relevant Conferences e.g. RESUS</td>
<td>246</td>
<td>18</td>
<td>317</td>
</tr>
<tr>
<td>Being an examiner</td>
<td>222</td>
<td>30</td>
<td>319</td>
</tr>
<tr>
<td>Appraisal with a Doctor/medical supervisor</td>
<td>207</td>
<td>37</td>
<td>320</td>
</tr>
<tr>
<td>Case Study review</td>
<td>204</td>
<td>20</td>
<td>317</td>
</tr>
<tr>
<td>First Aid Competitions</td>
<td>159</td>
<td>78</td>
<td>315</td>
</tr>
<tr>
<td>Project work</td>
<td>152</td>
<td>50</td>
<td>318</td>
</tr>
<tr>
<td>Appraisal of journal publications</td>
<td>124</td>
<td>62</td>
<td>316</td>
</tr>
<tr>
<td>e-learning modules only and no related practice</td>
<td>109</td>
<td>101</td>
<td>313</td>
</tr>
</tbody>
</table>
Discussion

Whilst there is evidence of competence and CPD programmes within ambulance services internationally (e.g., Norway [18], Australia [19], UK [20], Canada [21]), the evidence of any consultation with practitioners prior to the introduction of such programmes is scarce.

This is the first study of attitudes towards professional competence among EMTs in Ireland and indicates that there appears to be a genuine enthusiasm for the introduction of CPC and a positive link to professionalism, similar to other healthcare professions [9, 11, 12, 22-25]. This enthusiasm towards CPC is reinforced further as a significant number of EMTs are already maintaining a learning portfolio and participating in CPC activities, as the vast majority of participants agreed that CPC should be a requirement for PHECC registration and as 95% believed that registration with PHECC is of personal importance to them. This view of CPD being a requirement for registration is supported by legislation for some professions [26-28] or shown in previous studies to be shared by practitioners themselves [25, 29].

E-learning

E-learning is the use of internet technologies to enhance knowledge and performance [30]. There are many formats in which e-learning is delivered and many terms synonymous with e-learning, such as web-based (WBL) or on-line learning. One of the advantages of e-learning is that it can be synchronous or asynchronous and, therefore, can be flexible and particularly attractive for pre-hospital practitioners. In Ireland, PHECC has progressed the use of on-line examinations and learning modules since its formation. Indeed, Irish EMT examinations are delivered partially via an
electronic software programme. Most Health Professions regulators tend to accredit and set standards in training rather than develop training [31, 32] and, so, the e-learning approach (albeit blended with practical instruction provided by the training institutions) utilised most recently by PHECC to allow paramedics and APs complete on-line learning modules is unusual. Furthermore, this training methodology had not been in place for the initial training of EMTs surveyed and, taking cognisance of the survey results, it would appear that EMTs might use e-learning followed by practical reinforcement, but would appear less eager to use e-learning alone as a means to maintain competence.

Our survey included 22 potential CPC activities (see Table 3) and asked which activities did EMTs believe were relevant / irrelevant. The results showed that practical, hands-on activities were preferred over theoretical / non-practice type activities. Also, there were less negative responses regarding activities related to practical skills than to theoretical skills. This further substantiates the case for practical, hands-on activities, whether as a standalone activity or coupled with the e-learning approach. The EMTs surveyed in this study seemed to share the view of Ruiz et al in that perhaps they did not value e-learning as a replacement for traditional instructor-led training but rather as a complement to it, forming part of a blended-learning strategy [30]. EMTs function in environments that require lateral thinking [33]. Arguably, variation in learning methodologies could be encouraged so to facilitate the variations in personal learning styles while also taking cognisance of nuances in practice.

Previous studies with Irish advanced paramedics and paramedics reinforce the concept of practical-type learning as a preferred methodology and as an effective way of maintaining skills [7, 34] and that skills practice is an integral part of maintaining competence [35]. Indeed, our results, in part, reinforce the focus of older / traditional
basic training curricula for ambulance staff in the United Kingdom and Ireland, which for the most part, was skills-based [36]. This is quite different to results seen for other professions who tend to prefer attending conferences, lectures and reading of relevant journals [9, 12], even though there is little evidence to suggest that attending conferences had any direct impact on improving professional practice [37].

**CPC annual hours**

Internationally, there are similarities in the way in which CPC hours are recorded, most being based on an hours-related credit system, in which one hour of educational activity equates to one credit and the number of credit/hours required vary from between 50-100 per year [29]. Irish doctors now, under the Medical Practitioners Act [26] must meet professional competence requirements [38] and this currently is 50 hours per year. In that context, the respondents in this survey believe that it would not be unreasonable to expect EMTs to complete 20-40 hours annually.

**Limitations**

The study had a number of strengths and weaknesses. The majority of respondents were male 70% (n=272) in what is predominantly a male dominated profession in Ireland. At the time of the survey, there were 634 males registered with PHECC representing 69% of all EMTs registered (n=925). Thus, the sample of participants in this study was similar to the proportion of male EMTs registered with PHECC. The response to this survey was quite favourable, with a response rate of over 40%. This too is perhaps not surprising and may be due to the fact that the EMTs surveyed, for the most part, were affiliated with the voluntary organisations and, by association,
are enthusiastic volunteers who self-nominated to progress to EMT programmes and subsequent examinations.

Notably, one group of EMTs may not have participated. These are EMTs not affiliated to any organisation and who most likely completed the EMT training programme independently.

While the response to the survey was quite favourable, we acknowledge some methodological considerations may limit generalisability. For instance, while we report data from 399 responses, this represented 43% of all registered EMTs. Our study was limited to those with valid email addresses on the PHECC register and clearly those for whom the subject area was a priority this means that our sample may not be representative of EMTs in general. Furthermore, the fact that a significant number of respondents represented a younger population with over 27% under the age of thirty, and a further 30% under the age of forty may have influenced the results. Perhaps a younger population may prefer a blended learning approach with an active participation and e-learning combination given the possibility that they may be more familiar with on-line/e-learning experiences. Perhaps too the length of the survey may have been found too long or complex possibly reducing the return rate. Further research following the introduction of CPC for EMTs may expand upon these findings.
Conclusions

To date, little research has been conducted with PHECC registered practitioners in general or on EMTs and CPD/C internationally. This survey is the first to ascertain the opinions of EMTs regarding CPC in terms of what is being completed currently, and how it may be developed in Ireland in the coming years.

The results of this survey demonstrate, at the very least, emphasis will need to be placed on practical activities such as: Cardiac First Response, maintaining a portfolio of evidence, mentoring others, completing operational shifts with paramedics and advanced paramedics and a blended learning approach with e-learning.

Conversely, less emphasis should be placed on e-learning alone and prudent purveyors of education for pre-hospital practitioners should emphasise inclusion of practical-type education.

There appears to be a genuine enthusiasm towards CPC, with a large number of EMTs already completing CPC activities, maintaining a learning portfolio and maintaining their registration. Maintaining this motivation is an important facet of effective professional competence and development.

Competing interests

The authors declare that they have no competing interests.

Author’s contributions

SK conceived of the study and was involved in the design, collection of data, data analysis, drafting the manuscript. WC and CD (principal investigator) were involved in the conception of the study, data analysis and interpretation and drafting the
manuscript. All authors read, reviewed the manuscript critically for intellectual content, and approved the final manuscript.

Acknowledgements

The authors thank the Registered EMTs who participated in the conference feedback session and those who gave their time to respond to the questionnaire. Thanks also to Dr Helen Purtill of the Statistical Consulting Unit, University of Limerick for her comments on the design and results of the survey and Dr. Niamh Cummins, from the Centre for Pre-Hospital Research (CPR) University of Limerick, for her comments on the results and manuscript.

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CD: Chair & Director of Research, Graduate Entry Medical School, University of Limerick, Ireland
References

1. The Pre-Hospital Emergency Care Council  
   [http://www.phecit.ie/PHECC/The_register/PHECC/The_Register/Register]

   [http://hdl.handle.net/10147/81141]

3. The Pre-Hospital Emergency Care Council Strategic Plan 2011-2014  
   ns/Strategic%20Plan%202011-2014.pdf]

4. Mooney S, Bury G: Cardiopulmonary resuscitation in a moving ambulance: Is the  
   one person over the head technique as effective as standard 2 person CPR?  

5. Figgis K, Slevin O, Cunningham JB: Investigation of paramedics' compliance with  
   clinical practice guidelines for the management of chest pain. EMJ 2010, 27:151-  
   155.


8. Henwood SM, Yielder J, Flinton D: Radiographers attitudes to mandatory CPD: a  
   comparative study in the United Kingdom and New Zealand. Radiography 2004,  
   10:251-258.


10. Murphy C, Cross C, Mc Guire D: The motivation of nurses to participate in  

11. Ryan J: Continuous professional development along the continuum of lifelong  

12. Schostak J, Davis M, Hanson J, Brown T, Driscoll P, Starke I, Jenkins N:  
    'Effectiveness of Continuing Professional Development' project: a summary of  

13. Report on the continuing professional development of staff nurses and staff  
    midwives [http://www.lenus.ie/hse/handle/10147/44776]

    effectiveness of self-assessment on the identification of learner needs, learner  
    activity, and impact on clinical practice: BEME Guide no. 10. Med Teach 2008,  
    30:124-145.


16. International Resuscitation Conference and Skills Showcase  
    [http://www.resus.ie/timetable.html]
17. Mindgenius
[http://www.mindgenius.com/?_kk=MindGenius&_kt=8020e022-27be-4aeb-a373-b4e2397393e4]


19. Paramedic professional competency standards project report

20. Health and Care Professions Council UK: Continuing Professional Development and Your Registration
[http://www.hpcuk.org/assets/documents/10001314CPD_and_your_registration.pdf]

21. National occupational competency profile for paramedics


26. Medical Practitioners Act

27. National registration and accreditation scheme for the Health Professions.

28. Statutory Registration for Health and Social Professionals


31. Evaluation of the An Bord Altranais Category 1 Approval Policy and Process
32. Irish Medical Council [http://www.medicalcouncil.ie/Education-and-Training/]


34. Simpson PM, Bendall JC, Patterson J, Middleton PM: Beliefs and Expectations of Paramedics towards evidence-based practice and research. *Int J Evid Based Healthc* 2012, 10:197-203.


38. Professional Competence Requirements [http://www.medicalcouncil.ie/Information-for-Doctors/Professional-Competence-FAQ/Professional-competence-requirements.html]
Chapter 5

Continuous Professional Competence (CPC) for Paramedics and Advanced Paramedics:

A national study

Published in:

BMC Medical Education (2014) 14 (1), 41
Continuous Professional Competence (CPC) for Paramedics and Advanced Paramedics: a national study

Published: BMC Medical Education (2014) 14 (1),41

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Abstract

**Background:** Internationally, continuing professional competence (CPC) is an increasingly important issue for all health professionals. With the imminent introduction of a CPC framework for paramedics and advanced paramedics (APs) in Ireland, this paper aims to identify factors that might influence this CPC framework and to determine what registrants considered optimal educational outcomes and activities, and their attitude towards CPC.

**Methods:** All paramedics and APs registered in Ireland (n=1816) were invited by email to complete an anonymous on-line survey. The study instrument was designed based on CPD questionnaires used by other healthcare professions. Quantitative analysis was performed.

**Results:** The overall response rate was 43% (n=789), with 82% of APs and 38% of paramedics participating. Eighty-nine per cent agreed that registration was of personal importance; 74% agreed that evidence of CPC should be maintained and 39% believed that persistent failure to meet CPC requirements should mandate denial of registration. From a pre-determined list of activities, respondents indicated practical training scenarios (94%), cardiac re-certification (92%), e-learning supplemented by related practice (92%) and training with simulation manikins (88%) were most relevant, while e-learning alone (36%), project work (27%) and reading journal articles (24%) were least relevant.

**Conclusion:** Irish Paramedics and APs are supportive of CPC linked with their professional development and registration. Blended learning, involving evidence of patient contact, team-based learning and practical skills are preferred CPC activities.
Keywords: Paramedics, Advanced Paramedics, Continuous Professional Development, CPD, Continuous Professional Competence.
Background

In 1993, a report from the Irish Government [1] recommended a significant improvement in the quality of training provided to ambulance personnel. This recommendation was reiterated most recently in the PHECC strategic plan (2011-2014) where the need to develop and implement a continuous professional competence (CPC) framework was stated [2]. This task is made more difficult in Ireland as, currently, once qualified there is no regulatory requirement for the practitioner to provide evidence of competence, or any link between competence and registration to practice. However, it is reasonable that practitioners and consumers alike view maintenance of competency as a basic element of ethical and responsible practice [3].

One of the functions of a healthcare Regulator is to protect the public by ensuring that acceptable standards of care are being provided [4]. Previous studies have assessed paramedic and advanced paramedic (AP) training and continuing education in Ireland [5, 6] and internationally [7-9]. However, in this study we wished to determine, for the first time, the attitudes of Irish paramedics and APs towards CPC, their preferred activities, delivery format and relevance to their roles.

It has been stated that any form of compulsory education is incongruent with the nature of both being a professional and adult; professionals should be self-directed enough to participate autonomously in educational activities rather than being compelled [10]. That, combined with a proliferation of training and education formats that, without justification through specific needs assessment, are unlikely to be effective [11] compelled us to devise a short answer survey to guide and inform the impending CPC implementation in Ireland.
Methods

Context
Pre-hospital care in Ireland is largely provided by the Health Service Executive (HSE) National Ambulance Service (NAS) and (in parts of Dublin city) the ‘Dublin Fire Brigade’. Other providers include the Irish Permanent Defence Forces, Coastguard, and private ambulance services, in addition to Emergency Medical Technicians, mostly within the voluntary organisations: Civil Defence, Order of Malta Ireland, St. John Ambulance and the Irish Red Cross. All of these practitioners are registered with the regulating authority, Ireland’s Pre-Hospital Emergency Care Council (PHECC).

Participants
In February 2012, all paramedics and APs licensed to practice in Ireland and registered with the Pre-Hospital Emergency Care Council’s (PHECC) with valid email addresses (n=1816) were contacted and provided a link to the Survey Monkey™ online study instrument and to a concise, unbiased explanation of the survey topic. Participation was voluntary and anonymous. Consent to participate was recorded. The design and conducting of the study, taking into consideration published healthcare professions’ questionnaires relating to continuous professional development (CPD) [12, 13] were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland.
Data collection and analysis

Health professionals are increasingly expected to identify their own learning needs through self-assessment [14]. Therefore, the survey questions were designed to elicit participants’ views on CPC. The survey was piloted by 20 registered paramedics who were subsequently excluded from the analyses.

The questionnaire based on questionnaires used by other professions [12, 13] comprised questions relating to: demographics; opinions regarding CPC, including the role of the employer; CPC portfolio development; linkage or CPC and registration. The response data were downloaded from Survey Monkey™ software to an electronic data file and quantitative analysis was performed using Statistical Packages for the Social Sciences (SPSS version 20.0). To make analysis more meaningful, responses to the five-point Likert scale were analysed using three options, ‘strongly agree / agree’, ‘undecided’ and ‘strongly disagree / disagree’.

Results

Demographics

789/1816 responses were received (43% of all registered paramedics and APs with email addresses), of whom 598 were paramedics. While the largest number of responses to the survey was from paramedics (38%, 598), 82% of the advanced paramedic cohort participated (191 of 232 APs) representing the greatest proportional response (Figure 1). The majority of respondents were male (85%, 670) (Table 1). These respondents predominantly served in the Irish National Ambulance Service (71%) and the Dublin Fire Brigade (14%) (Figure 2).
A total of 363 (46%) participants had been registered in Ireland for greater than six years, while 336 (30%) had been registered for 3-6 years and the remainder for less than 3 years. Respondents who had been with their organisation for less than five years represented 33% (260) of the total surveyed, while 15% (113) had over 20 years experience with their respective organisations.
Figure 1: Registered paramedics and APs in Ireland and number of responses

Total AP and Paramedics on Register (n = 2609)

No email or invalid email address (n = 793)

Total Registered APs and APs with valid email addresses (n = 1816)

Total Responses to Survey (n = 789) 43% Response Rate

APs Total registered (n = 232)

AP Responses (n = 191) 82%

AP Interns Responses (n = 21) 11%

AP Trainees (n = 13) 7%

Registered AP Responses (n = 157) 82%

Paramedic Total Registered (n = 1584)

Paramedic Responses (n = 598) 38%

Paramedic intern Responses (n = 49) 8%

Paramedic Trainee Responses (n = 17) 3%

Registered Paramedic Responses (n = 532) (89%)
<table>
<thead>
<tr>
<th>Registration Status with Regulatory Body (PHECC)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Paramedic</td>
<td>138</td>
<td>19</td>
<td>157</td>
</tr>
<tr>
<td>Advanced Paramedic Intern</td>
<td>19</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Advanced Paramedic Trainee</td>
<td>11</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Paramedic</td>
<td>451</td>
<td>81</td>
<td>532</td>
</tr>
<tr>
<td>Paramedic Intern</td>
<td>38</td>
<td>11</td>
<td>49</td>
</tr>
<tr>
<td>Paramedic Trainee</td>
<td>14</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Response Percentage</td>
<td>86%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Response Totals</td>
<td>670</td>
<td>119</td>
<td>789</td>
</tr>
</tbody>
</table>
Figure 2: Responses from paramedics and advanced paramedics based on organisation (789 respondents)

Dublin Fire Brigade (14%)
HSE - National Amb. Service (71%)
Irish Coastguard (2%)
Permanent Defence Forces (2%)
Private Ambulance Service (7%)
Other (4%)

Paramedics
Advanced Paramedics

- Dublin Fire Brigade: 24 respondents
- HSE - National Amb. Service: 153 respondents
- Irish Coastguard: 2 respondents
- Permanent Defence Forces: 5 respondents
- Private Ambulance Service: 51 respondents
- Other: 30 respondents
Registration with PHECC was considered personally important by 89% (697) of respondents, with only 2% disagreeing. Indeed, in the context of active professional pre-hospital practitioners, 77% (615) of the paramedics/APs stated that CPC was extremely important. Most respondents (74%, 584) agreed that CPC should be a condition of registration to practice, and 67% (526) agreed that paramedics and APs should maintain evidence of CPC activities to ensure registration, while only 8% (66) disagreed.

Further, 61% (487) of respondents believed that those practitioners who do not maintain CPC and continue not to meet the necessary requirements should not be allowed to re-register at their current level. 39% (307) agreed with the suggestion that those who fail to meet the CPC requirements should be allowed to register at the level below their current registration, but 23% (179) did not support this proposition. Of interest in the context of introducing a CPC framework for the first time, the majority of respondents (70%, 551) would not consider registering at a lower level rather than having to complete CPC.

CPC activities

A small majority of paramedics / APs surveyed (53%), although not obligated, maintained a professional portfolio at the time of the survey. Fifty seven per cent had completed greater than 20 hours of CPC activities in the prior 12 months, with nearly 20% (19.9%) having completed more than 60 hours (Figure 3). When queried as to appropriate levels of CPC required in a 12-month period, 35% believed 21-40 hours, 26% that 41-60 hours, and 17% that 20 hours would be adequate (Figure 4).
Forty per cent of those who had completed their CPC in the previous year had funded participation themselves, 23% had their costs covered in full by their organisation, 9% had their costs partially covered and 12% had completed only cost-free CPC activities. Sixty five per cent preferred funding to be provided for their own personal CPC activities so that they may decide what is relevant to their own needs, while 69% believed that the regulator should provide funding for organisations to develop their own customised CPC activities.

53% (422) of participants held the view that any individual’s CPC should be subject to audit by their respective organisations, while 38% (302) disagreed with the concept of CPC being the sole responsibility of the practitioner. Over 79% (626) felt that their organisation should have input into what comprised their CPC, a view that was supported somewhat by 43% (344) disagreeing with the regulatory body alone controlling composition of CPC (although 21% (166) favoured this).
Figure 3: Number of CPC hours recorded in the previous 12-month period by APs and paramedics
Figure 4: Number of annual CPC hours deemed appropriate by APs and paramedics

- 81-100 hours: 9.2%
- 61-80 hours: 12.1%
- 41-60 hours: 26.4%
- 21-40 hours: 35.0%
- 20 hours: 17.3%
Consultation regarding specific models of Continuous Professional Competence

Overall, the majority of respondents (77%) favoured the introduction of CPC by the regulatory body using a ‘mixed’ model approach of combining ‘mandatory’ and ‘voluntary’ activities, with 77% supportive of minimum standard requirements that include evidence of Patient Care Report (PCR) completion, clinical practice guidelines (CPGs) compliance and patient management.

Most respondents considered practical type learning relevant to their roles (Table 2): practical training scenarios 94% (582), annual cardiac re-certification 92% (566), access to e-learning followed by related practice 92% (566), and training on simulation manikins 88% (535). The activities that received the highest ‘not relevant’ response were: ‘e-learning modules only and no related practice 36% (210); project work 27% (166); appraisal of journal publications 24% (147).

In addition to the practical-type, hands-on activities preferred for CPC maintenance, paramedics and APs also considered the following activities very relevant or relevant in maintaining Continuous Professional Competence: access to medical journals/books 88% (538/615); attending courses accredited by the Regulator (PHECC) 84% (518/614); annual Cardiac First Response (CFR) revalidation 85% (517/611); evidence of current CPG compliance 80% (489/611); mentoring others 79% (483/613); major incident/emergency exercises 78% (480/612); regular practical assessments 75% (458/613); working in a related hospital department 74% (453/612); keeping a portfolio of CPC activities 73% (441/606); attending relevant conferences 66% (405/613); lecturing/teaching 65% (403/612); appraisal with a senior Training Officer 61% (373/612); being a tutor 57% (349/607); appraisal with a doctor/medical
supervisor 51% (309/610); being an examiner 51% (309/607); case study review 46% (283/610).

**Discussion**

While some literature reports the development of ambulance CPD programmes internationally [7, 8] and while CPD is more likely to lead to a change in practice when a needs assessment has been conducted [15], literature that reports consultation with practitioners prior to the introduction of such programmes is limited. This first study of attitudes towards professional competence among paramedics and APs in Ireland suggests a genuine enthusiasm for the introduction of CPC, with 77% indicating that CPC was of personal importance to them, 74% indicating that evidence of CPC should be a condition for registration to practice (74%) and 53% already maintaining a CPC portfolio and participating in CPC activities, although not currently mandated to do so (Figure 3).

Funding and available time have both been identified in previous studies of healthcare workers as a barrier to CPD [16]. While 40% stated they had paid for CPC activities themselves, 65% would prefer if funding was provided and for them to arrange their own personal CPC activities, while 69% believed that the regulator should provide funding for organisations to develop their own customised CPC activities.
Table 2: Relevance of potential CPC activities

<table>
<thead>
<tr>
<th>Very Relevant/Relevant = Relevant</th>
<th>Relevant</th>
<th>% of Total Responses</th>
<th>Not Relevant</th>
<th>Relevant</th>
<th>% of Total Responses</th>
<th>Total Responses For Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical training scenarios</td>
<td>582</td>
<td>94%</td>
<td>9</td>
<td>1%</td>
<td>613</td>
<td></td>
</tr>
<tr>
<td>Annual Cardiac re-certification</td>
<td>566</td>
<td>92%</td>
<td>29</td>
<td>4%</td>
<td>616</td>
<td></td>
</tr>
<tr>
<td>Access to e-learning followed by related practice</td>
<td>555</td>
<td>90%</td>
<td>11</td>
<td>2%</td>
<td>617</td>
<td></td>
</tr>
<tr>
<td>Access to medical journals/medical books</td>
<td>538</td>
<td>88%</td>
<td>17</td>
<td>3%</td>
<td>615</td>
<td></td>
</tr>
<tr>
<td>Training on a simulation manikin</td>
<td>535</td>
<td>88%</td>
<td>25</td>
<td>4%</td>
<td>613</td>
<td></td>
</tr>
<tr>
<td>Attending courses accredited by PHECC</td>
<td>518</td>
<td>84%</td>
<td>30</td>
<td>5%</td>
<td>614</td>
<td></td>
</tr>
<tr>
<td>Annual Cardiac First Response revalidation</td>
<td>517</td>
<td>85%</td>
<td>60</td>
<td>10%</td>
<td>611</td>
<td></td>
</tr>
<tr>
<td>Evidence of current CPG compliance</td>
<td>489</td>
<td>80%</td>
<td>25</td>
<td>4%</td>
<td>611</td>
<td></td>
</tr>
<tr>
<td>Mentoring others</td>
<td>483</td>
<td>79%</td>
<td>47</td>
<td>8%</td>
<td>613</td>
<td></td>
</tr>
<tr>
<td>Major Incident/Emergency exercises</td>
<td>480</td>
<td>78%</td>
<td>34</td>
<td>5%</td>
<td>612</td>
<td></td>
</tr>
<tr>
<td>Regular practical assessments</td>
<td>458</td>
<td>75%</td>
<td>48</td>
<td>8%</td>
<td>613</td>
<td></td>
</tr>
<tr>
<td>Working in a related hospital department</td>
<td>453</td>
<td>74%</td>
<td>64</td>
<td>10%</td>
<td>612</td>
<td></td>
</tr>
<tr>
<td>Keeping a portfolio of CPC activities</td>
<td>441</td>
<td>73%</td>
<td>55</td>
<td>9%</td>
<td>606</td>
<td></td>
</tr>
<tr>
<td>Relevant Conferences e.g RESUS</td>
<td>405</td>
<td>66%</td>
<td>74</td>
<td>12%</td>
<td>613</td>
<td></td>
</tr>
<tr>
<td>Lecturing/teaching</td>
<td>403</td>
<td>65%</td>
<td>76</td>
<td>12%</td>
<td>612</td>
<td></td>
</tr>
<tr>
<td>Appraisal with senior Training Officer (or above)</td>
<td>373</td>
<td>61%</td>
<td>92</td>
<td>15%</td>
<td>612</td>
<td></td>
</tr>
<tr>
<td>Being a Tutor</td>
<td>349</td>
<td>57%</td>
<td>95</td>
<td>16%</td>
<td>607</td>
<td></td>
</tr>
<tr>
<td>Appraisal with a Doctor/medical supervisor</td>
<td>309</td>
<td>51%</td>
<td>115</td>
<td>19%</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>Being an examiner</td>
<td>309</td>
<td>51%</td>
<td>116</td>
<td>19%</td>
<td>607</td>
<td></td>
</tr>
<tr>
<td>Case Study review</td>
<td>283</td>
<td>46%</td>
<td>114</td>
<td>19%</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>Project work</td>
<td>223</td>
<td>37%</td>
<td>166</td>
<td>27%</td>
<td>607</td>
<td></td>
</tr>
<tr>
<td>e-learning modules only and no related practice</td>
<td>203</td>
<td>33%</td>
<td>210</td>
<td>36%</td>
<td>607</td>
<td></td>
</tr>
<tr>
<td>Appraisal of journal publications</td>
<td>188</td>
<td>31%</td>
<td>147</td>
<td>24%</td>
<td>607</td>
<td></td>
</tr>
</tbody>
</table>
Demographics

The majority of responses were from males and from registrants within the National Ambulance Service. This is unsurprising as the ambulance services in Ireland are provided, predominately, by the National Ambulance Service (NAS). In addition to the NAS, Dublin Fire Brigade provides ambulance services through twelve ambulances based throughout Dublin City. Both services are predominately male dominated.

CPC Activities

This survey identified a number of useful topics and activities that could be considered for the purpose of CPC and has identified some areas of low CPC priority for registrants.

Our survey included 23 potential CPC activities (Table 2) and asked which activities participants believed were relevant/irrelevant. Practical hands-on, training using simulation manikins, team-based activities or e-learning followed by practical skills were preferred over non-practical/theory-type activities. Also, there were less negative responses regarding activities related to practical skills than to theoretical skills. A study with Irish APs reinforced the concept of practical-type learning as a preferred methodology and as an effective way of maintaining competence [6], indeed scenario-based simulations have been used since 2007 as part of routine continuing education programmes by some American emergency medical services [9]. Interactive methods, for the purposes of CPD, such as team-based learning and case-based learning, as compared to lectures, impart sustainable knowledge and lead to high satisfaction among participants [17]. Davis et al [18] in their systematic review
found that interactive and mixed educational sessions were associated with a significant effect on physicians’ performance, effected change in professional practice and, on occasion, healthcare outcomes.

The least relevant activities were associated with non-skills/practical, individually-based, passive activities: e-learning modules only and no related practice 36% (210), project work 27% (166), appraisal of journal publications 24% (147). This is quite different to results seen from other professions who have tended to prefer attending conferences, lectures and reading of relevant journals [13, 19] even though there is little evidence to suggest that attending conferences had any direct impact on improving professional practice [20].

Studies on Dieticians and cardiac nurses [13, 21] have shown that journal reading was a popular preference and yet, for doctors, the effectiveness of continuous medical education (CME) increases as the intervention strategy becomes more active while activities classed as passive are not associated with changes in physician performance or patient outcome [20].

**Model of CPC**

Groups were split in relation to opinion on annual hours of CPC; 35% (194) believed that 21-40 hours, while 26% (146) believed 41-60 hours were adequate. 77% of the respondents (474) favoured a ‘mixed’ model approach for CPC with a similar amount supporting the idea of minimum standard requirements which involved evidence of patient care. This ‘mixed’ model approach would allow for a ‘compulsory’ element to the CPC requirements and an additional ‘voluntary’ allowance that is still required but would allow the registrant some flexibility in deciding which activities to choose.

The benefit of mandatory CPD in healthcare professions has been debated. O’Connor’s [22] study on motivating factors for nurses participating in continuing
education (CPD) suggested that the mandatory nature of the education had little influence in motivating participation, while Lee et al [23] found that 66% of Australian radiographers thought CPD should be voluntary. Tellingly, Friedman and Woodhead [24] suggested that those professional bodies utilising compulsory or mixed policies with respect to CPD were likely to be promoting CPD as a means of maintaining competence.

Regarding sanctions, 61% (487) agreed that the practitioner should not be allowed to re-register at that level while 39% (307) agreed that those practitioners who fail to meet the PHECC CPC requirements should be allowed to register at the level below their current registration level. This finding is higher than from some other healthcare professions: 42% of pharmacists surveyed [25] favoured sanctions yet few dieticians favoured disciplinary action for those who failed to meet the registration requirements [21].

**Methodological considerations**

While this first study of attitudes towards CPC among paramedics and APs in Ireland involved a national sample, we acknowledge some methodological considerations may limit generalisability. For instance, while we report data from 789 responses, this represented 43% of all registered paramedics and APs. Our study was limited to those with valid email addresses and clearly those for whom the subject area was a priority. Further research following the introduction of CPC for Irish paramedics and APs may expand upon these findings.
Conclusions

There is a paucity of research conducted with registered pre-hospital practitioners in Ireland. This survey is the first to ascertain the opinions of paramedics and APs regarding CPC. This study further suggests that there is willingness on behalf of Irish paramedics and APs to engage with CPC, which is viewed as extremely important. Respondents considered it appropriate to link CPC with registration to practice and that there should be sanctions against those who do not meet CPC requirements.

The results of this survey demonstrate, at the very least, that emphasis will need to be placed on a compulsory ‘mixed’ model approach of CPC which includes evidence of patient contact and CPC activities that are practically orientated: practical training scenarios; annual cardiac recertification; e-learning followed by related practice; training on simulation manikins. Conversely, there is less interest in non-skills/practical, individual passive learning activities: e-learning alone and no related practice; project work, journal reviews. Somewhere between twenty to sixty hours of CPC activities per annum would appear to be acceptable to Irish practitioners.

Competing Interests

The authors declare that they have no competing interests.

Author's contributions

SK conceived of the study and was involved in the design, collection of data, data analysis, drafting the manuscript. WC and CD (principal investigator) were involved in the conception of the study, data analysis and interpretation and drafting the manuscript. All authors read, reviewed the manuscript critically for intellectual content, and approved the final manuscript.
Acknowledgements

The authors thank the registered paramedics and APs who responded to the questionnaire. Thanks also to Dr Helen Purtill of the Statistical Consulting Unit, University of Limerick for her comments on the design and results of the survey.

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References


Chapter 6

A Comparative National Study of Continuous Professional Competence (CPC) amongst Pre-hospital Practitioners

Submitted for Publication,

Under review in the BMC Health Services Research
Chapter 6: A Comparative National Study of Continuous Professional Competence (CPC) amongst Pre-hospital Practitioners

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Submitted for publication, under review in the BMC Health Services Research

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Abstract

Background: Internationally, continuing professional competence (CPC) is an increasingly important issue for all health professionals. With the imminent introduction of a CPC framework for emergency medical technicians (EMTs), paramedics and advanced paramedics (APs) in Ireland, this study aimed to identify attitudes towards CPC and factors that might influence such a CPC framework.

Methods: All EMTs (n=925) paramedics and APs (n=1816) registered in Ireland were invited by email to complete an anonymous on-line survey. The study instrument was designed based on CPD questionnaires used by other healthcare professions. Quantitative analysis was performed.

Results: The overall response rates were: EMTs 43% (n=399), APs and paramedics 43% (n=789), with 82% of APs and 38% of paramedics participating. The majority of participants in all groups agreed that registration was of personal importance and that evidence of CPC should be maintained; 39% of paramedics/APs and 78% of EMTs believed that persistent failure to meet CPC requirements should mandate denial of registration. From a pre-determined list of activities, in access of 88% of all respondents indicated practical training scenarios, cardiac re-certification, e-learning supplemented by related practice and training with simulation manikins were most relevant to these roles. However e-learning alone (paramedic/AP 36%; EMT 35%), project work (paramedic/AP 27%; EMT 48%) and appraisal of journal articles (paramedic/AP 24%; EMT 39%) were least relevant to them.

Conclusion: Irish EMTs, paramedics and advanced paramedics are supportive of CPC and favour a ‘mixed’ model approach which includes: blended learning, practical
skills, simulation, practical/team-based exercises, e-learning combined with practical skills, and evidence of patient contact. It is hoped that these insights inform the CPC guidelines to be introduced.

**Keywords:** paramedics, advanced paramedics, EMTs, Continuous Professional Development, CPD, Continuous Professional Competence.
Introduction

Ambulance Services provided by pre-hospital practitioners in Ireland is governed by the Regulatory body, the Pre-Hospital Emergency Care Council (PHECC), an independent statutory agency responsible for implementing standards of education and training for pre-hospital emergency care practitioners. PHECC maintains a register of pre-hospital practitioners and those licensed practitioners are permitted legally to practice and use guidelines developed by PHECC to manage patients. There are three level of practitioner: emergency medical technician (EMT), paramedic and advanced paramedic (AP).

Pre-hospital care in Ireland is provided by the Health Service Executive’s (HSE) National Ambulance Service (NAS) and (in parts of Dublin city) the ‘Dublin Fire Brigade’. Staff who respond to pre-hospital incidents are all trained to paramedic or advanced paramedic (AP) level. In addition, pre-hospital care is provided at sporting and other public events by emergency medical technicians, mostly within the voluntary organisations: Civil Defence, Order of Malta Ireland, St. John Ambulance and the Irish Red Cross.

PHECC’s strategic plan (2011-2014) stated the need to develop and implement a continuous professional competence (CPC) framework [1]. In Ireland, currently, once qualified there is no regulatory requirement for the practitioner to provide evidence of competence, or any link between competence and registration to practice. However, it is reasonable that practitioners and consumers alike view maintenance of competency as a basic element of ethical and responsible practice [2].

One of the functions of a healthcare Regulator is to protect the public by ensuring that acceptable standards of care are being provided [3]. Previous studies have assessed EMT, paramedic and advanced paramedic (AP) training and continuing education in
Ireland [4-6] and internationally [7-9]. However, in this study we wished to determine, for the first time, the collective attitudes of Irish EMTs, paramedics’ and APs towards CPC, their preferred activities, delivery format and relevance to their roles.

It has been stated that any form of compulsory education is incongruent with the nature of both being a professional and adult; professionals should be self-directed enough to participate autonomously in educational activities rather than being compelled [10]. That, combined with a proliferation of training and education formats that, without justification through specific needs assessment, are unlikely to be effective [11] compelled us to devise a short answer survey to guide and inform the impending CPC implementation in Ireland.

Additionally, such an approach appears to be relatively rare and may therefore inform or prove useful to others engaged in developing pre-hospital or other professional CPC/CPD or competency standards in other Countries.
Methods

Participants
In February 2012, all paramedics and APs licensed and registered with PHECC to practice in Ireland with valid email addresses (n=1816) were contacted and provided a link to a Survey Monkey™ online study instrument and to a concise, unbiased explanation of the survey topic. Similarly, in July/August 2012, all EMTs licensed to practice and registered with PHECC (n=925) were contacted by email and provided a similar link to the on-line survey. Participation was voluntary and anonymous. Consent to participate was recorded. The design and conducting of the study, taking into consideration published healthcare professions’ questionnaires relating to continuous professional development (CPD) [12-14] were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland.

Data collection and analysis
Health professionals are increasingly expected to identify their own learning needs through self-assessment [15, 16]. Therefore, the survey questions were designed to elicit participants’ views on CPC. The survey was piloted after a presentation on CPC to 120 EMTs at a biannual conference in 2011 [17]. Responses were recorded and summarized at the event using mind mapping software (MindGenius®). Following analysis of the exercise, the design of the questionnaire was finalized and trialed using 12 EMTs and subsequently by a further 20 registered paramedics/APs who were then excluded from the analyses.
The questionnaire comprised questions relating to: demographics; opinions regarding CPC, CPC portfolio development; linkage of CPC and registration. The response data were downloaded from Survey Monkey™ software to an electronic data file and quantitative analysis was performed using SPSS version 20.0. To make analysis more meaningful, responses to the five-point Likert scale were analyzed using three options, ‘strongly agree / agree’, ‘undecided’ and ‘strongly disagree / disagree’. Not every question was answered by every respondent and, therefore, answers are described by number and percentage of responses to specific questions.

**Results**

**Demographics**

There were 789/1816 responses received from paramedics and advanced paramedics (APs), 43% of all registered paramedics and APs with email addresses, of whom 598 were paramedics (38% of the national cohort) and 191 were advanced paramedics (82% of the national cohort). From the EMT cohort, there were 399/925 responses received (43% of all registered EMTs). While the largest number of responses to the survey was from paramedics, the EMT response rate was 43% (399) (Figure 1). The majority of respondents were male: paramedics/AP 85%, 670; EMT 70%, 271 (Table 1). There was a 30% (115) response from female EMTs compared to 15% (119) female response from paramedics and advanced paramedics. EMT responses were reasonably well dispersed across the Irish voluntary organisations: Order of Malta (96, 24%), Civil Defence (80, 20%), St. John Ambulance (29, 7%) and the Irish Red Cross (97, 24%). Paramedic and AP respondents predominantly served in the Irish National Ambulance Service (71%) and the Dublin Fire Brigade (14%) (Figure 2).
Figure 1. Registered EMTs, paramedics and advanced paramedics (APs) in Ireland and number of responses
## Table 1 Gender and registration level

<table>
<thead>
<tr>
<th>Registration Status with Regulatory Body (PHECC)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Paramedic</td>
<td>138</td>
<td>19</td>
<td>157</td>
</tr>
<tr>
<td>Advanced Paramedic Intern</td>
<td>19</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Advanced Paramedic Trainee</td>
<td>11</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Paramedic</td>
<td>451</td>
<td>81</td>
<td>532</td>
</tr>
<tr>
<td>Paramedic Intern</td>
<td>38</td>
<td>11</td>
<td>49</td>
</tr>
<tr>
<td>Paramedic Trainee</td>
<td>14</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Emergency Medical Technician (EMT)</td>
<td>271</td>
<td>115</td>
<td>386</td>
</tr>
<tr>
<td><strong>Response Totals</strong></td>
<td><strong>941</strong></td>
<td><strong>234</strong></td>
<td><strong>1175</strong></td>
</tr>
<tr>
<td>Gender not reported</td>
<td></td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

- Response Percentage: EMT  
  - Male: 70%  
  - Female: 30%

- Response Percentage: paramedic/advanced paramedic  
  - Male: 85%  
  - Female: 15%
Figure 2: Total amount of responses from EMTs, paramedics and advanced paramedics based on organisation
Attitudes towards Continuous Professional Competence and Registration

Registration with the national Regulator was considered personally important by 89% (697) of Paramedics/APs and 97% (381) of EMTs. In addition, 77% (615) of the Paramedics/APs and 86% (343) of EMTs stated that CPC was extremely important. Most Paramedic/AP respondents (74%, 584) agreed that CPC should be a condition of registration to practice, while 95% (341) of EMTs held that view. 67% (526) of the Paramedic/AP respondents agreed that paramedics and APs should maintain evidence of CPC activities to ensure registration, while 82% (329) of EMTs believed that to be the case.

39% (307) of Paramedics/APs agreed with the suggestion that those who fail to meet the CPC requirements should be allowed to register at the level below their current registration, but 23% (179) did not support this proposition.

CPC activities

A small majority of Paramedics/APs surveyed (53%), although not obligated, maintained a professional portfolio at the time of the survey. This majority was greater in the EMT group with 69% (220) of those surveyed stating that they maintained a portfolio. Fifty seven per cent of Paramedics/APs and 51% (160) of EMTs had completed greater than 20 hours of CPC activities in the prior 12 months, with 20% of Paramedics/APs and 28% of EMTs having completed more than 60 hours (Figure 3). When the Paramedics/APs were queried as to what they believed should be the appropriate levels of CPC required in a 12-month period, 35% believed 21-40 hours, 26% believed 41-60 hours, and 17% believed 20 hours would be adequate (Figure 4).

Yet 34% of EMTs believed that 21-40 hours was adequate, 23% that 41-60 hours, and 20% (58) that 20 hours would be adequate.
Figure 3 Number of CPC hours recorded in the previous 12-month period by EMTs, paramedics and APs

- **Over 100 hours**: 9.0% (EMT: 13.8%)
- **81-100 hours**: 3.3% (Paramedic/AP: 5.4%, EMT: 7.6%)
- **61-80 hours**: 7.6% (EMT: 8.7%)
- **41-60 hours**: 11.9% (EMT: 14.4%)
- **21-40 hours**: 11.5% (EMT: 22.7%)
- **Up to 20 hours**: 15.4% (EMT: 17.6%)
- **None**: 17.6% (EMT: 31.1%)

The diagram shows the distribution of CPC hours recorded in the previous 12-month period by EMTs, paramedics, and APs.
Figure 4 Amount of annual hours of CPC deemed appropriate by EMTs, paramedics and APs

- **81-100 hours**
  - Paramedic/AP: 9.2%
  - EMT: 11.60%

- **61-80 hours**
  - Paramedic/AP: 12.1%
  - EMT: 10.50%

- **41-60 hours**
  - Paramedic/AP: 26.4%
  - EMT: 23.50%

- **21-40 hours**
  - Paramedic/AP: 35.0%
  - EMT: 34.40%

- **20 hours**
  - Paramedic/AP: 17.3%
  - EMT: 19.80%
Consultation regarding specific models of Continuous Professional Competence

Overall, the majority of EMT (88%) and paramedics/AP (77%) respondents favoured the introduction of CPC by the regulatory body using a ‘mixed’ model approach of combining ‘mandatory’ and ‘voluntary’ activities, with 84% of EMTs and 77% of paramedics/APs supportive of minimum standard requirements that include evidence of Patient Care Report (PCR) completion, clinical practice guidelines (CPGs) compliance and patient management.

Most respondents considered practical type learning relevant to their roles (Table 2 Relevance of potential CPC activities and Figure 6: Comparison of activities deemed relevant by EMTs, paramedic & APs): practical training scenarios, EMT 83%(266), paramedic/advanced paramedic 94% (582); annual cardiac first response revalidation: EMT 97% (311), paramedics/APs 85% (517); access to e-learning followed by related practice EMT 91% (291), paramedics/APs 92% (566); and training on simulation manikins EMT 93% (297), paramedics/APs 88% (535). Ninety five per cent of EMTs (306) surveyed would value the opportunity to complete duties with paramedics and advanced paramedics.

The activities that received the highest ‘not relevant’ response (Figure 5) were: ‘e-learning modules only and no related practice EMT 32% (101), paramedics/APs 36% (210); project work EMT16% (50), paramedics/APs 27% (166); appraisal of journal publications EMT 20% (62), paramedics/APs 24% (147); and for EMTs only, First Aid competitions 25% (78).
Figure 5: ‘Not Relevant’ activities

Activities determined 'not relevant'

- e-learning modules only and no related practice: 32% EMT, 36% Paramedic/AP
- Project work: 16% EMT, 27% Paramedic/AP
- Appraisal of journal publications: 20% EMT, 24% Paramedic/AP
- Case Study review: 6% EMT, 19% Paramedic/AP
- First Aid Competitions: 25%
In addition to the practical-type, hands-on activities preferred for CPC maintenance, EMTs, paramedics and APs also considered the following activities very relevant or relevant in maintaining Continuous Professional Competence: access to medical journals/books EMT 83% (266), paramedics/APs 88% (538/615); attending courses accredited by the Regulator EMT 96% (307), paramedics/APs 84% (518/614); evidence of current CPG compliance (EMTs were not asked this question) paramedics/APs 80% (489); mentoring others (EMTs were not asked this question) EMT 87% (277), paramedics/APs 79% (483); major incident/emergency exercises EMT 93% (297), paramedics/APs 78% (480/612); regular practical assessments EMT 79% (253), paramedics/APs 75% (458); working in a related hospital department (EMTs were not asked this question) paramedics/APs 74% (453); keeping a portfolio of CPC activities EMT 90% (288), paramedics/APs 73% (441); attending relevant conferences EMT 78% (246), paramedics/APs 66% (405); lecturing/teaching EMT 86% (276), paramedics/APs 65% (403); appraisal with a senior Training Officer EMT 78% (248), paramedics/APs 61% (373); being a tutor EMT 79% (251), paramedics/APs 57% (349); appraisal with a doctor/medical supervisor EMT 66% (207), paramedics/APs 51% (309); being an examiner EMT 69% (222), paramedics/APs 51% (309); case study review EMT 64% (204), paramedics/APs 46% (283).
<table>
<thead>
<tr>
<th>Relevant Responses</th>
<th>Not Relevant Responses</th>
<th>Total Responses For Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant = Very Relevant/Relevant</td>
<td>Not Relevant = Not Relevant/very Irrelevant</td>
<td>P/AP</td>
</tr>
<tr>
<td>% of Total</td>
<td>% of Total</td>
<td>% of Total</td>
</tr>
<tr>
<td>P/AP</td>
<td>EMT</td>
<td>P/AP</td>
</tr>
<tr>
<td>% of Total</td>
<td>% of Total</td>
<td>% of Total</td>
</tr>
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<td>Practical training scenarios</td>
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<td>94%</td>
</tr>
<tr>
<td>Going on duty with paramedics or APs</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Annual Cardiac re-certification</td>
<td>566</td>
<td>92%</td>
</tr>
<tr>
<td>Access to e-learning followed by related practice</td>
<td>555</td>
<td>90%</td>
</tr>
<tr>
<td>Access to medical journals/medical books</td>
<td>538</td>
<td>88%</td>
</tr>
<tr>
<td>Training on a simulation manikin</td>
<td>535</td>
<td>88%</td>
</tr>
<tr>
<td>Attending courses accredited by PHECC</td>
<td>518</td>
<td>84%</td>
</tr>
<tr>
<td>Annual Cardiac First Response revalidation</td>
<td>517</td>
<td>85%</td>
</tr>
<tr>
<td>Evidence of current CPG compliance</td>
<td>489</td>
<td>80%</td>
</tr>
<tr>
<td>Mentoring others</td>
<td>483</td>
<td>79%</td>
</tr>
<tr>
<td>Major Incident/Emergency exercises</td>
<td>480</td>
<td>78%</td>
</tr>
<tr>
<td>Regular practical assessments</td>
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<td>Working in a related hospital department</td>
<td>453</td>
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<tr>
<td>Keeping a portfolio of CPC activities</td>
<td>441</td>
<td>73%</td>
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<tr>
<td>Relevant Conferences e.g RESUS</td>
<td>405</td>
<td>66%</td>
</tr>
<tr>
<td>Lecturing/teaching</td>
<td>403</td>
<td>65%</td>
</tr>
<tr>
<td>Appraisal with senior Training Officer (or above)</td>
<td>373</td>
<td>61%</td>
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<tr>
<td>Being a Tutor</td>
<td>349</td>
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<td>Appraisal with a Doctor/medical supervisor</td>
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<td>Being an examiner</td>
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<td>Case Study review</td>
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<tr>
<td>Project work</td>
<td>223</td>
<td>37%</td>
</tr>
<tr>
<td>e-learning modules only and no related practice</td>
<td>203</td>
<td>33%</td>
</tr>
<tr>
<td>First Aid Competitions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Appraisal of journal publications</td>
<td>188</td>
<td>31%</td>
</tr>
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</table>
Agreement with relevance of CPC activity comparison

- Going on duty with paramedics or APs: 95%
- Practical training scenarios: EMT 83%, Paramedic/AP 94%
- Annual Cardiac re-certification: 92%
- Access to e-learning followed by related practice: EMT 91%, Paramedic/AP 90%
- Training on a simulation manikin: EMT 93%, Paramedic/AP 88%
- Access to medical journals/medical books: EMT 83%, Paramedic/AP 88%
- Annual Cardiac First Response revalidation: EMT 97%, Paramedic/AP 85%
- Attending courses accredited by PHECC: EMT 96%, Paramedic/AP 84%
- Evidence of current CPG compliance: 80%
- Mentoring others: EMT 87%, Paramedic/AP 79%
- Major Incident/Emergency exercises: EMT 93%, Paramedic/AP 78%
- Regular practical assessments: EMT 79%, Paramedic/AP 75%
- Working in a related hospital department: 74%
- Keeping a portfolio of CPC activities: EMT 73%, Paramedic/AP 90%
- Relevant Conferences e.g RESUS: EMT 66%, Paramedic/AP 86%
- Lecturing/teaching: EMT 65%, Paramedic/AP 86%
- Appraisal with senior Training Officer: EMT 61%, Paramedic/AP 78%
- Being a Tutor: EMT 57%, Paramedic/AP 79%
- Being an examiner: EMT 69%, Paramedic/AP 66%
- Appraisal with a Doctor/medical supervisor: EMT 51%, Paramedic/AP 66%
Discussion

While some literature reports the development of ambulance CPD programmes internationally [7, 9] and while CPD is more likely to lead to a change in practice when a needs assessment has been conducted [18], literature that reports consultation with practitioners prior to the introduction of such programmes is limited. This first study of attitudes towards professional competence among EMTs, paramedics and APs in Ireland suggests a genuine enthusiasm for the introduction of CPC, with all groups indicating that CPC was of personal importance to them. Also there is evidence from their responses that all groups believe in the need for CPC and the link with registration and that the majority of these practitioners are already maintaining CPC portfolios (Figure 3).

This first national study utilised a ‘holistic’ approach and enabled the comparison of data from all three registrant groups: EMTs, paramedics and advanced paramedics. Although there were three different cohorts within the respondent groups responses were broadly similar in that most registrants preferred practical skills. Practical training scenarios were favoured by the paramedic/AP groups (94%) and also by the EMT respondents (83%). Training on simulation manikins also featured strongly as a preferred activity with paramedics/APs supporting this (88%) and 93% of EMTs. Access to ‘e-learning followed by related practice’ was the third highest common preferred activity (paramedics/APs 90% and EMTs 91%). In contrast to the most preferred activities the least favoured activities also demonstrated similarity in response. The paramedic/APs deemed ‘e-learning modules only and no related practice’ as the least relevant activity (36%) as did the EMTs (32%).

Respondents from the three groups of registrant favoured a mixed model approach to include: blended learning, practical skills and evidence of patient contacts.
Conversely the groups also preferred less of an emphasis on e-learning alone, project work and appraisals of journals articles.

**Demographics**

The majority of responses were from males and from registrants within the National Ambulance Service (NAS). This is unsurprising as the ambulance services in Ireland are provided, predominately, by the National Ambulance Service (NAS). In addition to the NAS, Dublin Fire Brigade provides ambulance services through twelve ambulance vehicles based throughout Dublin City. Both services are male dominated and employ Paramedics and advanced paramedics with few EMTs in either service. The NAS have, since 2012, commenced recruiting EMTs into the ambulance service but these are few in number currently standing at approximately one hundred (i.e. 7% of the workforce approximately). Most EMTs are members of the Voluntary Organizations: Order of Malta, Civil Defence, Red Cross, St. John Ambulance and are registered with the Regulator. There was a 30% response from female EMTs compared to a 15% response from paramedics/APs. While it could be argued these EMTs are not full-time professionals, they are committed volunteers on a national regulatory and professional register and do perform duties at large events.

**CPC Activities**

This study identified a number of useful topics and activities that could be considered for the purpose of CPC, and has identified some areas of low CPC priority for registrants.

Our study included over 20 potential CPC activities (Table 2) and asked which activities participants believed were relevant/ irrelevant. Practical hands-on training
using simulation manikins, team-based activities or e-learning followed by practical skills were preferred over non-practical /theory-type activities. Also, there were less negative responses regarding activities related to practical skills than to theoretical skills. A study with Irish APs reinforced the concept of practical-type learning as a preferred methodology and as an effective way of maintaining competence [6] and indeed scenario-based simulations have been used since 2007 as part of routine continuing education programs by some American emergency medical services [9]. Interactive methods, for the purposes of CPD, such as team-based learning and case-based learning, as compared to lectures, impart sustainable knowledge and lead to high satisfaction among participants [19]. For example, Davis et al [20] in their systematic review found that interactive and mixed educational sessions were associated with a significant effect on physicians’ performance, effected change in professional practice and, on occasion, healthcare outcomes. The least relevant activities, identified by both the EMT and paramedic/AP groups (Figure 5) were associated with non-skills/practical, individually-based, passive activities: e-learning modules only and no related practice was the highest ‘non-relevant’ response from both groups (32% (101) of EMTs and 36% (210) of paramedics/APs believed this to be the case). Other activities regarded as less relevant were: project work EMTs 16% (50), paramedics/APs 27% (166) appraisal of journal publications EMTs 20% (62), paramedics/APs 24% (147). This is quite different to results seen from other professions who have tended to prefer attending conferences, lectures and reading of relevant journals [14, 21] even though there is little evidence to suggest that attending conferences had any direct impact on improving professional practice [22]. Studies on cardiac nurses and dieticians [14, 23] have shown that journal reading was a popular preference and yet, for doctors, the effectiveness of continuous medical
education (CME) increases as the intervention strategy becomes more active, while activities classed as passive are associated less with changes in physician performance or patient outcome [22].

**Model of CPC**

Groups were split in relation to opinion on annual hours of CPC that should be required; both cohorts responded similarly, and with the highest response rate to this section, stating that 21-40 hours were adequate (see Figure 4). The majority of both cohorts surveyed favoured a ‘mixed’ model approach for CPC with a similar amount (EMT 84%; paramedic/AP 77%) supporting the idea of minimum standard requirements which involved evidence of patient care. This ‘mixed’ model approach would allow for a ‘compulsory’ element to the CPC requirements and an additional ‘voluntary’ allowance that is still required but would allow the registrant some flexibility in deciding which activities to choose.

The benefit of mandatory CPD in healthcare professions has been debated. O’Connor’s [24] study on motivating factors for nurses participating in continuing education (CPD) suggested that the mandatory nature of the education had little influence in motivating participation, while Lee et al [25] found that 66% of Australian radiographers thought CPD should be voluntary. Friedman and Woodhead [26] suggested that those professional bodies utilising compulsory or mixed policies with respect to CPD were likely to be promoting CPD as a means of maintaining competence.

Regarding sanctions, 78% (273) of EMTs and 61% (487) of paramedics/APs agreed that the practitioner should not be allowed to re-register at their current level if they failed to meet the CPC requirements. This finding is higher than from some other healthcare professions: 42% of pharmacists surveyed [27] favoured sanctions yet few
dieticians favoured disciplinary action for those who failed to meet the registration requirements [23].

**Limitations**

While this first study of attitudes towards CPC among EMTs, paramedics and APs in Ireland involved a national sample, we acknowledge some methodological considerations may limit generalisability. We report data from 1188 responses a relatively large number that compares well with other reported surveys [28-31], representing 43% of all registered EMTs and 43% of all registered paramedics and advanced paramedics. In addition, it is important to note that the response rate from the advanced paramedic cohort represented 82% of those registered. Our study was limited to those with valid email addresses and clearly those for whom the subject area was a priority. Further research following the introduction of CPC for all three levels of Irish registered pre-hospital practitioners, EMTs, paramedics and APs may expand upon these findings.

**Conclusion**

There is a paucity of research conducted with registered pre-hospital practitioners in Ireland. This survey is the first to ascertain the opinions of EMTs, paramedics and APs regarding CPC. While there is evidence of the need for pre-hospital practitioners maintaining competence in other ambulance services internationally e.g. Australia, UK and Canada their guidelines are less prescriptive, In the UK, for example, the Health and Care Professions Council the Regulator for paramedics, state in their guidance document that ‘there is no automatic link between [evidence of] CPD and your competence’ as this is not directly linked to the legislation which established this body (the Health and Social Work Professions Order 2001). Also, although all their
registrants must maintain ‘a continuous up-to-date and accurate record of their CPD activities’ this need is linked to a set of professional competencies associated with the profession and are less specific. This too is the case in Australia [32] and Canada where they use their standards of competence to encourage CPD in a non-specific and generic manner across practitioner levels: ‘Participate in continuing education and professional development; develop personal plans for continuing professional development; describe common quality assurance and enhancement processes’ [33]. This study further suggests that there is willingness on behalf of Irish EMTs, paramedics and APs to engage with CPC, which is viewed as extremely important. Respondents considered it appropriate to link CPC with registration to practice and that there should be sanctions against those who do not meet CPC requirements. The results of this survey demonstrate, at the very least, that emphasis will need to be placed on a compulsory ‘mixed’ model approach of CPC. This mixed model approach would include evidence of patient contact. Indeed this varied model of CPC is also encouraged by the UK Health and Care Professions Regulator who require registrants to ‘demonstrate that their activities are a mixture of learning activities relevant to current or future practice’ and although there is no explicit link to patient contacts guidelines suggest the use of critical reviews and case studies which could imply patient contacts [34].

The mixed model of CPC includes activities that are practically orientated: practical training scenarios; annual cardiac recertification; e-learning followed by related practice; training on simulation manikins. Conversely, there is less interest in non-skills/practical, individual passive learning activities: e-learning alone and no related practice; project work, journal reviews. Somewhere between twenty to sixty hours of CPC activities per annum would appear to be acceptable to Irish practitioners. EMTs
are extremely keen to engage with CPC reflected in the activities part of the survey with over one third of their relevant responses recording at least 90% support.
Competing Interests
The authors declare that they have no competing interests.

Author’s contributions
SK conceived of the study and was involved in the design, collection of data, data analysis, drafting the manuscript. WC and CD (principal investigator) were involved in the conception of the study, data analysis and interpretation and drafting the manuscript. All authors read, reviewed the manuscript critically for intellectual content, and approved the final manuscript.

Acknowledgements
The authors thank the registered Emergency Medical Technicians, Paramedics and Advanced Paramedics who responded to the questionnaire. Thanks also to Dr Helen Purtill of the Statistical Consulting Unit, University of Limerick for her comments on the design and results of the survey.

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References


32. Australasian Competency Standards
   [http://www.paramedics.org/content/2011/10/PA_Australasian-Competency-Standards-for-paramedics_July-20111.pdf]

33. National occupational competency profile for paramedics

34. Continuing Professional Development and Your Registration
   [http://www.hpc-uk.org/assets/documents/10001314CPD_and_your_registration.pdf]
Chapter 7

World Café-mediated contribution of pre-hospital practitioners in Ireland to the first official national guidance regarding continuous professional competence.
Chapter 7: World Café-mediated contribution of pre-hospital practitioners in Ireland to the first official national guidance regarding continuous professional competence.

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Abstract

Background: In Ireland, the Regulatory body for pre-hospital practitioners, the Pre-Hospital Emergency Care Council (PHECC), determined, like elsewhere, a need to develop and implement a continuous professional competence (CPC) framework. Prior to its introduction, in 2013, there was no regulatory requirement for practitioners to provide evidence of competence, or any link between competence and registration to practice. Having been charged with drafting a guidance document for practitioners relating to the planned CPC framework, in May 2012, the authors initiated World Café engagements with practitioners to determine views regarding the utility of the draft guidance, emphasising the need for unambiguous and understandable design and content of the advisory document which was to be published for Emergency Medical Technicians (EMTs) in November 2013.

Methodology: World Cafés were hosted, regionally, with sixty-three participants from the three practitioner levels (31 EMTs, 22 paramedics, 10 advanced paramedics). A draft guidance document [1] was developed after the completion of a national consultation process though an electronic survey, with EMTs. This guidance document contained various sections and sub-sections of proposed CPC activities. Topics were selected by using these section titles with a view to seeking further feedback and subsequent refinement of the proposals for CPC. These topics were then discussed relating to this guidance document for EMTs: a) what was absent from it and how it could be revised in a later iteration to cater for the needs of more advanced practitioners; b) perceived challenges regarding provision of evidence of patient contact/clinical cases for CPC purposes; c) clarity regarding related/elective activities or education courses and how their eligibility for CPC purposes could be determined;
d) the purpose and function of learning portfolios with respect to CPC. Qualitative analyses were performed using NVivo (version 10).

**Results:** Participants identified lack of clarity in the guidance document regarding: the role of their host organisations in supporting CPC-related activities; the relative value of differing CPC activities and how such evaluation was arrived at; definition of what constitutes patient contact. Suggestions were made that the Regulator provides templates for the reporting of reflective practice, case studies and mentorship training. Further queries arose relating to audit of CPC documentation and submitted learning portfolios; accreditation of elective education courses; and the role of the Regulator with respect to registration to practice and the potential consequences of not fulfilling CPC requirements.

**Conclusion:**
This is the first qualitative study involving registered pre-hospital practitioners in Ireland to review Continuous Professional Competence requirements. The study identified repetitive themes that, for the most part, require further information and clarification from the Regulator. Participants suggested that the Regulator should communicate with registrants regarding CPC activities, the audit process and the validation process for CPC credits. Participants also suggested that templates for case studies, reflective practice and learning portfolios be made available. Given that all participants believed that CPC was a good idea and that maintenance of such positivity is advisable the Regulator had the opportunity, prior to the publication of the EMT CPC guidance document, to address these identified practitioner concerns and thus introduce an improved system of CPC. However as these suggested changes, although having been brought to Regulators attention, were not incorporated into the
guidance document before it was issued formally, it may lead to negative feedback from practitioners after the introduction of mandatory CPC. Had the Regulator engaged further or taken action on this practitioner feedback this could have led to the introduction of an improved CPC initiative for this group of registrants and provide the basis for a robust system of CPC for the proposed subsequent groups of paramedics and advanced paramedics.
Introduction

In Ireland, there are three levels of registration for practitioners of pre-hospital care: emergency medical technician (EMT), paramedic and advanced paramedic. In November 2013, the Regulator for pre-hospital (ambulance) practitioners in Ireland, the Pre-Hospital Emergency Care Council (PHECC), introduced a framework of Continuous Professional Development (CPD)/Continuous Professional Competence (CPC) for the first time in Ireland. The Regulator adopted CPC as the preferred term used to describe ongoing education and development for pre-hospital practitioners. Surveys were conducted to elicit feedback from practitioners to determine their preferences and, thus, contribute towards the development of a CPC framework. Following these surveys, a draft CPC guidance booklet was prepared and used as a discussion document for focus groups.

While there are reports regarding CPD programmes for pre-hospital practitioners internationally, which include the review and maintenance of competence, there is limited evidence of specific engagement with pre-hospital practitioners regarding the introduction of CPD guidelines [2, 3]. However, there are descriptions of consultation with registrants in other health care professions and determining of their opinions in relation to continuous professional development; e.g. nurses [4-7], social workers [8], pharmacists [9] and radiographers [10, 11].

The World Café, or ‘community conversations’, process was the methodology selected for use with the focus groups. These community conversations, based on the ‘World Café’ process developed by Brown and Isaacs [12], are structured, inclusive conversations that are designed to bring together stakeholders to engage in meaningful conversation, share their knowledge and ideas and discuss solutions to complex problems [13]. The World Café methodology as initially proposed was influenced by...
collaborative and participatory research methodologies [14, 15] and builds on Wenger’s studies regarding communities of practice [16]. This model has been used successfully by others in health related research [17-20].

Using this technique, we aimed to elicit information regarding the utility of the draft guidance document that would inform a revised, improved version of CPC guidelines for distribution to EMTs in Ireland, which subsequently occurred in November 2013 [1], or, in a modified format, for paramedics/advanced paramedics.
Methodology

Setting

Three venues were selected in the East, West and South of the Country (Dublin, Galway and Tipperary). A request for participants was issued through registrant organisations (National Ambulance Service; Civil Defence, Order of Malta; Irish Red Cross, Defence Forces; Private Ambulance Services; St. John ambulance brigade, Dublin Fire Brigade) and participants were recruited on a first-come-first-served basis, with no bias towards any registrant level or organisation. A total of 31 EMTs, 22 paramedics and 10 advanced paramedics from the various organisations attended (Figure 1) at the three sites (Figure 2). The design and conducting of the study were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland. All participants consented to their inclusion in the research study. Informed consent was recorded before commencement of the exercise.
DFB: Dublin Fire Brigade; Garda: Irish Police Service;

Lifeline & Medicall: private ambulance services; NAS: National Ambulance Service; OMAC: Order of Malta Ambulance Corps.
Figure 2: Registrant level/organisation per venue

Registrant / Organisation per venue

A total of 63 participants attended over the three venues: Galway 19; Dublin 29; Tipperary 15.

**Garda**: Irish Police Service; **NAS**: National Ambulance Service;
The World Cafés

Participants were split into four groups, and seated at four separate tables. Participants were provided with a copy of the draft guidance document to read, and four separate “conversations” were held simultaneously, with each group discussing a separate focus question (Table 1). The questions were constructed in order to further probe and elicit any concerns or suggestions identified by participants and were based on each section/heading within the draft guidance document. This is an adaptation of the ‘World Café’ [12, 21] method, in that a separate question was asked at each table, to allow for maximum gathering of information in a two-hour facilitated session.

Each round of conversation was twenty (20) minutes in length, after which participants moved onto the next table in the sequence. The information provided by the participants remained at each of the specific tables, such that it was added to by each subsequent round of conversation. In all, every participant took part in each of the four conversation topics over the course of the facilitated focus group session.

Participants recorded their answers as the sessions progressed. Thoughts, questions, comments, or any other information generated as part of the conversation were recorded on paper tablecloths provided at each table. Finally, participants were asked one separate question on an individual basis: is CPC a good idea?

Analysis of data

Using an inductive process [22, 23], the information generated from each of the tables was open coded for themes and the results were analysed using NVivo (version 10). These were not attributed to gender or to specific individuals. Two researchers completed the analysis (SD and SK) to allow for investigator verification of results.
The first stage of coding was performed to identify any obvious codes/themes emerging from the data. The information was reviewed again to determine whether any new themes emerged. Finally, codes were re-examined to determine if they were distinct or if any code could be combined with any other previously identified code.

Results

Each discussion topic is described in Table 1. Responses provided by the participants are detailed below, and are presented in the context of each of the individual questions posed. (Selected responses are presented in Table 2).

Questions at table 1: What is missing from the draft EMT CPC document?

The CPC EMT guidance booklet outlines the requirement for EMTs to provide evidence of at least twelve patient contacts and, therefore, the topic of ‘patient contacts’ was discussed by each of the groups. The definition of what constitutes a ‘patient contact’ was problematic and received most comments from all groups, in particular they wished for clarification on what is meant by patient contact and what interventions, if any, are deemed acceptable. The availability of front-line ambulance placements was also discussed in this context, suggesting that such placements could facilitate additional patient contacts. Another key point arising from these discussions related to the consequences of someone failing to meet CPC requirements: ‘could you lose your licence to practice, downgrade to another level or place the individual on a period of probation?’

Participants suggested that the role of their organisation in relation to CPC required
clarification. They requested that the Regulator define what was the requirement of the organisation with regard to oversight and facilitation of CPC for their employees or volunteers. Participants also asked about mentorship: who mentors, what is classified as mentoring and wondered if there was a need for a specific mentorship programme? Finally, participants believed that the Regulator should provide case study and reflective practice templates to assist registrants in developing and presenting these specific required activities.

Questions at table 2: What is missing from the document; what problems do you foresee in completing CPC and what is unclear about the related activities section of the draft CPC booklet for EMTs?

Once again the issue of ‘patient contacts’ figured strongly. Other points discussed included: the requirement for additional guidelines for case studies and reflective practice; how the Regulator will perform an audit of portfolios; the availability of financial support and protected time to complete CPC; how does one suspend or pause registration; clarification on what is meant by ‘mentoring’ - how points are allocated for this and whether there is a need for a mentoring programme; how hours for CPC are accredited and by whom.

These concerns were also reiterated at other tables, perhaps emphasising their significance.
Questions at table 3: What is unclear about the related activities/ self-selected options - With reference to the related activities section describing what CPC courses or activities may be classed as additional options within the EMT CPC document (Table 1).

The most prominent topic discussed related to audit. Participants queried who reviews/audits registrant portfolios and case studies; who will review journal articles; who will audit patient care reports; who will validate CPC courses and who shall ensure CPC compliance? The allocation of CPC points, in their opinion, was unclear: how are they allocated and how are they awarded for conferences etc.

Questions at table 4: With reference to the learning portfolio section, describing the purpose and function of a learning portfolio within the proposed EMT CPC document:

What is your understanding of what a "learning portfolio" is?

Participants appeared to have an accurate understanding of both the purpose and benefits of maintaining a learning portfolio. There appeared to be general consensus about the benefits of maintaining a personal learning portfolio. Participants agreed that the learning portfolio was a document containing relevant learning experiences, certificates and evidence of progression and that if it was maintained appropriately, it could also identify what was missing and what was required. However, participants also agreed that the Regulator should provide examples of learning portfolios; they should include targets and objectives within the portfolio; perhaps change the title of the portfolio and include a timeframe.
Questions from the group relating to portfolios included: will they be reviewed and if so by whom and what would be the frequency of these inspections; who should have access to your portfolio (the employer/voluntary organisation) in addition to the Regulator and if the maintenance of a portfolio was mandatory?

Finally, some participants were concerned about the time and effort required to maintain a portfolio and stated that this would be time-consuming.

In summary, the collective feedback from the groups comprised:

**Participants required clarity regarding:** the role of the organisation; how CPC points can be determined and awarded by whom; specifically defining what is meant by ‘patient contact’; whether mentoring should be optional; whether points can be awarded for assisting but not being the lead practitioner when managing a patient; what level of clinical interventions are acceptable; e-learning credits; seminar/conference credits; reflective practice and case study formats.

**Participants included proposals for:** the introductions of a case study template; reflective practice template; mentorship training; arrangements for voluntary organisation members to go on front-line ambulances as a ‘third person’; credit for on-line/e-learning; credit for checking/verifying ambulance equipment.

**Participants queried who will?:** regulate CPC; review and audit CPC; regulate hours for CPC; mentor; review case studies; validate courses; review journal articles; ensure compliance; review Patient Care Reports (PCRs); judges standard; review the portfolios.

**Participants suggested that the Regulator should:** penalize non-compliance; cooperate with all organisations; review the portfolios; provide samples and templates of reflective practice and case studies; describe reflective practice; provide examples
of portfolios

Participants queried what happens if: registrants fail to meet the requirements; registrants do not achieve the required amounts of patient contacts; leave, re-enter, or pause their registration periods. Finally, in response to the question posed: do you think CPC is a good idea? All sixty-three participants responded with ‘yes’.
Discussion

Whilst there is evidence of engagement with paramedics and EMTs through focus group participation in other jurisdictions; for example, evaluating the benefit of using DVD simulation with a focus on inter-professional education to reduce costs and the burden of clinical placements [24-27] there is a paucity of similar studies conducted in Ireland either using focus groups generally or the ‘World Café’ method specifically.

The methodology utilised in this study allowed for thorough engagement and collation of data from a varied and diverse group of practitioners. This engagement represented a necessary review of the perceived guidance for CPC as determined through the initial survey of all registrants [28]. Specifically, this study was designed to aid identification of any potential issues prior to the introduction of the CPC model and to begin the process of modifying the guidance for the remaining levels: paramedics and advanced paramedics.

This study was therefore an essential second stage of the implementation process and it identified a considerable amount of both concerns and suggestions on how to improve the model. The unanimous response from the study was that every participant expressed a positive attitude towards the introduction of CPC. Other studies have demonstrated a similar positive attitude towards mandatory CPD in other related fields of healthcare [5, 9, 29]. However, an example of disquiet in this area was seen when Maltese radiographers, while generally supportive of the introduction of CPD, were concerned about the mandatory aspect [10]. In contrast, Irish EMTs were supportive of CPC as a key part of their professional development and registration with the Regulator: 86% of EMTs surveyed stated that CPC was extremely important to them and 95% stating that registration with the Regulator was of personal importance to them [28].
Indeed, it is acknowledged that for meaningful Continuing Medical Education it should be transformed from a system of episodic interventions to a more contextual, flexible and targeted process within a continuing professional development framework [30] and that CPD activities need to be experienced as being both meaningful and relevant in order to have impact [31]. However, before such concepts themselves are embraced the framework for CPC must be adequate to allow the practitioner to participate and account for their CPC in a meaningful manner. If the key fundamental activities of CPD/CPC is to be encouraged, that of self assessment and reflection [31, 32] then there is a need to address the areas highlighted, on reflection, by participants as being ambiguous or problematic and thus remove any perceived impediments to the introduction of this new CPC initiative.

Following from this study, it was evident that the drafted guidance document was lacking in some areas with regard to: clarity, defining patient contacts and provision of templates etc. Therefore, in order to facilitate CPC, it would be prudent to make amendments to the document based on this consultation. Failing to make such changes may result in a future requirement to develop initiatives to mitigate the identified and perceived issues, for example: National workshops/interactive informational events for clarification of predetermined queries; a ‘media and events’ section on a webpage similar to the UK Healthcare Regulatory Body, the HCPC [33]; on-line information targeted specifically in response to issues raised; on-line templates made available for use by participants; development of a team within the Regulator to deal specifically with CPC enquiries, assessments, validation of CPC activities, audits and dissemination of CPC information and requirements. The Regulator declined to consider these data generated by the groups prior to the formal introduction of the EMT guidance document. This failure by the Regulator to address the identified issues may, at the very least, discourage participation and at worst, ruin the initiative.
However, to date, feedback from these groups has not been considered by the Regulator and while this was the case before the introduction of CPC for EMTs the Regulator now has the opportunity to consider these issues prior to the proposed introduction of CPC to paramedics and advanced paramedics.

**Conclusion**

This is the first qualitative study involving registered pre-hospital practitioners in Ireland to review Continuous Professional Competence requirements and has provided some suggestions for improvements, and identified areas within the guidance booklet which need further clarification. While the sample size is small (63), there was a national, organisational and multi-registrant spread. The study clearly identified repetitive themes; clarity of process, monitoring of CPC, governance of the process, consequences of non-compliance, the need for templates etc. It appeared prudent to recommend that these issues be addressed before the introduction of mandatory CPC for the targeted EMT group, planned for November 2013, and subsequently for the paramedic and advanced paramedic registrant levels. The Regulator failed to take account of registrant feedback and suggestions which could have improved the CPC process by including accepted changes in the EMT guidance document before formal publication. The Regulator should ideally make the process of participating in CPC as unambiguous as possible as the benefit of all-registrant buy-in could benefit patients as the relationship between participating in CPC activities and competence can be linked to improved performance as a practitioner [34-36].

Further research following the introduction of the CPC model could expand upon these findings and refine the model into a more tractable process. Finally, it is
important to note that every participant believed that CPC was a good idea. Therefore, maintenance of this positivity is advisable, requiring correction of issues identified and improvement of the framework both for the first group of registrants to use it (EMTs) and the proposed subsequent groups of paramedics and advanced paramedics.
References


7. Trinchero E, Brunetto Y, Borgonovi E: *Examining the antecedents of engaged nurses in Italy: Perceived Organisational Support (POS); satisfaction with training and development; discretionary power.* *Journal of nursing management* 2013, 21:805-816.


33. Health and Care Professions Council UK 2014: Media and Events. [http://www.hpc-uk.org/mediaandevents/]


APPENDIX 1

Table 1 Topics for discussion by focus groups

Table 2: Samples of participant responses
Table 1 Topics for discussion by focus groups

<table>
<thead>
<tr>
<th>Table Number</th>
<th>Conversation Focus Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>With reference to the entire proposed EMT CPC document:</td>
</tr>
<tr>
<td></td>
<td>a) What is it missing?</td>
</tr>
<tr>
<td></td>
<td>b) What should be added to it to make it appropriate for Paramedic/Advanced Paramedic CPC?</td>
</tr>
<tr>
<td>2</td>
<td>With reference to:</td>
</tr>
<tr>
<td></td>
<td>Section 1 the ‘Statement of Context’ which states that you must include a statement explaining the context in which you collect evidence and record experience as a practicing EMT.</td>
</tr>
<tr>
<td></td>
<td>And Section 2 which describes how you must complete and show evidence of compulsory CPC, within the proposed EMT CPC document:</td>
</tr>
<tr>
<td></td>
<td>a) What is it missing?</td>
</tr>
<tr>
<td></td>
<td>b) What problems do you foresee in completing this CPC?</td>
</tr>
<tr>
<td></td>
<td>c) How do you feel about doing this CPC?</td>
</tr>
</tbody>
</table>
### (Section 2)

<table>
<thead>
<tr>
<th>Requirements</th>
<th>CPC Points</th>
<th>Extra Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac First Response (CPR)</td>
<td>2</td>
<td>CPR yearly refresher</td>
</tr>
<tr>
<td>Mentor/Mentee And/or Lecturer/tutor/instructor</td>
<td>4</td>
<td>Mentoring a student or being mentored on any experiential/operational ambulance, response vehicle placement</td>
</tr>
<tr>
<td>Reflective practice And/or Case Studies</td>
<td>4</td>
<td>A document containing key learning points (2 CPC points per documented evidence) Case Study on an incident/condition or injury you encountered (2 CPC points per case study)</td>
</tr>
<tr>
<td>Self-selected options from: Courses/seminars/related activities</td>
<td>8</td>
<td>Must demonstrate a direct relevance to the EMT standards and/or practice</td>
</tr>
</tbody>
</table>
With reference to the related activities section describing what CPC courses or activities may be classed as additional options within the EMT CPC document:

What is unclear about the related activities/ self-selected options?

<table>
<thead>
<tr>
<th>Activity</th>
<th>CPC points</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC related training programme provided by training organisations or</td>
<td>1 point for each hour</td>
<td>Certificate</td>
</tr>
<tr>
<td>programmes accredited by other professional organisations (for example,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An Bord Altranais (nursing regulator), Irish College of General</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practitioners (ICGP) and so on)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case study</td>
<td>2 points</td>
<td>Case study on an incident, condition or injury you have</td>
</tr>
<tr>
<td>Reflection on the incident</td>
<td>2 points</td>
<td>encountered</td>
</tr>
<tr>
<td>Seminars and conferences</td>
<td>1 point for each hour</td>
<td>Details of the seminar you have been to with a review of the</td>
</tr>
<tr>
<td>Programmes such as ACLS, PALS, PHTLS, PEPP, ATC, MIMMs, ITLS,</td>
<td>1 point for each hour</td>
<td>key points you have learned</td>
</tr>
<tr>
<td>Wilderness-EMT, ATLS, AMLS and so on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal article review</td>
<td>2 points</td>
<td>Critical appraisal of a journal article</td>
</tr>
<tr>
<td>Electronic learning/on-line learning – related to practice</td>
<td>1 point for each hour</td>
<td>Printed certificate from site</td>
</tr>
</tbody>
</table>
Mentoring a student or being mentored on any experiential/operational ambulance, response vehicle placement. | 1 point for each hour | Documented evidence of placement, signed by a paramedic or advanced paramedic

4

With reference to the learning portfolio section, describing the purpose and function of a learning portfolio within the proposed EMT CPC document:

What is your understanding of what a "learning portfolio" is?
### Table 2: Samples of participant responses

<table>
<thead>
<tr>
<th>With reference to the entire CPC document, what is missing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Can points be logged on an electronic database; you keep hard copy of cert, 'E' portfolio</td>
</tr>
<tr>
<td>• Define 'patient contact' Acuity of patient. Is it an emergency intervention? plaster v's cardiac arrest? Do both get 1 point? Appropriate interventions, patient contact in your place of work, off-duty assisting?</td>
</tr>
<tr>
<td>• Case study Template</td>
</tr>
<tr>
<td>• What is 'mandatory' exactly - 18hrs on-line versus 18hrs treating pt's?</td>
</tr>
<tr>
<td>• Should you get CPC points for participation in research?</td>
</tr>
<tr>
<td>• Organisation should assist with points facility</td>
</tr>
<tr>
<td>• What are the consequences if you don't meet requirements? Loss of licence? Downgrade? Probation?</td>
</tr>
<tr>
<td>• Checking/verifying ambulance equipment should be included</td>
</tr>
<tr>
<td>• Exercises - local, national extracurricular activity</td>
</tr>
<tr>
<td>• Patient contact - ambulatory report</td>
</tr>
<tr>
<td>• Consequences if a person does not meet the requirements</td>
</tr>
</tbody>
</table>
**With reference to EMT CPC document** Section 1 the ‘Statement of Context’ which states that you must include a statement explaining the context in which you collect evidence and record experience as a practicing EMT and Section 2 which describes how you must complete and show evidence of compulsory CPC *a) What is missing*

<table>
<thead>
<tr>
<th>What is missing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Who awards CPC points?</td>
<td></td>
</tr>
<tr>
<td>Who regulates how many hours?</td>
<td></td>
</tr>
<tr>
<td>Availability of placements</td>
<td></td>
</tr>
<tr>
<td>More options to complete CPC</td>
<td></td>
</tr>
<tr>
<td>Review of current skills/knowledge</td>
<td></td>
</tr>
<tr>
<td>Accountability for on-line learning</td>
<td></td>
</tr>
<tr>
<td>Guidelines for Case study/Reflection</td>
<td></td>
</tr>
<tr>
<td>Procedures for ensuring ambulance placements</td>
<td></td>
</tr>
<tr>
<td>Driving skills/guidelines CPC</td>
<td></td>
</tr>
<tr>
<td>Appeal Method?</td>
<td></td>
</tr>
<tr>
<td>Why CPC? Why do it at all?</td>
<td></td>
</tr>
<tr>
<td>Can you carry points over?</td>
<td></td>
</tr>
<tr>
<td>Structure and explanation of the difference between case study and reflective practice</td>
<td></td>
</tr>
<tr>
<td>Case study - physical study, and reflective practice - how can I do it better?</td>
<td></td>
</tr>
<tr>
<td>Medication changes and CPG changes should have an online update, which would be standard for everyone</td>
<td></td>
</tr>
<tr>
<td>Examples of framework should be provided</td>
<td></td>
</tr>
<tr>
<td>Patient contact - what exactly is required ie. Pcr, ACR, transport, incident no?</td>
<td></td>
</tr>
<tr>
<td>Clarification on what the term 'patient contact' means</td>
<td></td>
</tr>
</tbody>
</table>
### b) What problems do you foresee in completing this CPC

<table>
<thead>
<tr>
<th>Problems</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can't see this being done by people on their own time, outside of work</td>
<td>Time were practice is not main employment (voluntary versus Professional)</td>
</tr>
<tr>
<td>Evidence of patient contact</td>
<td>Financial (attend, pay for courses)</td>
</tr>
<tr>
<td>Mentoring should not be compulsory</td>
<td>On-line training points</td>
</tr>
<tr>
<td>How or when is the portfolio reviewed by PHECC - all practitioners?</td>
<td>Case studies?</td>
</tr>
<tr>
<td>Is onus on organisation/employer, practitioner to guarantee CPC compliance?</td>
<td>Non-compliance from long-term staff?</td>
</tr>
<tr>
<td>Bluffing, copying, people doing courses to get points, courses not suitable to them e.g. ACLS</td>
<td>HR issues relating to doing CPC</td>
</tr>
<tr>
<td>People volunteer to do duties/training may be harder to get volunteers</td>
<td>Buy-in at levels - motivation needed</td>
</tr>
<tr>
<td></td>
<td>Lot of Admin for Voluntary Agencies, greater time at paperwork</td>
</tr>
</tbody>
</table>
c) *How do you feel about doing this CPC*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No problem doing CPC</strong></td>
<td><strong>It will assist in the training needs analysis</strong></td>
</tr>
<tr>
<td><strong>Ensure skill maintenance</strong></td>
<td><strong>It’s a must!</strong></td>
</tr>
<tr>
<td><strong>Important we can do as we're meant to do</strong></td>
<td><strong>It’s a necessary evil</strong></td>
</tr>
<tr>
<td><strong>Necessary to maintain skills needed</strong></td>
<td><strong>Needed for all grades</strong></td>
</tr>
<tr>
<td><strong>Maybe too much in it</strong></td>
<td><strong>Filter out people who have little/no interest</strong></td>
</tr>
<tr>
<td><strong>Positive and achievable</strong></td>
<td><strong>May eliminate 'dangerous' people</strong></td>
</tr>
<tr>
<td><strong>Rewarding in the long run.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Prove/evidence of the work carried out by the voluntary groups</strong></td>
<td></td>
</tr>
</tbody>
</table>
3) With reference to the related activities section describing what CPC courses or activities may be classed as additional options within the EMT CPC document: *What is unclear about the related activities/self selected options?*

| Some case studies could be 2 lines while others can be 2 pages | Courses need to be vetted, ability to get certificates |
| Will case studies be evaluated? Will there be a template for a case study? | Seminars; how do you confirm hours, people can sign-up, register and leave? |
| Who gets case studies and is there feedback? | PCR; pt. Contacts, needs to be audited reviewed by a level higher or tutor |
| Seminars on your own time or an allowance to attend? | Reflection on incident, what qualifies as an incident? |
| Journal what? | Should being a mentor get points? |
| One point for each hour is it too much | Who oversees training at local level to verify accreditation for CPC? |
| ACLS, PHTLS etc is hard work, one point good start | Points to be reviewed for programmes eg. ACLS 16 points? |
| Points escalate depending on course | |
4) What is your understanding of what a "learning portfolio" is?

- To keep a record of your skills??
- Evidence of what you have learned
- Evidence of keeping knowledge up to date
- Shows evidence of progression??
- Identify training need??
- Non-clinical is equally as imp as clinical. Re: personal development which can enhance career
- Journal of what you have done
- Should be standardised and dynamic
- Complete record of what you do inside and outside work area

- Do you need to do this every year or is it an ongoing process which follows you if you move up the levels EMT, paramedic, advanced paramedic.
- Standard format
- Time to do and develop your portfolio
- Feel good factor on completing your portfolio - something to be proud of
- Is there a notification and lead in time for a portfolio to be viewed
- Can the portfolio be used in FTP or an in-service enquiry
- Sample portfolio for each level required
Chapter 8

Continuous Professional Competence for emergency medical technicians (EMTs)
Guidance Booklet

Published by the

Pre-hospital Emergency Care Council

November 2013

Research
CPC for EMTs Guidance Booklet (published November 2013)

Context

This is the Guidance Booklet produced as a result of the work in Chapters 4 following a wide consultation process involving both quantitative and qualitative methodologies. The process commenced through engagement with emergency medical technicians at a national conference, followed by an extensive on-line survey (chapter 4) resulting in the construction of a working draft document and then finally a guidance booklet.

This guidance booklet was published in November 2013 and it represents a tangible and practical outcome from this thesis work. This booklet has been widely praised and well received. Practitioners use it as a reference for their annual CPC requirements and the publication will also be used as a foundation for the anticipated introduction of CPC for paramedics and advanced paramedics. This guidance booklet is also provided in its complete published from in the Appendix section of this thesis.
Continuous Professional Competence

A guide for Emergency Medical Technicians registered with the Pre-Hospital Emergency Care Council

November 2013
**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACR</td>
<td>Ambulatory care report</td>
</tr>
<tr>
<td>CPC</td>
<td>Continuous professional competence</td>
</tr>
<tr>
<td>CPG</td>
<td>Clinical practice guidelines</td>
</tr>
<tr>
<td>DFB</td>
<td>Dublin Fire Brigade</td>
</tr>
<tr>
<td>EMT</td>
<td>Emergency Medical Technician</td>
</tr>
<tr>
<td>NAS</td>
<td>National Ambulance Service</td>
</tr>
<tr>
<td>NQEMT</td>
<td>National Qualification in Emergency Medical Technology</td>
</tr>
<tr>
<td>PCR</td>
<td>Patient care report</td>
</tr>
<tr>
<td>RI</td>
<td>Recognised institution (an organisation we have accredited to provide training)</td>
</tr>
<tr>
<td>PHECC</td>
<td>Pre-Hospital Emergency Care Council</td>
</tr>
</tbody>
</table>
About this document

The Pre-Hospital Emergency Care Council (PHECC), has provided this document for Emergency Medical Technicians registered with it.

Throughout this document:

- ‘we’ refers to the Pre-Hospital Emergency Care Council;
- ‘you’ refers to an Emergency Medical Technician on our register
- ‘registered practitioners’ also refers to Emergency Medical Technicians registered with us

People who might find this document useful:

- a registrant who wants to learn about CPC
- a PHECC-recognised institution or CPG approved organisation
- an employer thinking about CPC and how they might help an EMT with CPC
- a person or organisation thinking about offering CPC activities to registrants
Acknowledgements

Project Leader: Mr Shane Knox, Post-Graduate Student, Graduate Entry Medical School, University of Limerick, Ireland.

Editor: Professor Colum Dunne, Director of Research, Graduate Entry Medical School, University of Limerick, Ireland.
Introduction to Continuous Professional Competence (CPC)

Pre-hospital emergency care services in Ireland have developed in line with international best practice over the last few years. The introduction of clinical practice guidelines, associated medications that can now be administered by registered practitioners, and the establishment of a register of pre-hospital practitioners are just some of the initiatives that have helped to advance the role of the practitioner and the profession, both nationally and internationally.

Regulated health professions, including the pharmaceutical, medical and nursing professions, have already developed, or are in the process of developing, systems of Continuous Professional Development (CPD). We need to maintain this impetus and further enhance pre-hospital practitioner development if the profession is to develop in line with other healthcare professions.

One explanation of the purpose of Continuous Professional Development, as described by the Health Professions Council of South Africa, is:

“...to assist health professionals to maintain and acquire new and updated levels of knowledge, skills and ethical attitudes that will be of measurable benefit in professional practice and to enhance and promote professional integrity. The beneficiary will ultimately be the patient/client” [1].

There are many (probably too many) definitions and related terms associated with CPD. Some of these terms, such as continuous medical education (CME), which relates to medicine, are specific to a profession. To prevent possible confusion and to focus...
specifically on continuous improvement, we have adopted the term ‘continuous professional competence (CPC)’. This term is also used in the PHECC Education and Training Standards.

Guided by the principle of ‘beneficence’ regulated healthcare professions recognise the need to update and develop the knowledge, skills and attitudes that support professional, competent practice through continuous professional competence. This protects the public interest, meets the requirements of the Register and promotes the profession.

**The Pre-Hospital Emergency Care Council and CPC**

In November 2010, we began a new project to develop and put into place a system of continuous professional competence for all our registered pre-hospital practitioners.

Our initial aim will be to put into place a system of CPC to address current requirements for registration with us. This will ensure that there is consistency between all registered practitioners, and will provide a platform that we can expand across the country. Anecdotal evidence from other countries suggests that although CPC has

*...to provide net medical benefit to patients with minimal harm - that is, beneficence with non-maleficence. To achieve these moral objectives health care workers are committed to a wide range of prima facie obligations... Hence we need rigorous and effective education and training both before and during our professional lives*. [2]
appeared in response to the need for regulation, it has paid less attention to the job-specific requirements for professionals in whatever their field of practice. Because of this, and as a first step, we have used an electronic survey to allow all registered EMT practitioners to influence the setting up of an Irish system for pre-hospital continuous professional competence (CPC).

We have consulted with EMT representative groups across the country requesting feedback on the CPC model. Focus groups, made up of registered practitioners, have been an important part of the process. We have encouraged registered practitioners at every level to take part in and influence the project through the consultation process.

Developing an appropriate CPC system specifically for pre-hospital professionals will benefit the public we protect, the patients you treat, and add significantly to the development of the profession itself.

*Remember, this is the first model of CPC for EMTs and it will be up to you, and others involved, to develop and change this initial model so that we end up with a robust CPC system that meets everyone’s needs.*

CPC ensures that there is a minimum national standard for registered EMTs who can provide quality care to patients.

Do not view the process of CPC as a difficult one. It is not designed to be. It really is about:

- Documenting the things you do regularly
- Encouraging you to reflect
- Recording and responding to CPC as a healthcare professional
Whether you are an employee or a volunteer you are a registered pre-hospital practitioner on a professional register and CPC is an important part of your registration.

**Responsibility: Emergency Medical Technicians**

Pre-hospital practitioners, like other regulated professions, have a responsibility to commit to their own personal and professional development. Section 3.2 of our Code of Professional Conduct and Ethics says that a registrant will ‘participate in ongoing CPD (CPC) requirements of the relevant division of the Register’.

**November 2013 data collection starts for November 2014**, EMTs registered with PHECC will have to maintain an up to date learning portfolio of Continuous Professional Competence (CPC) that records CPC activities. This can simply be a folder in which to keep certificates or other evidence such as case reviews, important learning points, and so on. See page 13 for a description of CPC learning portfolios.

CPC points are based on the principle that one hour of CPC activities equal 1 CPC point. We do not want to limit the activities you take part in as part of your CPC requirements. Allowing you access to all relevant programmes or activities, at least at first, should encourage you and help you to meet your CPC requirements.

You must build up 18 CPC points a year (54 CPC points over a three-year period). This gives you some flexibility in developing your CPC. Ideally you will gain 18 CPC points each year. However, if personal reasons mean you cannot gain 18 CPC points in one year, the three-year period means you can still meet your CPC requirements by
making up for this in the other years. That said, it would be sensible to try to gain 18 points each year.

**Does CPC apply to all EMTs?** All EMTs must meet the same PHECC CPC requirements. Please contact your own organisation for specific administrative and organisational requirements.

**Reviews to make sure portfolios meet CPC requirements (compliance review):** You do not have to send us your portfolio for inspection, but we will review a random selection of EMT portfolios to make sure they meet CPC requirements. Each year, as part of our registration process, you will sign a declaration stating that you meet the CPC requirements and we will then issue your EMT licence. We intend to modify the current system so that every EMT will re-register in November of each year, commencing November 2014.

**Remember:** Even though you are registered as an EMT, to practise in Ireland as an EMT you must be a member or employee of a CPG approved organisation.

**EMTs, Service Providers and Organisations**

Developing staff or members through CPC will no doubt benefit an Organisation. The Organisation may facilitate the EMT by providing some CPC activities or by allocating time to participate in such activities. For example, Organisations

“CPD is a fundamental component that lies along the continuum of lifelong learning...and is invariably twinned with the strategic visions of health organisations and managers’ immediate needs”

[4]
may help you meet your CPC requirements by providing opportunities through courses, case reviews, mentoring and so on.

Some organisations may ask their members (or staff) to carry out extra activities – this is a matter for your Organisation. However, it is important to note that the **requirement to maintain registration is your responsibility**. To maintain registration – you will always **register directly with us**.

Any relevant training organisation can provide related programmes of learning that will automatically count as CPC points.

At the moment, training organisations do not need to send programmes to us for accreditation. We consider all programmes, developed and conducted with reference to a specific body of knowledge and/or clinical practice in an area of practitioner level care acceptable for CPC, with one hour counting as one point.

After you complete a programme provided by a training organisation they must issue you with a certificate for your portfolio or provide annual documented evidence.

**There are many training organisations who provide related training that would be relevant for CPC including PHECC Recognised Institutions (RIs). You can find a list of PHECC Recognised Institutions at:** [http://www.phecit.ie](http://www.phecit.ie)

However, remember that there are many more ways of gaining CPC points other than completing programmes! (See [page 10](#) for extra activities you can gain CPC points for).
Continuous Professional Competence Requirements

18 CPC points a year

The 18 CPC points a year (54 over a three-year period) are ideally accumulated over a 12-month period but a three-year span allows for you to compensate, in exceptional circumstances, should you have reason to do so. However, to maintain registration you must show evidence of how you gained your 18 CPC points per year or state why you were unable to meet the requirements.

CPC works using a system of points and is divided into two sections:

- **Section 1:** A statement of context

- **Section 2:** Compulsory requirements including self-selected options
**Section 1: A statement of Context**

The statement of context is an introductory statement explaining the context in which you collect evidence and record experience as a practicing EMT. You must include this statement of context as the first part of your learning portfolio.

This section must also include:

- Evidence of at least 12 patient contacts per year
- A signed declaration that you are committed to participating in all CPG updates and up-skilling courses as necessary
Section 2: Compulsory Requirements

All EMTs must complete and show evidence of compulsory CPC. This is broken down into the following parts.

Table 5: Compulsory Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>CPC points</th>
<th>Extra information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac First Response (CFR)</td>
<td>2</td>
<td>CFR Advanced Course (certification is valid for two years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CFR refresher (one year after initial certification)</td>
</tr>
<tr>
<td>Mentor/Mentee</td>
<td>And/or</td>
<td>Mentoring a student or being mentored on any experiential/operational ambulance, response vehicle placement</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Lecturer/Tutor/Instructor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective practice</td>
<td>And/or</td>
<td>A document containing key learning points (2 CPC points per documented evidence)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Case study on an incident, condition or injury you have encountered (2 CPC points per case study)</td>
</tr>
<tr>
<td>Self- selected options from: Courses/Seminars/Related Activities (See Page 10 for examples)</td>
<td>8</td>
<td>Must demonstrate a direct relevance to the EMT standards and/or practice</td>
</tr>
<tr>
<td>Total compulsory CPC points</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>
Examples of Courses and Related Activities (Additional Options)

You can gain the self-selected 8 CPC points for the ‘Courses, seminars and related activities section’ listed previously. A combination of some of the activities listed below will allow you to accumulate your required 8 CPC points. The choices listed are deliberately wide. This category allows you to take part in activities that are relevant to you personally and are specific to your own learning and development needs.

You must gain 8 CPC points from these self-selected options each year as part of the overall compulsory CPC requirements

Table 6 Additional Options CPC Points

<table>
<thead>
<tr>
<th>Activity</th>
<th>CPC points</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC related training programme provided by training organisations or programmes accredited by other professional organisations (for example, An Bord Altranais, Irish College of General Practitioners (ICGP) and so on)</td>
<td>1 point for each hour</td>
<td>Certificate</td>
</tr>
<tr>
<td>Case study</td>
<td>2 points</td>
<td>Case study on an incident, condition or injury you have encountered</td>
</tr>
<tr>
<td>Reflection on the incident</td>
<td>2 points</td>
<td>A document containing the main points you have learned</td>
</tr>
<tr>
<td>Seminars and conferences</td>
<td>1 point for each hour</td>
<td>Details of the seminar you have been to with a review of the key points you have learned</td>
</tr>
<tr>
<td>Programmes such as ACLS, PALS, PHTLS, PEPP, ATC, MIMMs, ITLS, Wilderness-EMT, ATLS, AMLS and so on</td>
<td>1 point for each hour</td>
<td>Certificate</td>
</tr>
<tr>
<td>Journal article review</td>
<td>2 points</td>
<td>Critical appraisal of an article</td>
</tr>
<tr>
<td>Electronic learning/on-line learning – related to practice</td>
<td>1 point for each hour</td>
<td>Printed certificate from site</td>
</tr>
<tr>
<td>Mentoring a student or being mentored on any experiential/operational ambulance, response vehicle placement.</td>
<td>1 point for each hour</td>
<td>Documented evidence of placement, signed by a paramedic or advanced paramedic</td>
</tr>
</tbody>
</table>
The list shows examples of some CPC activities. It allows you to build evidence of your CPC activities in-line with your own needs and preferred learning style.

We encourage you to take part in any relevant CPC programmes or activities. It is important that you keep all certificates for going to, or taking part in, CPC activities to help build your portfolio. You can then use this portfolio to support your own development plan and can use it as independent evidence of your CPC activities at a later stage.

**What is a Learning Portfolio?**

The learning portfolio is a tool to support practitioners to commit and engage in lifelong learning, long after the award of National Qualification in Emergency Medical Technology (NQEMT) and Registration have been achieved [5].

A professional development (learning) portfolio is a collection of material, made by a professional, that records, and reflects on, key events and processes in that professional’s career [6]. This means you should record, reflect on and keep evidence of any activities that relate to CPC. In doing this you will have evidence of your experience.

It is your responsibility to maintain your portfolio, and it is your property. In order to maximise the learning potential of portfolio development, the learner has to take responsibility for its creation, maintenance and appropriateness for purpose [7].
It is important to realise that there is no such thing as a standard portfolio. A portfolio can be either electronic or in hard copy. Portfolios are as diverse as their possible content and can be adapted for various purposes [8]. Your purpose in developing your portfolio is to record evidence of your learning experiences.

The portfolio allows you to use a range of learning styles depending on your preferences.

Here are some important things that are generally recorded in a portfolio.

- The experience – what has happened, what you have done, seen, written, and so on.

- The learning – the discovery that what you have recalled has significance for doing or changing things in the future.

- The evidence – where you show how you are applying what you have learned in an appropriate context.

- Learning needs – where you identify where it would be appropriate to go next.

- Learning opportunities – an educational action plan identifying ways in which you might meet your learning needs [9].

A portfolio is somewhere for you to start. You can collect certificates and material related to your profession. This is then linked to your learning experience by demonstrating reflection and documenting what you have learned or how you might do something better the next time, for example.
Reflection

Reflection appears to be the ‘engine’ that shifts surface learning to deep learning and transforms knowing in action into knowledge in action” [10]

Reflection allows us to transform current ideas and experiences into new knowledge and action [11]

The portfolio is not just about retaining copies of certificates, it is about showing evidence of learning and how you learned from various related activities. Learning that occurs in the context of the daily workplace (or while you are practicing as an EMT within your organisation) is far more likely to be relevant and reinforced, leading to better practice [12].

Portfolios are not a panacea, but they are a useful tool which can be used to plan and record learning and incorporate personal development plans to form the basis of appraisal or peer review ‘[13]  and, as such, should include evidence of reflection on patient management.

The most frequent stimulus for learning is reading the medical literature, followed by management of a current patient or problem [14].

For example, you could have managed a patient with a condition that you had not heard about. After reflecting on the incident you decide, as part of this review, to search for information on the condition. Your research should reveal, perhaps, what causes the condition, what type of patient it may present in, what are the signs and symptoms, medications used and management of the condition. Now that you understand what this condition is, at the very least, it will give you an idea on the typical presentation should you encounter the same condition again.
One suggested example of how you may reflect on your management of a patient is by asking:

- What went well – so that you know what might work well again?
- How did the patient respond to your management or interventions, in accordance with the CPGs?
- What would I like to change in relation to the management of this patient, but within my scope of practice?
- What was the patient’s chief complaint?
- Are there other conditions similar to this? If so, what are they?
- Can I review the ‘chief complaint’ by doing some research?

After answering these questions you should:

- List key learning points that demonstrate what you have learned from this patient encounter.
- Finally, document this in your portfolio. This is evidence of reflection.

Because you need to reflect on your practice, you should include examples that show how you have learned and improved your practice. A portfolio that seems to show that everything is perfect all the time might arouse suspicion: none of us can honestly say that everything we do works out perfectly. Instead, show how you have responded to problems that have presented themselves and evaluate how successful your response has been [15].

Professional competence is more than factual knowledge and the ability to solve problems with clear-cut solutions: it is defined by the ability to manage ambiguous problems, tolerate uncertainty, and make decisions with limited information [10].
Remember, *CPC is more than attending courses or conferences* and there is as much benefit to be gained by reflecting on patient encounters. If you can be self-critical and honestly identify what you might change, then you have learned. Now, simply document it and retain it in your Portfolio.

“To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all” [16]

**Patient privacy and confidentiality**

You must make sure that you maintain patient privacy and confidentiality. You cannot avoid referring to patients when even briefly recording incidents. However, you must not include any information that could identify patients or carers by their name, address, job title or in any other way. This would be breaking the law relating to confidentiality under data protection legislation [17,18] and would also be contrary to point five of our Code of Professional Conduct and Ethics – ‘Maintain Confidentiality’3. The best approach is to refer to a patient as either ‘a male’ or ‘a female’.
Summary: Key points

You and Registration

- CPC for EMTs commences in November 2013 when data collection starts for November 2014. It is your responsibility to ensure you comply with PHECC CPC requirements.

- The responsibility for registration is yours and the relationship for registration is between you and PHECC.

- Each year, as part of our registration process, you will sign a declaration stating that you meet the CPC requirements and we will then issue your EMT licence.

- You must maintain a learning portfolio and accumulate 18 points per year (54 CPC points in a 3-year cycle).

- Your learning portfolio must include:
  - A statement of context
  - Evidence of at least 12 patient contacts per year
  - A signed declaration that you are committed to participating in all CPG updates and up-skilling courses as necessary

  AND

  - Evidence of how you achieved your 18 Compulsory CPC points each year (see page 10)

  - Ensure patient privacy and confidentiality when recording information for CPC
Recognition of courses etc. for CPC

- Any training organisations can provide programmes of learning that will automatically count as CPC points

- Training organisations or course providers do not need to send programmes to us for accreditation

- Every programme provided for CPC by training organisations should provide a certificate for the EMT

- Any accredited related programme provided by other healthcare professions for the purposes of CPD may be considered as CPC points

“Professional competence is more than factual knowledge” [10]
References


15. Brigden D: **Constructing a learning portfolio.** *BMJ* 1999, **319**:S2a.


17. **Data Protection Act 1988.**

18. **Data Protection (Amendment) Act 2003.**
Chapter 9

A Qualitative Assessment of Practitioner Perspectives Post-Introduction of the First Continuous Professional Competence (CPC) Guidelines for Emergency Medical Technicians in Ireland

Re-submitted following revision

BMC Emergency Medicine January 2015

[Re-submitted following revision– BMC Emergency Medicine January 2015]

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Abstract

Background: In November 2013, the Irish Regulator for emergency medical technicians (EMTs) introduced the first mandatory requirement for registrants to demonstrate evidence of continuous professional development (CPD)/continuous professional competence (CPC). This qualitative study assessed the experience of practitioners with CPC-related materials provided to them by the Regulator in addition to identifying perceived or encountered practical challenges and suggested improvements 6 months following introduction of the requirement.

Methods: Five fora were utilised, comprising two distinct groupings: a group of student EMTs (n = 62) and four discrete groups of qualified EMTs (total n = 131) all of whom had commenced the newly-introduced CPC process. All 193 volunteers were members of the Civil Defence (an auxiliary/voluntary organisation) and represented a nationwide distribution of personnel. Responses were categorised as ‘perceived’ challenges to CPC, relating to student EMTs, and ‘experienced’ challenges to CPC, relating to qualified EMTs. Responses also included suggestions from both groups of EMTs on how to improve the current system and guidance material. Audio/visual recordings were made, transcribed and then analysed using NVivo (version 10). A coding framework was developed which identified unifying themes.

Results: All participants agreed that CPC for pre-hospital practitioners was a welcomed initiative believing that CPC activities would help ensure that EMTs maintain or enhance their skills and be better enabled to provide quality care to the patients they might encounter. Two specific areas were identified by both groups as being challenging: 1) the practicalities of completing CPC and 2) the governance and administration of the CPC process. Challenging practicalities included: ability of
voluntary EMTs to gain access to operational placements with paramedics and advanced paramedics; the ability to experience the number of patient contacts required and the definition of what constitutes a ‘patient contact’. With regard to the governance and administration of CPC, it was suggested that in order to enhance the process, the Regulator should provide: an outline of the CPC audit process; examples of cases studies and reflective practice; templates for portfolios; and should establish a central hub for CPC information.

**Conclusion:** These groups of Irish EMTs appeared keen to participate in continuous professional competence activities. In addition, these EMTs identified areas that, in their opinion, required clarification by the Regulator related to the practicalities of CPC and the governance and administration of CPC. More information, dissemination of sample requirements and further effective engagement with the Regulator could be used to refine the current CPC requirements for EMTs.

**Keywords:** Emergency Medical Technicians; continuous professional development; CPD; Continuous professional competence; CPC.
Introduction

In Ireland, there are three levels of registration for practitioners of pre-hospital care: emergency medical technician (EMT), paramedic and advanced paramedic. In November 2013, the Regulator for pre-hospital (ambulance) practitioners in Ireland, the Pre-Hospital Emergency Care Council (PHECC), introduced a framework of Continuous Professional Development (CPD)/Continuous Professional Competence (CPC) targeting EMTs for the first time in Ireland. In doing so the Regulator was acknowledging the fact that EMTs represent the largest cohort of pre-hospital practitioners in Ireland and that while their focus was initially placed on this grouping CPC requirements for the smaller but more advanced practitioners, paramedics and advanced paramedics, would be enacted in 2016. The Regulator adopted CPC as the preferred term used to describe ongoing education and development for pre-hospital practitioners. The guidance provided to practitioners, by the Regulator, regarding CPC requirements, resulted from surveys and fora conducted and published by our group [1, 2]. The issuing of this guidance booklet was to assist EMTs in determining what was required of them in order to maintain their status as registered practitioners.

As of April 2014, there were 2200 EMT practitioners registered in Ireland, a small number of whom were members of state services (police, military or coast guard) but the majority of whom were associated with the St. John Ambulance, Civil Defence, Order of Malta Ambulance Corps, Irish Red Cross voluntary organisations. In Ireland, in order to qualify as an EMT, candidates must complete a five-week didactic training programme with an additional one week hospital and ambulance observer placement. This study involved facilitated fora comprised of EMTs from one of these organisations, the Civil Defence. The objective was to identify the perceived and/or actual challenges to compliance with CPC requirements experienced by those students
or qualified EMTs, respectively, with a view towards such feedback informing the next iteration of Irish EMT CPC guidance.

There is evidence of CPD programmes for pre-hospital practitioners internationally which include the review and maintenance of competence. For example, in a study from Northern Norway, ambulance services described changes in terms of tasks performed and improving levels of competence [3] and, in Australia, the Council of Ambulance Authorities completed a project to develop paramedic professional competency standards [4]. In the United Kingdom, the Health Care Professions Council (HCPC), the Regulatory Body for healthcare professions, published guidelines for their many registered professions, including paramedics [5]. Martin [6] described the challenges of introducing CPD for paramedics in the UK which included: the need for paramedics to develop the intrinsic motivation required to assess their learning needs; their ability to respond accordingly; and the challenge for ambulance managers to facilitate opportunities for CPD. The Paramedic Association of Canada produced a national occupational competency profile for paramedics [7].

There is also evidence of consultation with registrants in other health care professions and determining of their opinions in relation to continuous professional development; e.g., nurses [8-11], social workers [12], pharmacists [13] and radiographers [14, 15]. However, there is no evidence of such engagement with Irish pre-hospital practitioners on this subject except for our studies [2, 16, 17] and while there is evidence of guidelines on CPD internationally [18] and some evidence of engagement with healthcare professionals through professional liaison groups established by healthcare Regulators [19, 20] there is little evidence of specific engagement with pre-hospital practitioners prior to the introduction of CPD guidelines [21, 22].

This study aimed to provide information that would inform a revised, improved version of CPC guidelines for EMTs in Ireland in addition to being of interest to
others internationally involved in designing or implementing CPD activities for healthcare professionals, especially pre-hospital practitioners.

**Methods**

**Setting**

In April/May 2014, approximately six months after the first introduction of CPC for EMTs practising in Ireland, one group of EMTs in training (n=62) and four groups of qualified EMTs (total n=131) were invited to participate in one of five facilitated fora. The aim of this study was to identify perceived or encountered practical challenges and suggested improvements for the next iteration of CPC guidance for EMTs. Fora were utilised to allow feedback to predetermined open-questions. Fora, a form of group consultation with larger numbers than usually involved in focus groups, are designed to enable a facilitated discussion on specific topics, whereby participants were enabled to share and contribute to a wider discussion through a process of guided facilitation [23]. Such discussions have advantages for researchers in the field of health and medicine such that they encourage participation by people reluctant to be interviewed on their own or who feel they have nothing to say. As a result, fora and focus groups explicitly use group interaction as part of the method [24].

All participants had been asked, prior to the fora, to familiarise themselves with the CPC Guideline Booklet [1]. The design and conducting of the study were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland. All participants consented to their inclusion in the research study.
The 62 EMT students constituted one group and convened on the first day. The other EMT groups (n=131) convened over four separate days and consisted of: 20 participants on day one; 28 participants on day two; 40 participants on day three and 43 participants on day four.

The EMT student group comprised forty females and twenty-two males with a large regional spread. The experienced group comprised fifty females and eighty-one males, also with a diverse regional spread. Broadly, there was nationwide representation with participation from twenty counties out of the national twenty-six counties over the five days.

There were a total of 273 registered EMTs within the Civil Defence at the time of convening the fora. Participants in this study represented 100% of the student EMTs within the Civil Defence, and 48% of the total registered EMTs within the organisation, at that time.

**Development of Study Instrument**

The composition of the study instrument was based on a survey used with fora of pre-hospital practitioners prior to development of the original CPC guidelines [1, 2].

The study instrument: questions asked of participants:

1. Is CPC a good idea?
2. What problems do you foresee in completing CPC?
3. What is unclear about the related activities section in the CPC booklet for EMTs?
4. Learning Portfolio: what is your understanding of what a learning portfolio is?
The fora

Each discussion forum lasted for approximately forty minutes and was facilitated by the Civil Defence College Principal (a trained facilitator), who is unconnected with this research. An introduction to the subject was provided by the facilitator and guidelines issued with regard to interaction and the objectives of the discussion forum. With the knowledge of the participants, the discussions were recorded on video. Questions were posed by the facilitator and reinforced using a multimedia presentation, whereby the question remained on the screen for all to see until that particular topic was concluded and agreement reached with the group to move on to the next question.

Data analysis

All comments made by participants were transcribed from the recordings. These were not attributed to gender or to specific individuals. Using NVivo (version 10), participants’ responses from all the groups were initially coded to nodes defined by the four questions posed during the sessions (see Table 1 for coding framework). Two researchers completed the analysis (SD and SK) to allow for investigator verification of results. Transcripts were reviewed again to determine if any data were missed from the initial coding. Following this initial round of coding the data were further sub-classified within each of these codes into sub-codes of i) opinions, ii) questions, iii) suggestions and any other themes emerging. Further themes were identified, as stated in Table 1, which include ‘patient contact’, ‘duties’ and ‘practical challenges’.
Results

Responses provided by the participants are detailed below, and are presented in the context of each of the individual questions posed, as per the coding framework used for data analysis. Selected responses from cohorts are presented in Table 1

Question 1: Is CPC a good idea?

The recent introduction of compulsory continuous professional competence for Irish emergency medical technicians was unanimously accepted as a positive initiative by these five groups who indicated this by a show of hands.

Most answers to this question related to the benefits of EMTs maintaining competence and both cohorts demonstrated through their responses that this was at the core of the initiative: “it keeps you up-to-date”; “it is absolutely necessary, it is a good thing”.

Question 2: What problems do you foresee in completing CPC, and Question 3: what is unclear about the related activities section of the CPC booklet for EMTs?

(Supplementary information for Question 3 is presented in Table 2)

The need for describing what constitutes ‘patient contact’

The CPC EMT guidance booklet outlines the requirement for EMTs to show evidence of at least twelve patient contacts and, therefore, the topic of ‘patient contacts’ was brought up by the groups. Indeed, in discussing the challenges associated with completing CPC, it was noted that this topic generated the greatest level of participant engagement and level of enthusiasm. It was clear from the comments made that participants were expressing frustration with respect to pragmatic difficulties that they had encountered in trying to fulfil their CPC requirements.
Arising from this discussion, it was evident that both the experienced and student cohorts were seeking clarification on a number of topics. These related to: duties; number of patient contacts; and definition of what constitutes a ‘patient contact’.

**Duties and patient contacts**

The participants’ difficulties related primarily to their ability to experience and access frontline ambulance services and patient engagement; to experience diversity of patient types and scenarios; and to overcome limitations relating to the points above due to their geographic location (e.g., urban versus rural). As one participant stated: “we have 10 EMTs in our county, that’s 120 patients a year [we need to encounter], it just won’t happen”. To give further context, another EMT commented: “…we are getting plenty of duties, we are just not getting the patients, and so unless we start pushing people off horses or something, we are not going to get patients”. However, frontline ambulance placements alone were not seen to be the solution: “What if we go to events but don’t get any patient contacts?”, thus, highlighting the importance of not just accessing frontline ambulance experience but that such access must also be accompanied by the potential for more patient encounters.

Whilst the quantity of patient contacts required generated discussion and concern, so too did the type of patient contacts. In other words, what counts as a patient contact? One participant asked: “the evidence of at least 12 patient contacts per year is that just 12 plasters [band-aids/dressings] on 12 patients, what type of evidence do you need to show?” Another suggested that perhaps there should be “…more points for quality of care”.

One participant suggested that perhaps consideration should be given to allowing more CPC points for the more serious interventions performed or patient conditions
encountered: “what about scoring higher points if you have more serious casualties, as well as points for skills?”

This sub-division of ‘patient contact’ gave rise to significant discussion and emphasised the link between the requirement for patient contacts and the need to increase the exposure of EMTs to other statutory front-line ambulance services provided by paramedics and advanced paramedics.

The role and function of the Regulator

Clarification regarding the role and function of the Regulator was identified as a further theme. Both groups suggested a more active role for the Regulator was necessary in coordinating CPC activities: defining ‘patient contact’; information focal point i.e. one website or webpage dedicated to providing information on CPC events/activities; awarding credit to CPC activities; and the ability to update registrants on their CPC requirements.

The administration of CPC by the Regulator was also challenged. In addition to the need for a central information hub for CPC, some participants believed that the Regulator should coordinate and even validate courses and CPC activities, as this is not the case currently: “where are the courses…. how would you check that they are relevant, does the Regulator say they are relevant?”; “more clarification on CPC points, the Regulator should allocate points for conferences etc”; “do you see the Regulator organising ambulance placements for us?”. The booklet, according to one participant, “does not tell us where to go to complete CPC courses”.

EMTs are also required to provide evidence of case studies and reflective practice and so participants suggested that the Regulator should provide sample case studies; templates for case studies, reflective practice and learning portfolios. Participants agreed that templates should be provided: “on the case study [part of the
There should be key points or a template provided, for it and for reflective practice”; “examples of what should be in your portfolio would be good”.

Participants were keen for the Regulator to provide a clear outline of how their portfolios will be audited and by whom: “who signs off on our points?”; “how do you know if I haven’t made it up?”; “what is the mechanism for audit?”; “who will audit the whole process of CPC?”

**Question 4: Learning Portfolio: what is your understanding of what a learning portfolio is?**

As part of their CPC requirements, EMTs must now maintain a Learning Portfolio:

‘The learning portfolio is a tool to support practitioners to commit and engage in lifelong learning…’[1]

With respect to the Learning Portfolio, participants were predominantly positive. No group objected to using or maintaining a portfolio and linked the learning portfolio to its intended aim: documenting experiences of required CPC activities.

However, there were some uncertainties regarding the administration of portfolios. Specifically, who will audit portfolios, to whom are they submitted, and the lack of a standardised sample template to be followed. Further questions relating to the portfolio included: “how long do you need to keep your portfolio for?”; “where is the portfolio kept, is it on-line?”
Discussion

It was established that all five groups unequivocally support the introduction of CPC, however, there is a requirement to provide clarification in specific areas relating to the required CPC activities. From the fora, it can be determined that some of the most challenging or questionable areas relate to: the requirement to complete twelve patient encounters; what is classed as a patient encounter and how to achieve this. This, they suggest, could be facilitated if front-line ambulance placements were made available to them. However, ambulance placements by themselves may not be adequate unless the placements are in a busy area, in order to maximise the potential for varied and numerous patient contacts.

Patient contacts and on-the-job learning facilitated through front-line ambulance placements.

The facilitation of front-line ambulance placements could have many benefits, and not just related to more patient contacts. Placing EMTs with other professional colleagues would also provide the opportunity for additional experience and learning. There is value in such on-the-job learning, whilst there may be considerable difficulties in evaluating its effectiveness [25]. Regehr and Mylopoulos [26] suggest that education research emphasises the importance of context-based learning: if we shift our perspective from a focus on education to a focus on learning, we will be able to direct additional efforts at understanding how professional learning not only arise from practice, but actually occurs in practice and is informed by practice. These authors further suggest that apart from formal continuing educational delivery practitioners should learn from their own personal experiences of solving problems in their daily practice. Irish pre-hospital practitioners support the practical-based and operational
context of learning [2, 17] and international evidence also emphasises the importance of work-based learning [27-31].

It would seem reasonable to suggest that EMTs are in favour of more patient contacts, not only to fulfil their CPC regulatory requirements but also to increase their interaction as pre-hospital practitioners and, thus, gain further experience. This is supported by their responses: “it is very important for EMTs to get ambulance placements”; “Do you see PHECC [Regulator] organising placements for us with HSE [Health Authority] so that we can get experience to build up our patient contact?”

Their comments support the findings of previous studies, which demonstrated the preference of EMTs for participation in frontline ambulance duties with paramedics/advanced paramedics [2].

One of the major threats to patient safety in the pre-hospital environment is errors in decision-making and clinical judgement [32, 33]. Increasing their exposure to managing patients, through placements on frontline emergency ambulances or in an appropriately supervised relevant hospital department, would improve confidence and improve their ability in decision-making.

Linked to patient interaction is the ability to generate case studies and to encourage reflective practice as part of the CPC process. Therefore the more patient contacts the greater the opportunity to complete more case studies and encourage more reflective practice. This is supported by comments from our participants who questioned: “How do we get a case study, we need patient contacts and a case study may be difficult for us?”
The Learning Portfolio

The learning portfolio is a collection of material that reflects on key events and processes in a professional’s career [34]. By ensuring a learning portfolio is an integral part of the CPC process, the practitioner can not only demonstrate evidence of proficiency but also should be able to identify areas for improvement or for future enhancement. Self evaluation is an essential part of continuous development [35]; the competent practitioner pursues lifelong learning through the recognition of deficiencies and the formulation of appropriate learning goals. Hence, the ability to assess one’s strengths and weaknesses is critical to the enterprise of lifelong learning [36]. There is a requirement for reflection and maintaining a learning portfolio.

Reflection appears to be the ‘engine’ that shifts surface learning to deep learning [37] and transforms knowing in action into knowledge in action [38]. However, to encourage portfolio development, case study completion and reflective practice there is a need to address the current deficit of examples and information to maximise the proposed effect.

In our study, both cohorts appear to have a reasonable understanding of what a Learning Portfolio is and what it should be used for. However, again, they would like to see samples and clarification of what the Regulator would like to see them include in their learning portfolios.

The role and function of the Regulator – the Pre-Hospital Emergency Care Council (PHECC)

Participants believed that the Regulator could do more to assist with the effective implementation of CPC. This theme involved a substantial amount of interaction and response and detailed a considerable number of concerns. The areas of concern stated
most frequently related to the Regulator not providing clarification on specific areas of CPC activities; not supplying templates for case studies or reflective practice; not providing portfolio requirements or samples; not providing a facility that directs registrants to national CPC programmes; and not providing details about auditing of CPC portfolios.

It would not be unusual for a Regulator of a healthcare profession or professions to provide information on Continuous Professional Competence/Education/Development. Many Regulatory bodies have a dedicated department to manage queries, provide the detail of audit and to interact generally with registrants. The Health and Care Professions Council (UK) (HCPC) have considerable resources related to Continuous Professional Development (CPD): information documents; templates; CPD video guides; audit process video; constructing your CPD profile video; glossary of terms; CPD evidence examples; CPD activity examples; audit dates; Standards of CPD; and a section on Frequently Asked Questions [5]. However, the HCPC is a multi-healthcare professions regulator with sixteen professions and over 320,000 registrants and a much larger Regulator than the Irish Regulator. In Ireland, the Health and Social Care Professionals Council, has published a CPD Framework document as a template for each of their proposed registrant professional groups [39] but this does not include pre-hospital practitioners. Of note, guidance provided in their document contains information pertinent to CPD: templates; audit process; assessment outline; examples and supporting documentation. Furthermore, the Irish Medical Council, the body responsible for registering doctors, provides guidelines on the maintenance of professional competence and gives an outline of medical practitioners’ requirements to enrol in professional competence schemes accredited by the Medical Council [40].
Overall, there appears to be a consensus between both cohorts in our study that further clarification in the areas described above should be addressed by the Regulator (as done by the HCPC and Medical Council) to allow an effective model of CPC to be maintained and standardised amongst participating cohorts.

**Study Limitations**

As these were large fora comprising five groups with a total of 193 EMTs, this may have prevented everyone from participating in the discussions. Also, as the questions presented were pre-selected, these specific topics may have restricted other topics from further discussion. While the group was drawn from many regions, it was representative of only one EMT organisation, the Civil Defence, and while key areas were identified for further clarification or requiring additional information from the Regulator, the views are only that of one organisation’s members.

**Conclusion**

This is the first study to consult with pre-hospital practitioners in Ireland, after the introduction of a CPC model. It demonstrates the similarities between what student EMTs perceived as practical challenges to the introduction of CPC, as they had not actively encountered CPC at that time due to their student status, and the actual practical challenges encountered by the experienced EMT groups. The study identified no evident difference between the stated views of either cohort and, in fact, may emphasise the need for the Regulator to consider reviewing the current iteration of CPC requirements for EMTs. While the introduction of Continuous Professional Competence requirements for EMTs in Ireland is a positive step by the Regulator, and is welcomed by the EMTs in this study, there remains some work to be done to refine...
the process. EMTs are keen to meet the requirements but need the Regulator to provide more information, examples and further clarification. It would appear that EMTs are motivated and accept CPC but further guidance from the Regulator could maintain and support such an initiative. Further research with professional groups could guide the appropriate revisions of this CPC model to be suitable for all pre-hospital practitioners, including those not currently required to maintain CPC such as paramedics and advanced paramedics.

**Competing Interests**
The authors declare that they have no competing interests.

**Author’s contributions**
SK and SD conceived of the study and were involved in the design, collection of data, data analysis, drafting the manuscript. WC and CD were involved in the conception of the study, data analysis and interpretation and drafting the manuscript. All authors read, reviewed the manuscript critically for intellectual content, and approved the final manuscript.

**Acknowledgements**
The authors thank the Registered EMTs and Student EMTs from the Civil Defence who participated in the study. In addition we thank the Principal, Ms Roisin McGuire and staff of the Civil Defence College for assisting and providing facilities for the fora.
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CD: Chair & Director of Research, Graduate Entry Medical School, University of Limerick, Ireland.
References


11. Trinchero E, Brunetto Y, Borgonovi E: Examining the antecedents of engaged nurses in Italy: Perceived Organisational Support (POS); satisfaction with training and development; discretionary power. Jour Nurs Manag 2013, 21:805-816.


Table 1: Selection of responses to the four questions posed to both cohorts: Student EMTs and Experienced EMTs (Nodes coded to are in bold)

<table>
<thead>
<tr>
<th>Question 1: Is CPC a Good Idea?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student EMTs</strong></td>
</tr>
<tr>
<td>Yes because:</td>
</tr>
<tr>
<td>- “Because it keeps your mind ticking over you have to think about what you’re doing”</td>
</tr>
<tr>
<td>- “It keeps your skills up”</td>
</tr>
<tr>
<td>- “It is nearly a better thing for the voluntary organisations to do ‘cos we don’t get the same exposure”</td>
</tr>
<tr>
<td>- “Keeps the skills up, keeps you on your toes, good to keep a record”</td>
</tr>
<tr>
<td>- “It is absolutely necessary, it’s a good thing”</td>
</tr>
</tbody>
</table>

**Question:** “Is this model concrete or can it change?”

**Questions:**
- “Do you see PHECC [Regulator] organising placements for us with HSE [Health Authority] so that we can get experience to build up our patient contact”

**Suggestions:**
- “I think it’s a good idea but as an EMT we are part of an organisation and we do work for the CDOs (Civil Defence Officers) but it would be a good thing to bring them up and tell them what we have to do, cos sometimes they’d just say ‘well that’s your problem, not ours’.”
- “You could go to other counties to get events”
Question 2: What problems do you foresee in completing CPC?

<table>
<thead>
<tr>
<th>Points for clarification:</th>
<th>Experienced EMTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “What are we going to do if we go to events but don’t get any patient contacts?”</td>
<td>• “What are you looking recorded when you are recording patient contact; heart attack, what, what detail?”</td>
</tr>
<tr>
<td>• “If you go out and do loads of duties and no patient contact, if you keep a log … can that be counted?”</td>
<td>• “Is it from January to January”</td>
</tr>
<tr>
<td>• “Clarification required on mentoring, who does it, is it a non-instructor, can they mentor?”</td>
<td>• “Unsure what is expected from us”</td>
</tr>
<tr>
<td>• “There seems to be confusion with regard to when …we have to submit this. Every year or 18 months or every three years, this needs clarification”</td>
<td>• “What about stuff we did two years ago will PHECC [Regulator] count this?”</td>
</tr>
<tr>
<td>• “Who signs off on this? On our points?”</td>
<td>• “In relation to new EMTS are they still backdated from November 2013?”</td>
</tr>
<tr>
<td>• “In relation to our training, we do a lot of first aid classes and we refresh all our training – that should be counted?”</td>
<td>• “One of them here says that you have to have mentoring…you get a point for each hour, but it must be signed by a paramedic or advanced paramedic…but what if you haven’t got one?”</td>
</tr>
<tr>
<td>• “What is the mechanism for audit?”</td>
<td>Duties:</td>
</tr>
<tr>
<td>• “Should there be points for checking your ambulance equipment?”</td>
<td>• “If you are working as a community first responder…can you count that?”</td>
</tr>
<tr>
<td>• “We are not in the ambulance service, all that we can get is minor … but no casualties contact, should that not count?”</td>
<td>• “If we put down a couple of duties we have done do we document it?”</td>
</tr>
<tr>
<td>• “Where do we get information regarding the seminars, conferences and activities where do we get this information? Should be on the PHECC [the Regulator] website like their calendar for exams”</td>
<td>• “Does this apply to our private lives or in our work then if we get a patient… like I work in the county council and if I get called as a first aider so should we be filling out PCRs (Patient Care Reports)?”</td>
</tr>
<tr>
<td>• “Continuous placements, ambulance placements, it’s all well and good training, training, training but unless you actually see real patients, you know”</td>
<td>• “Time on duty is different in the voluntary services”</td>
</tr>
<tr>
<td>• “Are you allowed to get CPC points from other organisations, I am also a member of the RNLI [The Royal National Lifeboat”</td>
<td>Patient contacts:</td>
</tr>
<tr>
<td></td>
<td>• “At least 12 patient contacts per year, what’s the situation if you can’t get the 12 patient contacts?”</td>
</tr>
<tr>
<td></td>
<td>• “Is patient contact a completed PCR (patient care report) or”</td>
</tr>
</tbody>
</table>
Institution], are we allowed to use their courses?”

- “How much do we need to do, is it 2 pages of a case study or ten pages, or how many words should it be?”
- “How do we get a case study, we need patient contacts and a case study may be difficult for us?”
- “The evidence of at least 12 patient contacts per year, is that just like 12 plasters on 12 patients, what type of evidence do you need to show?”
- “It is very important for EMTs to get ambulance placements. “
- “Up-skilling [to new practice guidelines] if EMTs do refresher courses up-skilling will you get CPC recognition for that?”

ACR (ambulatory care report)?”

- “If you’re in the situation where you are off duty and the ambulance service arrive, can you ask them for that PCR (patient care report) number as evidence of your patient contact?”
- “With regard to patient contact, I haven’t been out as I had a baby, so is that over the years, the 12 patient contacts or just for one year?”
- “Is the evidence of the patient contacts just the PCR (patient care report)? I’ve had the experience of the ambulance service were they don’t take mine but start a new one”
- “If we are filling out pcrs, and the patients’ contact details are on it obviously should we be handing over the top copy to the paramedic, and we hold on to the second copy and you’re not in the Civil Defence you should cover your details…..?”
- “From a duty point of view It’s hard to get 12 patient contacts, we are not out often enough in reality we don’t attend so many patients in a year”
- “I’m out every weekend, but I won’t get 12 patients”
- “We’re trying to keep the thing going at home, we are getting plenty of duties, we’re just not getting patients, so unless we start pushing people off horses or something…we’re not going to get patients”
- “The 12 patient contacts per year, it’s too many”
- “Like, we have 10 EMTs in the county like, that’s 120 patients a year, it just won’t happen”

Templates:

- “If there was a template that you just wanted to record… it would be good to complete rather than try to store Patient Care Reports”
<table>
<thead>
<tr>
<th>Practical challenges:</th>
<th>Practical Challenges:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “There is a need for more clarity in the booklet for an alternative to patient contact”</td>
<td>• “You should not be allowed to get 8 points for the one activity, it is not stated clearly that these 8 points cannot be all for one activity.”</td>
</tr>
<tr>
<td>• “With regard to Cardiac First Response [or CPR] recertifying, we only refresh every two years. Do we have to do more? This needs clarification”</td>
<td>• “Templates for case studies etc. its kinda vague”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suggestions:</th>
<th>Suggestions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “It does not tell us where to go to get courses, it should tell us”</td>
<td>• “Examples of what should be in your portfolio, would be good”</td>
</tr>
<tr>
<td>• “More points for quality of care”</td>
<td></td>
</tr>
<tr>
<td>• “What about scoring higher points if you have more serious casualties, as well as points for skills should there be, say, points for medications and stuff; cardiac chest pain compared to a plaster?”</td>
<td></td>
</tr>
<tr>
<td>• “On the case study there should be key points or a template or for your reflective practice”</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Comment:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• “How do you know if I have made it up?”</td>
<td></td>
</tr>
<tr>
<td>• “People working in the HSE [Health Authority] have the advantage of meeting more patients”</td>
<td></td>
</tr>
<tr>
<td>• “I suppose it’s like the American system as well there is a difference between the volunteer EMTs and the professional EMTs (do you want a cert with Volunteer written on it?) What I’m saying is, we don’t spend our time out in ambulances, or in the back of ambulances we have other jobs, we don’t have the same chances…”</td>
<td></td>
</tr>
<tr>
<td>• “Who will audit the whole process of CPC?”</td>
<td></td>
</tr>
</tbody>
</table>
Question 3: What is unclear about the related activities section of the CPC booklet for EMTs
(supplementary information is included in Table 2)

<table>
<thead>
<tr>
<th>Student EMTs</th>
<th>Experienced EMTs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coordination of CPC information:</strong></td>
<td><strong>Coordination of CPC information:</strong></td>
</tr>
<tr>
<td>• “How will we know about seminars and conferences and the costs of those?”</td>
<td>• “Where are the courses out there, how would you check that they are relevant, does PHECC [Regulator] say they are relevant?”</td>
</tr>
<tr>
<td>• “There should be a central hub”</td>
<td></td>
</tr>
<tr>
<td>• “Should PHECC [the Regulator] not have these on their website?”</td>
<td></td>
</tr>
<tr>
<td><strong>Suggestions:</strong></td>
<td><strong>Suggestions:</strong></td>
</tr>
<tr>
<td>• “Perhaps other voluntaries could all come together across the country and have CPC days.”</td>
<td>• “EMTs mentoring or assisting on EMT courses should get CPC points”</td>
</tr>
<tr>
<td>• “There should be regional training centres for CPC – organisational”</td>
<td></td>
</tr>
<tr>
<td>• “Linking CPC points with your work, if you are a first aider in work and you have to treat someone in work should that count?”</td>
<td></td>
</tr>
<tr>
<td>• “We are charged quite a lot for voluntary members to do CPC, could we be subsidised to help us with the costs?”</td>
<td></td>
</tr>
<tr>
<td>• “Regional training days, you should utilise EMTs to instruct and teach and to gain CPC points”</td>
<td></td>
</tr>
<tr>
<td><strong>Clarification:</strong></td>
<td><strong>Clarification:</strong></td>
</tr>
<tr>
<td>• “What if you are involved in community responder schemes and can those casualties be counted as your patient contacts because it doesn’t say it in the book?”</td>
<td>• “It says the student must document evidence by a paramedic or AP, the likes of EMT who are assisting EFR and CFR the likes of that you are not going to get a paramedic or advanced paramedic to say you assisted, or does that not count is that relevant will you get credit for training/helping?”</td>
</tr>
<tr>
<td>• “If we were to participate with paramedic class exercises, major incidents exercises etc, could we get CPC points?”</td>
<td>• “And we start this from last November?”</td>
</tr>
<tr>
<td>“Maybe different points for seminars, if you are only there for a couple of hours or a few days, what counts?”</td>
<td>“So any training of any class counts, is that right?”</td>
</tr>
<tr>
<td>“Seminar CPC points should not be standard, more clarification on points PHECC [Regulator] should allocate points for conferences etc”</td>
<td>“So you don’t have to put points down, just all the stuff we do?”</td>
</tr>
<tr>
<td></td>
<td>“The emergency CPC online where does that fall on-line? How can you prove how many hours you’ve done on it? What’s there to say you could log on and do more?”</td>
</tr>
<tr>
<td></td>
<td>“Is there a limit to how many points you can get for an activity?”</td>
</tr>
<tr>
<td></td>
<td>“You have to get 8 points from related activities is it compulsory that we can’t get all of them together is it compulsory that it’s a mix?”</td>
</tr>
</tbody>
</table>

**Comment or unrelated question to the question:**

- “Have the organisation considered how many more EMTs they will be training or CPC days?”
- “The duty on its own is no use to you, if you don’t get patients”
<table>
<thead>
<tr>
<th>Question 4: Learning Portfolio: What is your understanding of what a learning portfolio is?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student EMTs</strong></td>
</tr>
<tr>
<td><strong>Definition of Portfolio:</strong></td>
</tr>
<tr>
<td>• “Put your certificates into it”</td>
</tr>
<tr>
<td>• “Something to show evidence of what you’re doing to maintain competence”</td>
</tr>
<tr>
<td>• “A folder which you keep to show evidence of practice”</td>
</tr>
<tr>
<td>• “A record of all that you do in the previous year”</td>
</tr>
<tr>
<td><strong>Clarification required:</strong></td>
</tr>
<tr>
<td>• “Who do you submit it to”</td>
</tr>
<tr>
<td>• “How long do you need to keep your portfolio for”</td>
</tr>
<tr>
<td>• “Where is the portfolio kept do you have to keep it or is it on line”</td>
</tr>
<tr>
<td>• “In regard to confidentiality and data protection what must we do”</td>
</tr>
<tr>
<td>• “If you were managing a patient on the street could the ambulance sign you off for managing the patient before they arrived?”</td>
</tr>
<tr>
<td><strong>Suggestions:</strong></td>
</tr>
<tr>
<td>• “If you had a template for the portfolio”</td>
</tr>
<tr>
<td>• “PHECC [Regulator] should have a web page with all the CPC information”</td>
</tr>
<tr>
<td>• “There should be a hub or webpage with all CPC information, conferences, templates, information”</td>
</tr>
<tr>
<td>• “there could be a phone app that would give you notifications about CPC activities that are on”</td>
</tr>
<tr>
<td>• “A Gmail calendar to notify you of events on your phone”</td>
</tr>
</tbody>
</table>
Table 2: Supplementary information for Question 3

<table>
<thead>
<tr>
<th>Activity</th>
<th>CPC points</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC related training programme provided by training organisations or</td>
<td>1 point for each hour</td>
<td>Certificate</td>
</tr>
<tr>
<td>programmes accredited by other professional organisations (for example,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An Bord Altranais (nursing regulator), Irish College of General</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practitioners (ICGP) and so on)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case study</td>
<td>2 points</td>
<td>Case study on an incident, condition or injury</td>
</tr>
<tr>
<td>Reflection on the incident</td>
<td>2 points</td>
<td>encountered</td>
</tr>
<tr>
<td>Seminars and conferences</td>
<td>1 point for each hour</td>
<td>A document containing the main points learned</td>
</tr>
<tr>
<td>Programmes such as ACLS, PALS, PHTLS, PEPP, ATC, MIMMs, ITLS, Wilderness-</td>
<td>1 point for each hour</td>
<td>Details of the seminar attended with a review of the</td>
</tr>
<tr>
<td>EMT, ATLS, AMLS and so on</td>
<td></td>
<td>key points learned</td>
</tr>
<tr>
<td>Journal article review</td>
<td>2 points</td>
<td>Critical appraisal of a journal article</td>
</tr>
<tr>
<td>Electronic learning/on-line learning – related to practice</td>
<td>1 point for each hour</td>
<td>Printed certificate from site</td>
</tr>
<tr>
<td>Mentoring a student or being mentored on any experiential/operational</td>
<td>1 point for each hour</td>
<td>Documented evidence of placement, signed by a</td>
</tr>
<tr>
<td>ambulance, response vehicle placement.</td>
<td></td>
<td>paramedic or advanced paramedic</td>
</tr>
</tbody>
</table>
Chapter 10

Thesis Summary Conclusion
Thesis summary conclusion

In summary, this thesis has elucidated, for the first in Ireland, the opinions and perceptions held by EMTs, paramedics and advanced paramedics towards Continuous Professional Competence. The Thesis takes a gradual approach to registrant engagement to elicit views, opinions and suggestions on how to ensure competent pre-hospital practitioners and the one common apparent theme is that the majority of registrants want CPC to be implemented, but want it to be implemented appropriately and effectively. Each chapter equates to types of engagement with registrants through various methodologies.

Chapter summaries

Chapter 1: The first chapter provides an outline of the thesis and a rationale behind the need for this study.

Chapter 2: This chapter provides a context for Continuous Professional Development/Competence and shows how it links with registration, regulation and professionalisation. The literature review gives a brief overview of CPD within the disciplines of nursing and physiotherapy and then describes regulation or more precisely, lack of regulation within the paramedic discipline internationally.

Chapter 3: Represents the first published paper associated with this PhD and involved engagement with one group of registrants: advanced paramedics. This study identified the preferred teaching and assessment methodology which could be used on future programmes of CPC for registrants and strongly supports the practical-based,
hands-on approach to learning. Thus consideration should be given to future teaching and assessment methodologies to include practical-type and small group learning.

**Chapter 4:** This chapter is the second published paper and is the first paper associated with a large cohort of PHECC registrants: emergency medical technicians (EMTs). This paper identified optimum educational outcomes, preferred CPC activities and attitudes of EMTs towards CPC. This paper, combined with later paramedics and advanced paramedics studies, informs the design of the very first iteration of the proposed CPC framework. The EMT participants strongly supported the concept of CPC and agreed with its implementation. Again, like the previous study with the APs, this study identified the preferred choice of CPC activity is one that is practical and scenario-based with 97% stating that this was most relevant to their role.

**Chapter 5:** This is the publication which surveyed paramedics and advanced paramedics on the same issues of CPC presented to the EMT cohort. Similarly these two registrant groups preferred practical training scenarios and like EMTs the majority favoured the introduction of CPC. The study shows how paramedics and APs are supportive of CPC linked with their professional development and registration. The study also shows how these groups support blended learning, evidence of patient contact and team-based practical learning as preferred CPC activities.

**Chapter 6:** This chapter represents a (submitted) paper incorporating all three levels of registrant: EMT; paramedic and advanced paramedic. This chapter supports and substantiates previous identified preferred CPC activities for all registrant levels and shows the combined similarities.
Chapter 7: This chapter represents the first qualitative methodology and utilises an entirely different approach to registrant engagement. The ‘world café’ mediated focus groups provided an excellent feedback and suggestion process for registrants to review the proposed CPC guidance document with the intention of revising this document before the formal introduction of CPC for EMTs. These participants sought clarification on various parts of the draft document and offered suggestions on how to improve the document generally and how to improve the process of CPC specifically. This methodology allowed participants to engage on a personal basis and provided real and informative participation. Unfortunately, after the conclusion of this process the Regulator failed to consider or implement any of the suggestions made by these groups and the final draft of the EMT guidance document was published in November 2013.

Chapter 8: This chapter represents the first iteration of CPC guidelines for the first group of registrants. It was published without the suggested changes identified by the ‘world café’ fora. This version comes as a direct consequence of the studies associated with this PhD and provides the necessary guidance for all registered EMTs in Ireland. This registrant group now represents the largest registrant group in Ireland (2446 registered EMTs representing 49% of the register, on 6th March 2015) and the first group compelled to demonstrate evidence of CPC linked to their professional registration.

Chapter 9: This chapter (re-submitted for publication following revision), relates to a review of the CPC requirements six months after CPC was introduced to EMTs. This study engaged 193 EMTs from one voluntary organisation to ascertain their opinions on how they were adopting to CPC and if they could suggest any changes to the
current system. This study identified a lot of the same issues previously, and prior to the introduction of the EMT CPC guidance document (chapter 8), identified by all practitioners in the world café for a (chapter 7). Therefore it supports the proposition that had the suggestions made by the groups been considered and implemented by the Regulator and included in the published CPC guidance booklet then a framework could have resulted.
Conclusion

This is the first time that studies involving greater than 1400 pre-hospital practitioners in Ireland (399 EMTs; 789 paramedics and APs; 63 pre-CPC introduction focus group; 193 post-CPC introduction focus groups) have been undertaken. In addition, this PhD represents the largest studies to date conducted with PHECC registrants on any subject area. The data gleaned from these registrants formed the basis, in 2013, for the introduction of a framework for CPC exclusively for one level of registrants: EMTs. It is anticipated that this EMT CPC model will be modified in light of feedback (arising from this PhD) from the groups who have used the process for over six months. The modification of the current EMT CPC framework will become the foundation for the next stage of CPC implementation; the introduction of CPC for paramedics and advanced paramedics.

In this thesis, I initially provide a review of selected healthcare professions (physiotherapy and nursing) to demonstrate how these professions have introduced continuous professional development. I also provided a comparison with international paramedic organisations to place implementation of Irish continuous professional development in context. This comparison demonstrated how Ireland has progressed with registration, regulation and the subsequent professionalism of the discipline while the paramedic profession in many other Countries is still struggling for regulation and the establishment of one national regulatory body either specific to pre-hospital care or as part of a larger healthcare Regulator. In contrast, Irish pre-hospital emergency care is relatively advanced with registration, a national Regulator, clinical practice guidelines and the proposed transition of ambulance education and training to the tertiary sector. While all of these elements may themselves promote the
development of the profession, a potential omission is the need for the Regulator to introduce compulsory CPC for all registrants.

The publications associated with this study have generated awareness to registrants about the need to participate in CPC, the mandatory component of CPC and what defines CPC. Organisations, including voluntary organisations, are now developing and presenting CPC days and producing documentation which allows their employees/members to record CPC activities. Third level institutions are providing CPC days/activities. The HSE National Ambulance Service (NAS) is now accommodating members of voluntary organisations by giving them access to front-line ambulance services, as observers with a view to allowing those members practice under supervision. This was one of the key areas of activity identified by EMTs as a priority to facilitate their requirement for patient contact and to allow more exposure to frontline ambulance calls. The NAS is also assisting the Irish Defence Forces (Army, Naval Services and Aer Corps/Air Force) with CPC by providing training for their pre-hospital emergency care instructors; maintaining competence for these trainers by permitting them function as tutors on paramedic programmes; updating all their registrants in-line with new clinical practice guidelines and providing frontline ambulance placements for all their registrant levels: EMTs, paramedics and advanced paramedics.

These studies have created awareness about CPC more specifically for EMTs as this group are now compelled to participate in CPC. The other registrant levels are now anticipating the national introduction of CPC for paramedics and advanced paramedics.

Finally, prior to the complete roll-out of CPC to the other registrant levels PHECC, having missed the opportunity to refine the CPC process based on initial registrant feedback, now need to refine the current CPC model based on the feedback from the
second qualitative study of EMTs who have used the new model of CPC. These studies and the subsequent introduction of CPC provide a first-level approach to ensuring a link between registration and competence. This allows only for a minimal level of competence to be accounted for but nonetheless does provide a much needed link. Further engagement and research is required to add benefit to the CPC model produced as a result of this thesis.
Personal Reflections

Completion of this PhD has taken me to a new level of understanding and given me skills which will benefit me in work and future study. I have learned about: academic study proposals; survey design; ethics; ethics approval applications; the importance of productive interaction with my primary supervisor; statistics; quantitative and qualitative studies; critical appraisal of papers; journal searches; library; SPSS; Endnote software; the way to construct a paper; referencing rather than just stating; and so many more skills.

My supervisor Professor Colum Dunne has guided me throughout this whole period of study and two other supervisors have been and gone for various reasons. Professor Dunne always interacted with me in a direct but professional manner and it is through his skills of supervision, his knowledge and ability to impart that expertise that I have improved my research and associated skills instrumental in the completion of this entire study. I admire his patience in dealing with me.

While the amount of work associated with this study was significant, the interaction with colleagues, academic staff, PHECC staff and the registrants who participated in the study was exceptional. I could not have completed this study without such widespread support.

I truly believe that this study has added to the development of patient care by pre-hospital practitioners in Ireland and that, as a consequence of CPC, PHECC registrants will at the very least maintain a good level of practice or improve upon their current level of practice. Whilst this adds benefit to the regulation and registration of pre-hospital practitioners and is a worthy cause in itself, the most significant improvement will be a positive impact on patient care, which is at the centre of all that we do.
Appendix A

Request to Access PHECC Register.

Via email 21/04/11.

Dear XXX

As you are aware I am currently working on a Project, funded by PHECC, relating to Continuous Professional Development for Registered Pre-Hospital Practitioners in Ireland. An integral part of this project is to survey all practitioners and consequently I now seek permission of you, The Registrar, to access all contact information related to the three levels of practitioner on the PHECC database.

All practitioners will be contacted and requested to participate in the process and of their right to refuse or withdraw, as they see fit. The data gathered from surveys will be irrevocably anonymised and aggregated so that data cannot be traced to any identified individual. Contact will only be made in relation to this research and registrants details will not be used for any other purpose or given to third parties. The confidentiality of the data received will be my responsibility as the Lead Investigator.

Ethical approval has been granted by the Faculty of Education and Health Sciences interdisciplinary ethics committee at the University of Limerick.

As access to the register is central to the research project I would greatly appreciate your approval at your earliest convenience. If you have any concerns in relation to this request please feel free to contact me by return.

Kind regards,
Appendix B

Ethics approval 1

Shane Knox
Mullagh
Longford
Co. Longford.

11 April 2011

Ref: 01/11 "A Survey Of Registered Pre-Hospital Practitioners In Ireland, To Determine The Needs Of Key Stakeholders So As To Inform The Design Of A Model of Continuous Professional development, as part of PhD research 30th March 2011 - 1st April 2012"

Dear Shane

I am pleased to inform you that the Faculty of Education and Health Sciences interdisciplinary ethics committee grants ethical approval regarding your submission ref 01/11 "A Survey Of Registered Pre-Hospital Practitioners In Ireland, To Determine The Needs Of Key Stakeholders So As To Inform The Design Of A Model of Continuous Professional development, as part of PhD research 30th March 2011 - 1st April 2012". This approval is provisional on you obtaining permission from the MWRHREC (HSE) as well.

Should you have any further questions please don’t hesitate to contact me.

Kindest Regards

Dr. Jean Saunders
Chair
Faculty of Education and Health Sciences Interdisciplinary Ethics Committee
11th May, 2011.

Mr. Shane Knox,
Mullagh,
Longford,
Co. Longford.

Re: A Survey of Registered Pre-Hospital Practitioners in Ireland, to determine the needs of key stakeholders so as to inform the design of a Model of Continuous Professional Development, as part of PhD research.

Dear Mr. Knox,

I am in receipt of your study as above submitted for review by our Research Ethics Committee. I have reviewed the contents of same.

I wish to advise that I have given your study Chairperson ethical approval.

You should note that your study cannot commence until you also receive approval from the Risk Management Department. You are obliged to inform us as soon as your study is completed or if it terminates early for any reason. This approval will be issued to you shortly.

I wish you every success with your study.

Yours sincerely,

Marie Hickey Dwyer,
Consultant Ophthalmic Surgeon,
Chairperson, Research Ethics Committee.
21st June, 2011.

Mr. Shane Knox,
Mullagh,
Longford,
Co. Longford.

RE: Protocol Title:
A Survey of Registered Pre-Hospital Practitioners in Ireland, to determine the needs of key stakeholders so as to inform the design of a Model of Continuous Professional Development, as part of PhD research.

Dear Mr. Knox,

The Research Ethics Committee at the Mid-Western Regional Hospital, Limerick has received a submission for ethical approval for the above study.

The following documents were reviewed and approved by the Research Ethics Committee:

- Application to the Research Ethics Committee
- Research Methodology
- Informed Consent Form – Interview
- Informed Consent Form Postal Questionnaire
- Implied Consent for Electronic Survey
- Sample Questionnaire

	Approved

This approval is valid for one year from the date(s) accepted above unless otherwise noted on this document.

From an insurance perspective, please note that cover does not extend to those parties not employed by the Health Service Executive (HSE), or non-HSE Institutions.

Yours sincerely,

[Signature]

[Name]
Medical Directorate.
(For and on behalf of the Research Ethics Committee).
Appendix C – HSE Open Access Research Award

12th December 2014

Quality and Patient Safety Category.

Award winner: Continuous Professional Competence (CPC) for Irish paramedics and advanced paramedics: a national study

Continuous professional competence (CPC) for Irish paramedics and advanced paramedics: a national study

NEIL HANDLE:
http://hdl.handle.net/10147/214064

TITLE:
Continuous professional competence (CPC) for Irish paramedics and advanced paramedics: a national study

AUTHORS:
Knox, Shane; Cullen, Walter; Dunne, Colum

CITATION:
Knox, Shane; Cullen, Walter; Dunne, Colum. Continuous professional competence (CPC) for Irish paramedics and advanced paramedics: a national study. BMC Medical Education. 2014 Mar 02;14(1):41

ISSUE DATE:
2 Mar 2014

URL:

ABSTRACT:
Abstract Background: Internationally, continuing professional competence (CPC) is an increasingly important issue for all health professionals. With the imminent introduction of a CPC framework for paramedics and advanced paramedics (APs) in Ireland, this paper aims to identify factors that will inform the implementation of this CPC framework by seeking stakeholder input into the development of a CPC model for use by the regulatory body. Our secondary objective is...
Appendix D – Chapters as Published
First evaluation of CPD advanced paramedic teaching methods in Ireland

Shane Knox, Walter Cullen, Niamh Collins, Colum Dunne

Journal of Paramedic Practice, Vol. 5, Iss. 1, 14 Jan 2013, pp 29 - 35

http://www.paramedicpractice.com/cgi-bin/go.pl/library/article.cgi?uid=96257;article=pp_5_1_29
Continuous professional competence (CPC) for emergency medical technicians in Ireland: educational needs assessment

Shane Knox1,2, Walter Cullen1 and Colum Dunne1*

Abstract

Background: As in other countries, the Irish Regulator for Pre-Hospital practitioners, the Pre-Hospital Emergency Care Council (PHECC), will introduce a Continuous Professional Competence (CPC) framework for all Emergency Medical Technicians (EMTs), Paramedics and Advanced Paramedics (APs). This framework involves EMTs participating in regular and structured training to maintain professional competence and enable continuous professional developments. To inform the development of this framework, this study aimed to identify what EMTs consider the optimum educational outcomes and activity and their attitude towards CPC.

Methods: All EMTs registered in Ireland (n = 925) were invited via email to complete an anonymous online survey. Survey questions were designed based on Continuous Professional Development (CPD) questionnaires used by other healthcare professions. Quantitative and qualitative analyses were performed.

Results: Response rate was 43% (n = 399). 84% of participants had been registered in Ireland for less than 24 months, while 59% had been registered EMTs for more than one year. Outcomes were: evidence of CPC should be a condition for EMT registration in Ireland (95%), 78% believed that EMTs who do not maintain CPC should be denied the option to re-register. Although not required to do so at the time of survey, 69% maintained a professional portfolio and 24% had completed up to 20 hours of CPC activities in the prior 12 months. From a list of 22 proposed CPC activities, 97% stated that practical scenario-based exercises were most relevant to their role. E-learning curricula without practical components were considered irrelevant (32%), but the majority of participants (91%) welcomed access to e-learning when supplemented by related practical modules.

Conclusion: EMTs are supportive of CPC as a key part of their professional development and registration. Blended learning, which involves clinical and practical skills and e-learning, is the optimum approach.

Keywords: Emergency medical technicians, Continuous professional development, CPD, Blended learning, E-learning, Educational, Ambulance

Background

Pre-hospital care in Ireland is provided by the Health Service Executive’s (HSE) National Ambulance Service (NAS) and (in parts of Dublin city) the ‘Dublin Fire Brigade’. Staff who respond to pre-hospital incidents are all trained to Paramedic or Advanced Paramedic (AP) level. In addition, pre-hospital care is provided at sporting and other public events by Emergency Medical Technicians (EMTs), mostly within the voluntary organisations: Civil Defence, Order of Malta Ireland, St. John Ambulance and the Irish Red Cross. All of these practitioners are registered with the regulating authority, Ireland’s Pre-Hospital Emergency Care Council (PHECC) [1].

Currently, once registered as a practitioner with PHECC there is no requirement to show evidence of competence, other than annual certification in Cardiopulmonary Resuscitation (CPR). In order to re-register practitioners must also complete a self-declaration form stating that they are currently practicing, are of good character and in good health and will commit to the PHECC Code of Conduct.

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Full list of author information is available at the end of the article
and Ethics. There is no current requirement to show evidence of any patient contacts, or to maintain a learning portfolio, or participate in skill maintenance programmes. PHECC licences are issued yearly, while re-registration occurs every three years.

In 1993, a report from the Irish government [2] stated that the ambulance service “forms a valued and integral part of the emergency services” and “was used as an extension of the hospital service with the objective of getting the patient into hospital as quickly as possible so that advanced medical treatment could be provided by a medical practitioner”, thus implying: 1) that advanced medical treatment could only commence within a hospital and 2) that the only purpose of the ambulance service was to provide transport for patients. The same report further recommended significant improvement in the quality of training provided to ambulance personnel. Reflecting its most recent iteration, this recommendation is furthered in the PHECC strategic plan (2011–2014) where the need to develop and implement a continuing professional competence (CPC) framework was stated [3]. However, translating advances in care guidelines into actual care delivered to patients poses many challenges associated with the effective acquisition of new knowledge and practical skills in addition to maintenance of existing expertise.

Previous studies have assessed Paramedic and Advanced Paramedic training and continuing education in Ireland [4–7]. However, in this study, we wished to determine, for the first time, the attitudes of EMTs in Ireland towards CPC, their suggested outcomes / preferred delivery format and relevance to their roles. We devised a short answer survey, based on similar questionnaires used by other professions [8–12], to determine current EMT demographics, CPC activities, and attitudes towards effectiveness of the varying training methods employed. It is hoped that this information will inform future CPC programme development.

Methods
Participants
In July and August 2012, all EMTs licensed to practice in Ireland and registered with the Pre-hospital Emergency Care Council’s (PHECC) (n = 925) were contacted by email. Questions were entered into a Survey Monkey® online questionnaire (www.surveymonkey.com). A link was provided to the survey and to a concise, unbiased explanation of the survey topic. Participation was voluntary and anonymous. Consent to participate was recorded. Conduction of the study and its design, taking into consideration published healthcare professions’ questionnaires relating to continuous professional development (CPD) [9–11,13], were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland.

Data collection and analysis
Health professionals are increasingly expected to identify their own learning needs through self-assessment [14,15]. Therefore, the survey questions were designed to elicit participants’ views on CPC and, so, the survey was piloted following a presentation on CPC to 120 registered EMTs at a biannual conference in 2011 [16]. Responses were recorded (included audio recording) and summarised at the event using mind mapping software [17]. Following analysis of the exercise, the design of the questionnaire was finalised and trialled using 12 EMTs who were subsequently excluded from the analyses.

The questionnaire (see Additional file 1) comprised questions relating to demographics, opinions on CPC, registration and also included a matrix of 22 listed activities whereby participants were asked to indicate how relevant they believed each activity was to CPC. Some of the activities related to education generally, while others related specifically to pre-hospital practice. There were 26 items in the questionnaire. Not every single question was answered by every respondent and, therefore, answers are described by number and percentage of responses to specific questions. The data were downloaded from Survey Monkey™ software to an electronic data file and quantitative analysis was performed using Statistical Packages for the Social Sciences (SPSS version 20.0).

Results
Demographics
399/925 responses were received (43% of all registered EMTs), of whom 271 (68%) were Male; 115 (29%) were Female and 13 (3%) did not report gender. Table 1 compares the Age category with Gender.

However, while responses were reasonably well dispersed (Figure 1) across the voluntary organisations: i.e., Order of Malta (96, 24%), Civil Defence (80, 20%), St. John Ambulance Brigade (29, 7%) and the Irish Red Cross (97, 24%), there was considerably less participation by EMTs employed by the Irish State (10%) such as the Permanent Defence Forces, Irish Health Service, An Garda Síochána (Police), etc and private ambulance services 9.7%. It should be noted that there were very few EMTs within these organisations at the time of the survey (as they are not employed in their permanent position as EMTs but may have completed the programme independently).

A total of 325 (84%) of respondents were registered EMTs for two years or less (Table 2), with almost half of those (161) being registered for less than one year. Respondents who had been with their organisation for less
than five years represented 33% (n = 131) of the total surveyed, while 28% (n = 113) of those with less than five years service within their organisation had been registered as EMTs for less than two years. 21% of respondents had over 20 years experience with their respective organisations while 34% had less than six years service. 30–39 year old respondents represented 30% (n = 118) of the total responses and also represented the largest age group of those with their Organisation for less than five years.

Attitudes towards continuous professional competence  
CPC is considered extremely important by 86% (n = 343) of the EMTs surveyed. 82% (n = 329) agreed that all EMTs should maintain evidence of CPC activities. A total of 61% (n = 243) agreed that CPC is the sole responsibility of the registered practitioner (strongly agreed 26%, n = 104 and agreed 35%, n = 139). Over 78% of respondents (n = 313) believed that their organisation should have input, at least to some extent, into what components should constitute an individual’s CPC, with only 7% (n = 26) stating that the organisation should not have input. Of the EMTs surveyed, (39%, n = 154) disagreed that only the regulatory body (PHECC) should determine the structure of CPC components, while 26% (n = 105) agreed that only the PHECC should determine the structure of CPC.

Linking continuous professional competence activities and registration  
The majority of EMTs surveyed (69%, 220/321), although not obligated, maintained a professional portfolio at the time of the survey (Table 3), with 24% (n = 97) stating that they had completed up to 20 hours of CPC over the previous 12-month period. 11% (n = 43) claimed that they had completed over 100 hours of CPC in the same period. Notably, almost a quarter (23%, n = 91) of those who had completed their CPC in the previous year had funded participation themselves, while 29% (n = 116) had their costs covered by their organisation either partially (12%, n = 46) or in full (18%, n = 70). When queried as to appropriate levels of CPC required, given a range of choices: 20 hours; 21–40 hours; 41–60 hours; 61–80 hours and 81–100 hours almost 40% (n = 159) believed that an EMT should complete 20–40 hours annually (a combination of the first
### Table 2 Participants’ length of service and registration with regulatory authority

<table>
<thead>
<tr>
<th>Registration with the pre-hospital emergency care council (PHECC)</th>
<th>Up to 1 year</th>
<th>1 - 2 years</th>
<th>3 - 4 years</th>
<th>5 - 6 years</th>
<th>More than 6 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years with current organisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>Count</td>
<td>68</td>
<td>45</td>
<td>17</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% of total</td>
<td>17.6%</td>
<td>11.7%</td>
<td>4.4%</td>
<td>.3%</td>
<td>.0%</td>
<td>33.9%</td>
</tr>
<tr>
<td>6-10</td>
<td>Count</td>
<td>43</td>
<td>28</td>
<td>16</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% of total</td>
<td>11.1%</td>
<td>7.3%</td>
<td>4.1%</td>
<td>.3%</td>
<td>.0%</td>
<td>22.8%</td>
</tr>
<tr>
<td>11-15</td>
<td>Count</td>
<td>22</td>
<td>34</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% of total</td>
<td>5.7%</td>
<td>8.8%</td>
<td>1.0%</td>
<td>.3%</td>
<td>.0%</td>
<td>15.8%</td>
</tr>
<tr>
<td>16-20</td>
<td>Count</td>
<td>8</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% of total</td>
<td>2.1%</td>
<td>4.1%</td>
<td>.5%</td>
<td>.0%</td>
<td>.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>over 20</td>
<td>Count</td>
<td>20</td>
<td>41</td>
<td>13</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>% of total</td>
<td>5.2%</td>
<td>10.6%</td>
<td>3.4%</td>
<td>.0%</td>
<td>1.6%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>161</td>
<td>164</td>
<td>52</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>% of total</td>
<td>41.7%</td>
<td>42.5%</td>
<td>13.5%</td>
<td>.8%</td>
<td>1.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Table 3 Attitudes towards CPC and linking CPC activities and registration

<table>
<thead>
<tr>
<th>Attitudes towards continuous professional competence (CPC)</th>
<th>Agree</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC is extremely important to me</td>
<td>86%</td>
<td>343</td>
</tr>
<tr>
<td>EMTs should maintain evidence of CPC activities</td>
<td>82%</td>
<td>320</td>
</tr>
<tr>
<td>CPC is the sole responsibility of the registered practitioner</td>
<td>61%</td>
<td>243</td>
</tr>
<tr>
<td>Your organisation should have some input into your CPC</td>
<td>78%</td>
<td>313</td>
</tr>
<tr>
<td>Only PHECC should determine the structure of CPC</td>
<td>26%</td>
<td>105</td>
</tr>
<tr>
<td>Linking CPC activities and registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently maintain a professional portfolio</td>
<td>69%</td>
<td>220/321</td>
</tr>
<tr>
<td>How many hours of CPC have you completed over the previous 12- month period?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 20 hours</td>
<td>24%</td>
<td>97</td>
</tr>
<tr>
<td>Over 100 hours</td>
<td>11%</td>
<td>43</td>
</tr>
<tr>
<td>Who paid for your CPC over the previous 12-month period?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-funded</td>
<td>23%</td>
<td>91</td>
</tr>
<tr>
<td>Paid for by your Organisation – in full</td>
<td>18%</td>
<td>70</td>
</tr>
<tr>
<td>Paid for by your Organisation – partially</td>
<td>12%</td>
<td>46</td>
</tr>
<tr>
<td>How many hours of CPC activities do you think would be appropriate for EMTs in a 12-month period?</td>
<td>Agree</td>
<td>Number of responses</td>
</tr>
<tr>
<td>20 hours</td>
<td>14%</td>
<td>58</td>
</tr>
<tr>
<td>21-40 hours</td>
<td>25%</td>
<td>101</td>
</tr>
<tr>
<td>41-60 hours</td>
<td>17%</td>
<td>69</td>
</tr>
<tr>
<td>61-80 hours</td>
<td>8%</td>
<td>31</td>
</tr>
<tr>
<td>81-100 hours</td>
<td>8%</td>
<td>34</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>37</td>
</tr>
<tr>
<td>Skipped question</td>
<td>17%</td>
<td>69</td>
</tr>
<tr>
<td>EMTs who do not maintain their CPC and who continue not to meet the requirements, should not be allowed to re-register as an EMT</td>
<td>78%</td>
<td>273/352</td>
</tr>
<tr>
<td>Evidence of CPC should be a condition for EMT registration</td>
<td>95%</td>
<td>341/359</td>
</tr>
<tr>
<td>Registration as an EMT with PHECC is of personal importance</td>
<td>95%</td>
<td>381</td>
</tr>
</tbody>
</table>
two categories), with only 8% (n = 34) stating that 81–
100 hours would be appropriate.

Over 78% (273/352) of the EMTs surveyed stated that
EMTs who do not maintain their CPC and continue not
to meet the requirements, should not be allowed to re-
register. 95% of respondents either strongly agreed (61%,
218/359), or agreed (34%, 123/359), that evidence of
CPC should be a condition for EMT registration. 95%
(n = 381) stated that registration with PHECC was of
personal importance to them.

Consultation regarding specific continuous professional
competence activities

Most respondents considered practical type learning rele-
vant (Table 4): training on a simulation manikin 92% (297/
321), regular practical assessments 79% (253/319); Cardiac
First Response (CFR/CPR) re-validation 97% (311/322);
practical training scenarios 97% (313/321); completing a
duty with paramedics/advanced paramedics 95% (306/321)
and Annual Major Incident exercises 92% (297/319).

With regard to access to e-learning followed by related
practice: 91% of respondents (291/320) believed this to be
very relevant (45%, n = 145) or relevant 46% (n = 146);
compared with ‘e-learning modules only and no related
practice being very relevant 9% (n = 29) and relevant
26% (n = 80). ‘E-Learning modules only and no related
practice’ recorded the highest ‘Very Irrelevant’ (8%, 27/
313)/’irrelevant’ 24% (74/313) responses from all cat-
egories with a combined total of 32% (101/313) claiming
it has no relevance.

In addition to the practical-type, hands-on activities pre-
ferred for CPC maintenance, EMTs also considered the
following activities very relevant or relevant in maintain-
ing Continuous Professional Competence: courses ac-
credited by PHECC 96% (307/319); keeping a learning
portfolio 90% (288/319); mentoring others 87% (277/317);
lecturing/teaching 86% (276/319); being a Tutor 79%
(251/316); attending relevant conferences 78% (246/317);
appraisal with a senior EMT officer (or above) 78% (248/
319); case study review 64% (204/317); being an examiner
69% (222/319); appraisal with a doctor/medical supervisor
65% (207/320); first aid competitions 50% (159/315); pro-
ject work 48% (152/318); appraisal of a journal publication
39% (124/316).

<table>
<thead>
<tr>
<th>Table 4 Relevance of potential CPC activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very relevant/relevant = relevant not relevant/very irrelevant = not relevant</strong></td>
</tr>
<tr>
<td><strong>Responses</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Practical training scenarios</td>
</tr>
<tr>
<td>Annual cardiac first response/CPR revalidation</td>
</tr>
<tr>
<td>Attending courses accredited by PHECC</td>
</tr>
<tr>
<td>Doing a duty with paramedics/advanced paramedics</td>
</tr>
<tr>
<td>Major Incident/emergency exercises</td>
</tr>
<tr>
<td>Training on a simulation manikin</td>
</tr>
<tr>
<td>Access to e-learning followed by related practice</td>
</tr>
<tr>
<td>Keeping a portfolio of CPC activities</td>
</tr>
<tr>
<td>Mentoring others</td>
</tr>
<tr>
<td>Lecturing/teaching</td>
</tr>
<tr>
<td>Access to medical journals/medical books</td>
</tr>
<tr>
<td>Regular practical assessments</td>
</tr>
<tr>
<td>Being a tutor</td>
</tr>
<tr>
<td>Appraisal with senior EMT Officer (or above)</td>
</tr>
<tr>
<td>Relevant conferences e.g RESUS</td>
</tr>
<tr>
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<tr>
<td>Appraisal with a doctor/medical supervisor</td>
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<td>Case study review</td>
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<td>First aid competitions</td>
</tr>
<tr>
<td>Project work</td>
</tr>
<tr>
<td>Appraisal of journal publications</td>
</tr>
<tr>
<td>e-learning modules only and no related practice</td>
</tr>
</tbody>
</table>
Discussion

Whilst there is evidence of competence and CPD programmes within ambulance services internationally (e.g., Norway [18], Australia [19], UK [20], Canada [21]), the evidence of any consultation with practitioners prior to the introduction of such programmes is scarce.

EMTs must embrace the multitude of activities that contribute to a professional’s development and the outcome of good CPD should be practitioners with increased competence and improved patient care [22]. This is the first study of attitudes towards professional competence among EMTs in Ireland and indicates that there appears to be a genuine enthusiasm for the introduction of CPC and a positive link to professionalism, similar to other healthcare professions [9,11,12,23-26]. This enthusiasm towards CPC is reinforced further as a significant number of EMTs are already maintaining a learning portfolio and participating in CPC activities, as the vast majority of participants agreed that CPC should be a requirement for PHECC registration and as 95% believed that registration with PHECC is of personal importance to them. This view of CPD being a requirement for registration is supported by legislation for some professions [27-29] or shown in previous studies to be shared by practitioners themselves [26,30].

E-learning

E-learning is the use of internet technologies to enhance knowledge and performance [31]. There are many formats in which e-learning is delivered and many terms synonymous with e-learning, such as web-based (WBL) or on-line learning. One of the advantages of e-learning is that it can be synchronous or asynchronous and, therefore, can be flexible and particularly attractive for pre-hospital practitioners. In Ireland, PHECC has progressed the use of on-line examinations and learning modules since its formation. Indeed, Irish EMT examinations are delivered partially via an electronic software programme. Most Health Professions regulators tend to accredit and set standards in training rather than develop training [32,33] and, so, the e-learning approach (albeit blended with practical instruction provided by the training institutions) utilised most recently by PHECC to allow paramedics and APs complete on-line learning modules is unusual. Furthermore, this training methodology had not been in place for the initial training of EMTs surveyed and, taking cognisance of the survey results, it would appear that EMTs might use e-learning followed by practical reinforcement, but would appear less eager to use e-learning alone as a means to maintain competence.

Our survey included 22 potential CPC activities (see Table 4) and asked which activities did EMTs believe were relevant/irrelevant. The results showed that practical, hands-on activities were preferred over theoretical/non-practice type activities. Also, there were less negative responses regarding activities related to practical skills than to theoretical skills. This further substantiates the case for practical, hands-on activities, whether as a standalone activity or coupled with the e-learning approach. The EMTs surveyed in this study seemed to share the view of Ruiz et al in that perhaps they did not value e-learning as a replacement for traditional instructor-led training but rather as a complement to it, forming part of a blended-learning strategy [31]. EMTs function in environments that require lateral thinking [34]. Arguably, variation in learning methodologies could be encouraged so to facilitate the variations in personal learning styles while also taking cognisance of nuances in practice.

Previous studies with Irish advanced paramedics and paramedics reinforce the concept of practical-type learning as a preferred methodology and as an effective way of maintaining skills [7,35] and that skills practice is an integral part of maintaining competence [36]. Indeed, our results, in part, reinforce the focus of older/traditional basic training curricula for ambulance staff in the United Kingdom and Ireland, which for the most part, was skills-based [37]. This is quite different to results seen for other professions who tend to prefer attending conferences, lectures and reading of relevant journals [9,12], even though there is little evidence to suggest that attending conferences had any direct impact on improving professional practice [38].

CPC annual hours

Internationally, there are similarities in the way in which CPC hours are recorded, most being based on an hours-related credit system, in which one hour of educational activity equates to one credit and the number of credit/hours required vary from between 50–100 per year [30]. Irish doctors now, under the Medical Practitioners Act [27] must meet professional competence requirements [39] and this currently is 50 hours per year. In that context, the respondents in this survey believe that it would not be unreasonable to expect EMTs to complete 20–40 hours annually.

Limitations

The study had a number of strengths and weaknesses. The majority of respondents were male 70% (n = 272) in what is predominantly a male dominated profession in Ireland. At the time of the survey, there were 634 males registered with PHECC representing 69% of all EMTs registered (n = 925). Thus, the sample of participants in this study was similar to the proportion of male EMTs registered with PHECC.
The response to this survey was quite favourable, with a response rate of over 40%. This too is perhaps not surprising and may be due to the fact that the EMTs surveyed, for the most part, were affiliated with the voluntary organisations and, by association, are enthusiastic volunteers who self-nominated to progress to EMT programmes and subsequent examinations.

Notably, one group of EMTs may not have participated. These are EMTs not affiliated to any organisation and who most likely completed the EMT training programme independently.

While the response to the survey was quite favourable, we acknowledge some methodological considerations may limit generalisability. For instance, while we report data from 399 responses, this represented 43% of all registered EMTs. Our study was limited to those with valid email addresses on the PHECC register and clearly those for whom the subject area was a priority. Therefore, it is possible that our sample may not be representative of EMTs in general. Furthermore, the fact that a significant number of respondents represented a younger population (with over 27% under the age of thirty years, and a further 30% under the age of forty years) may have influenced the results. Arguably, a younger population may prefer a blended learning approach with an active participation and e-learning combination given the possibility that they may be more familiar with on-line/e-learning experiences. Indeed, the length of the survey may have been perceived as too long or complex, thereby reducing the return rate. Further research following the introduction of CPC for EMTs may expand upon these findings.

Conclusions
To date, little research has been conducted with PHECC registered practitioners in general or on EMTs and CPD/C internationally. This survey is the first to ascertain the opinions of EMTs regarding CPC in terms of what is being completed currently, and how it may be developed in Ireland in the coming years.

The results of this survey demonstrate, at the very least, emphasis will need to be placed on practical activities such as: Cardiac First Response, maintaining a portfolio of evidence, mentoring others, completing operational shifts with paramedics and advanced paramedics and a blended learning approach with e-learning.

Conversely, less emphasis should be placed on e-learning alone and prudent purveyors of education for pre-hospital practitioners should emphasise inclusion of practical-type education.

There appears to be a genuine enthusiasm towards CPC, with a large number of EMTs already completing CPC activities, maintaining a learning portfolio and maintaining their registration. Maintaining this motivation is an important facet of effective professional competence and development.

Additional file

Additional file 1: Emergency Medical Technician Continuous Professional Competence questionnaire.

Competing interests
The authors declare that they have no competing interests.

Authors’ contributions
SK conceived of the study and was involved in the design, collection of data, data analysis, drafting the manuscript. WC and CD (principal investigator) were involved in the conception of the study, data analysis and interpretation and drafting the manuscript. All authors read, reviewed the manuscript critically for intellectual content, and approved the final manuscript.

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Acknowledgements
The authors thank the Registered EMTs who participated in the conference feedback session and those who gave their time to respond to the questionnaire. Thanks also to Dr Helen Purtill of the Statistical Consulting Unit, University of Limerick for her comments on the design and results of the survey and Dr. Niamh Cummins, from the Centre for Pre-Hospital Research (CPR) University of Limerick, for her comments on the results and manuscript.

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Received: 12 July 2013 Accepted: 13 December 2013
Published: 17 December 2013

References


Cite this article as: Knox et al.: Continuous professional competence (CPC) for emergency medical technicians in Ireland: educational needs assessment. BMC Emergency Medicine 2013 13:25.
Continuous Professional Competence (CPC) for Irish paramedics and advanced paramedics: a national study

Shane Knox1,2*, Walter Cullen1 and Colum Dunne1

Abstract

Background: Internationally, continuing professional competence (CPC) is an increasingly important issue for all health professionals. With the imminent introduction of a CPC framework for paramedics and advanced paramedics (APs) in Ireland, this paper aims to identify factors that will inform the implementation of this CPC framework by seeking stakeholder input into the development of a CPC model for use by the regulatory body. Our secondary objective is to determine the attitudes of registrants towards CPC and what they consider as optimal educational outcomes and activities, for the purposes of CPC.

Methods: All paramedics and APs registered in Ireland (n = 1816) were invited by email to complete an anonymous on-line survey. The study instrument was designed based on CPD questionnaires used by other healthcare professions. Quantitative and qualitative analyses were performed.

Results: The overall response rate was 43% (n = 789), with 82% of APs and 38% of paramedics participating. Eighty-nine per cent agreed that registration was of personal importance; 74% agreed that evidence of CPC should be maintained and 39% believed that persistent failure to meet CPC requirements should mandate denial of registration. From a pre-determined list of activities, respondents indicated practical training scenarios (94%), cardiac re-certification (92%), e-learning supplemented by related practice (90%) and training with simulation manikins (88%) were most relevant, while e-learning alone (36%), project work (27%) and reading journal articles (24%) were least relevant.

Conclusions: Irish Paramedics and APs are supportive of CPC linked with their professional development and registration. Blended learning, involving evidence of patient contact, team-based learning and practical skills are preferred CPC activities.

Keywords: Paramedics, Advanced paramedics, Continuous professional development, CPD, Continuous professional competence

Background

In 1993, a report from the Irish Government [1] recommended a significant improvement in the quality of training provided to ambulance personnel. This recommendation was reiterated most recently in the PHECC strategic plan (2011-2014) where the need to develop and implement a continuous professional competence (CPC) framework was stated [2]. This task is made more difficult in Ireland as, currently, once qualified there is no regulatory requirement for the practitioner to provide evidence of competence, or any link between competence and registration to practice. However, it is reasonable that practitioners and consumers alike view maintenance of competency as a basic element of ethical and responsible practice [3].

One of the functions of a healthcare Regulator is to protect the public by ensuring that acceptable standards of care are being provided [4]. Previous studies have assessed emergency medical technician, paramedic and advanced paramedic (AP) training and continuing education in Ireland [5,6] and internationally [7-9]. However, in
this study we wished to determine, for the first time, the attitudes of Irish paramedics and APs towards CPC, their preferred activities, delivery format and relevance to their roles.

It has been stated that any form of compulsory education is incongruent with the nature of both being a professional and adult; professionals should be self-directed enough to participate autonomously in educational activities rather than being compelled [10]. For Continuing Medical Education (CME) to be effective, Norman et al. believe that there is a requirement to justify CME content through a specific needs assessment [11]. With this in mind, we aimed to devise a short answer survey to guide and inform the impending CPC implementation in Ireland.

Methods
Context
The majority of front-line emergency ambulance services in Ireland are provided by paramedics and supported by advanced paramedics. Advanced paramedics, having completed additional training, provide advanced life support skills and interventions while paramedics do not do so. Pre-hospital care in Ireland is largely provided by the Health Service Executive (HSE) National Ambulance Service (NAS) and (in parts of Dublin city) the ‘Dublin Fire Brigade’. Other providers of pre-hospital care include the Irish Permanent Defence Forces, Coastguard, and private ambulance services, in addition to Emergency Medical Technicians, mostly within the voluntary organisations: Civil Defence, Order of Malta Ireland, St. John Ambulance and the Irish Red Cross. All of these practitioners are registered with the regulating authority, Ireland’s Pre-Hospital Emergency Care Council (PHECC).

Participants
In February 2012, all paramedics and APs licensed to practice in Ireland and registered with the Pre-Hospital Emergency Care Council’s (PHECC) with valid email addresses (n = 1816) were contacted and provided a link to the Survey Monkey™ online study instrument and to a concise, unbiased explanation of the survey topic. Participation was voluntary and anonymous. Consent to participate was recorded. As a follow-up, reminder emails which have been shown to be beneficial in improving the response rate [12] were emailed two weeks later to the same group. The design and conducting of the study, taking into consideration published healthcare professions’ questionnaires relating to continuous professional development (CPD) [13,14] were approved by the Ethics Committee of the Faculty of Education and Health Sciences, University of Limerick, Ireland and the Research Ethics Committee of the Health Services Executive Mid-Western Regional Hospital, Limerick, Ireland.

Data collection and analysis
Health professionals are increasingly expected to identify their own learning needs through self-assessment [15]. Therefore, the survey questions were designed to elicit participants’ views on CPC. The survey was piloted by 20 registered paramedics who were subsequently excluded from the analyses.

The questionnaire was based on questionnaires used by other professions [13,14] comprised questions relating to: demographics; opinions regarding CPC, including the role of the employer; CPC portfolio development; linkage or CPC and registration. The response data were downloaded from Survey Monkey™ software to an electronic data file and quantitative analysis was performed using Statistical Packages for the Social Sciences (SPSS version 20.0). To make analysis more meaningful, responses to the five-point Likert scale were analysed using three options, ‘strongly agree/agree’, ‘undecided’ and ‘strongly disagree/disagree’.

Results
Demographics
789/1816 responses were received (43% of all registered paramedics and APs with email addresses), of whom 598 were paramedics. While the largest number of responses to the survey was from paramedics (38%, 598), 82% of the advanced paramedic cohort participated (191 of 232 APs) representing the greatest proportional response (Figure 1). The majority of respondents were male (85%, 670) (Table 1). These respondents predominantly served in the Irish National Ambulance Service (71%) and the Dublin Fire Brigade (14%) (Figure 2).

A total of 363 (46%) participants had been registered in Ireland for greater than six years, while 336 (30%) had been registered for 3–6 years and the remainder for less than 3 years. Respondents who had been with their organisation for less than five years represented 33% (260) of the total surveyed, while 15% (113) had over 20 years experience with their respective organisations.

Attitudes towards continuous professional competence and registration
Registration with PHECC was considered personally important by 89% (697) of respondents, with only 2% disagreeing. Indeed, in the context of active professional pre-hospital practitioners, 77% (615) of the paramedics/APs stated that CPC was extremely important. Most respondents (74%, 584) agreed that CPC should be a condition of registration to practice, and 67% (526) agreed that paramedics and APs should maintain evidence of CPC activities to ensure registration, while only 8% (66) disagreed.

Further, 61% (487) of respondents believed that those practitioners who do not maintain CPC and continue
did not support this proposition. Of interest in the context of introducing a CPC framework for the first time, the majority of respondents (70%, 551) would not consider registering at a lower level rather than having to complete CPC.

### CPC activities

A small majority of paramedics/APs surveyed (53%), although not obligated, maintained a professional portfolio at the time of the survey. Fifty seven per cent had completed greater than 20 hours of CPC activities in the prior 12 months, with nearly 20% (19.9%) having completed more than 60 hours (Figure 3). When queried as to appropriate levels of CPC required in a 12-month period, 35% believed 21-40 hours, 26% that 41-60 hours, and 17% that 20 hours would be adequate (Figure 4).

Forty per cent of those who had completed their CPC in the previous year had funded participation themselves, 23% had their costs covered in full by their employer, 9% had their costs partially covered and 12% had completed only cost-free CPC activities.

Sixty five per cent preferred funding to be provided for their own personal CPC activities so that they may decide what is relevant to their own needs, while 69% believed that the regulator should provide funding for organisations to develop their own customised CPC activities.

**Table 1 Gender and registration level**

<table>
<thead>
<tr>
<th>Registration status with regulatory body (PHECC)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced paramedic</td>
<td>138</td>
<td>19</td>
<td>157</td>
</tr>
<tr>
<td>Advanced paramedic intern</td>
<td>19</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Advanced paramedic trainee</td>
<td>11</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Paramedic</td>
<td>451</td>
<td>81</td>
<td>532</td>
</tr>
<tr>
<td>Paramedic intern</td>
<td>38</td>
<td>11</td>
<td>49</td>
</tr>
<tr>
<td>Paramedic trainee</td>
<td>14</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Response percentage</td>
<td>86%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Response totals</td>
<td>670</td>
<td>119</td>
<td>789</td>
</tr>
</tbody>
</table>

**Figure 1** Registered paramedics and APs in Ireland and number of responses.

![Figure 1](image1.png)

**Figure 2** Responses from paramedics and advanced paramedics based on organisation (789 respondents).

![Figure 2](image2.png)
53% (422) of participants held the view that any individual’s CPC should be subject to audit by their respective organisations, while 38% (302) disagreed with the concept of CPC being the sole responsibility of the practitioner. Over 79% (626) felt that their organisation should have input into what comprised their CPC, a view that was supported somewhat by 43% (344) disagreeing with the regulatory body alone controlling composition of CPC (although 21% (166) favoured this).

Consultation regarding specific models of continuous professional competence
Overall, the majority of respondents (77%) favoured the introduction of CPC by the regulatory body using a ‘mixed’ model approach of combining ‘mandatory’ and ‘voluntary’ activities, with 77% supportive of minimum standard requirements that include evidence of Patient Care Report (PCR) completion, clinical practice guidelines (CPGs) compliance and patient management.

Most respondents considered practical-type learning relevant to their roles (Table 2): practical training scenarios 94% (582), annual cardiac re-certification 92% (566), access to e-learning followed by related practice 90% (566), and training on simulation manikins 88% (535). The activities that received the highest ‘not relevant’ response were: ‘e-learning modules only and no related practice 36% (210); project work 27% (166); appraisal of journal publications 24% (147).

In addition to the practical-type, hands-on activities preferred for CPC maintenance, paramedics and APs also considered the following activities very relevant or relevant in maintaining Continuous Professional Competence: access to medical journals/books 88% (538/615); attending courses accredited by the Regulator (PHECC) 84% (518/614); annual Cardiac First Response (CFR) revalidation 85% (517/611); evidence of current CPG compliance 80% (489/611); mentoring others 79% (483/613); major incident/emergency exercises 78% (480/612); regular practical assessments 75% (458/613); working in a related hospital department 74% (453/611); keeping a portfolio of CPC activities 73% (441/606); attending relevant conferences 66% (405/613); lecturing/teaching 65% (403/612); appraisal with a senior Training Officer 61% (373/612); being a tutor 57% (349/607); appraisal with a doctor/medical supervisor 51% (309/610); being an examiner 51% (309/607); case study review 46% (283/610).

Discussion
While some literature reports the development of ambulance CPD programmes internationally [7,8] and while CPD is more likely to lead to a change in practice when a needs assessment has been conducted [16], literature that reports consultation with practitioners prior to the introduction of such programmes is limited.

This first study of attitudes towards professional competence among paramedics and APs in Ireland suggests a genuine enthusiasm for the introduction of CPC, with 77% indicating that CPC was of personal importance to them, 74% indicating that evidence of CPC should be a condition for registration to practice and 53% already maintaining a CPC portfolio and participating in CPC activities, although not currently mandated to do so (Figure 3).

Funding and available time have both been identified in previous studies of healthcare workers as a barrier to CPD [17]. While 40% stated they had paid for CPC activities themselves, 65% would prefer if funding was provided and for them to arrange their own personal CPC activities, while 69% believed that the regulator should provide funding for organisations to develop their own customised CPC activities.
The majority of responses were from males and from registrants within the National Ambulance Service. This is unsurprising as the ambulance services in Ireland are provided, predominately, by the National Ambulance Service (NAS). In addition to the NAS, Dublin Fire Brigade provides ambulance services through twelve ambulances based throughout Dublin City. Both services are predominately male dominated.

CPC activities
This survey identified a number of useful topics and activities that could be considered for the purpose of CPC and has identified some areas of low CPC priority for registrants.

Our survey included 23 potential CPC activities (Table 2) and asked which activities participants believed were relevant/irrelevant. Practical hands-on, training using simulation manikins, team-based activities or e-learning followed by practical skills were preferred over non-practical/theory-type activities. Also, there were less negative responses regarding activities related to practical skills than to theoretical skills. A study with Irish APs reinforced the concept of practical-type learning as a preferred methodology and as an effective way of maintaining competence [6], indeed scenario-based simulations have been used since 2007 as part of routine continuing education programmes by some American emergency medical services [9]. Interactive methods, for the purposes of CPD, such as team-based learning and case-based learning, as compared to lectures, impart sustainable knowledge and lead to high satisfaction among participants [18]. Davis et al. [19] in their systematic review found that interactive and mixed educational sessions were associated with a significant effect on physicians’ performance, effected change in professional practice and, on occasion, healthcare outcomes.

The least relevant activities were associated with non-skills/practical, individually-based, passive activities: e-learning modules only and no related practice 36% (210), project work 27% (166), appraisal of journal publications 24% (147). There is an interesting anomaly

<table>
<thead>
<tr>
<th>Very relevant/Relevant = Relevant</th>
<th>Relevant</th>
<th>Not relevant</th>
<th>Total responses for question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responses</strong></td>
<td><strong>% of total responses</strong></td>
<td><strong>Responses</strong></td>
<td><strong>% of total responses</strong></td>
</tr>
<tr>
<td>Practical training scenarios</td>
<td>582</td>
<td>94%</td>
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<tr>
<td>Annual cardiac re-certification</td>
<td>566</td>
<td>92%</td>
<td>29</td>
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<tr>
<td>Access to e-learning followed by related practice</td>
<td>555</td>
<td>90%</td>
<td>11</td>
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<tr>
<td>Access to medical journals/Medical books</td>
<td>538</td>
<td>88%</td>
<td>17</td>
</tr>
<tr>
<td>Training on a simulation manikin</td>
<td>535</td>
<td>88%</td>
<td>25</td>
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<td>Attending courses accredited by PHECC</td>
<td>518</td>
<td>84%</td>
<td>30</td>
</tr>
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<td>Annual cardiac first response revalidation</td>
<td>517</td>
<td>85%</td>
<td>60</td>
</tr>
<tr>
<td>Evidence of current CPG compliance</td>
<td>489</td>
<td>80%</td>
<td>25</td>
</tr>
<tr>
<td>Mentoring others</td>
<td>483</td>
<td>79%</td>
<td>47</td>
</tr>
<tr>
<td>Major incident/Emergency exercises</td>
<td>480</td>
<td>78%</td>
<td>34</td>
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<tr>
<td>Regular practical assessments</td>
<td>458</td>
<td>75%</td>
<td>48</td>
</tr>
<tr>
<td>Working in a related hospital department</td>
<td>453</td>
<td>74%</td>
<td>64</td>
</tr>
<tr>
<td>Keeping a portfolio of CPC activities</td>
<td>441</td>
<td>73%</td>
<td>55</td>
</tr>
<tr>
<td>Relevant conferences e.g RESUS</td>
<td>405</td>
<td>66%</td>
<td>74</td>
</tr>
<tr>
<td>Lecturing/Teaching</td>
<td>403</td>
<td>65%</td>
<td>76</td>
</tr>
<tr>
<td>Appraisal with senior training officer (or above)</td>
<td>373</td>
<td>61%</td>
<td>92</td>
</tr>
<tr>
<td>Being a tutor</td>
<td>349</td>
<td>57%</td>
<td>95</td>
</tr>
<tr>
<td>Appraisal with a doctor/Medical supervisor</td>
<td>309</td>
<td>51%</td>
<td>115</td>
</tr>
<tr>
<td>Being an examiner</td>
<td>309</td>
<td>51%</td>
<td>116</td>
</tr>
<tr>
<td>Case study review</td>
<td>283</td>
<td>46%</td>
<td>114</td>
</tr>
<tr>
<td>Project work</td>
<td>223</td>
<td>37%</td>
<td>166</td>
</tr>
<tr>
<td>e-learning modules only and no related practice</td>
<td>203</td>
<td>33%</td>
<td>210</td>
</tr>
<tr>
<td>Appraisal of journal publications</td>
<td>188</td>
<td>31%</td>
<td>147</td>
</tr>
</tbody>
</table>

Demographics
The majority of responses were from males and from registrants within the National Ambulance Service. This is unsurprising as the ambulance services in Ireland are provided, predominately, by the National Ambulance Service (NAS). In addition to the NAS, Dublin Fire Brigade provides ambulance services through twelve ambulances based throughout Dublin City. Both services are predominately male dominated.
between appraising journal publications (24%) and having access to medical journals (88%). It is possible that some respondents may not critically assess the quality of journals but may still recognise the benefit of being able to access publications when seeking specific information. This is quite different to results seen from other professions who have tended to prefer attending conferences, lectures and reading of relevant journals [14,20] even though there is little evidence to suggest that attending conferences had any direct impact on improving professional practice [21].

Studies on cardiac nurses and Dietitians [14,22] have shown that journal reading was a popular preference and yet, for doctors, the effectiveness of continuous medical education (CME) increases as the intervention strategy becomes more active while activities classed as passive are not associated with changes in physician performance or patient outcome [21].

Model of CPC
Groups were split in relation to opinion on annual hours of CPC; 35% (194) believed that 21-40 hours, while 26% (146) believed 41-60 hours were adequate. 77% of the respondents (474) favoured a ‘mixed’ model approach for CPC with a similar amount supporting the idea of minimum standard requirements which involved evidence of patient care. This ‘mixed’ model approach would allow for a ‘compulsory’ element to the CPC requirements and an additional ‘voluntary’ allowance that is still required but would allow the registrant some flexibility in deciding which activities to choose.

The benefit of mandatory CPD in healthcare professions has been debated. O’Connor’s [23] study on motivating factors for nurses participating in continuing education (CPD) suggested that the mandatory nature of the education had little influence in motivating participation, while Lee et al. [24] found that 66% of Australian radiographers thought CPD should be voluntary. Tellingly, Friedman and Woodhead [25] suggested that those professional bodies utilising compulsory or mixed policies with respect to CPD were likely to be promoting CPD as a means of maintaining competence.

Regarding sanctions, 61% (487) agreed that the practitioner should not be allowed to re-register at that level while 39% (307) agreed that those practitioners who fail to meet the PHECC CPC requirements should be allowed to register at the level below their current registration level. This finding is higher than from some other healthcare professions: 42% of pharmacists surveyed [26] favoured sanctions yet few dietitians favoured disciplinary action for those who failed to meet the registration requirements [22].

Methodological considerations
While this first study of attitudes towards CPC among paramedics and APs in Ireland involved a national sample, we acknowledge some methodological considerations may limit generalisability. For instance, while we report data from 789 responses, this represented 43% of all registered paramedics and APs. Our study was limited to those with valid email addresses and clearly those for whom the subject area was a priority. Further research following the introduction of CPC for Irish paramedics and APs may expand upon these findings.

Conclusions
There is a paucity of research conducted with registered pre-hospital practitioners in Ireland. This study is the first to ascertain the opinions of paramedics and APs regarding CPC. This study further suggests that there is willingness on behalf of Irish paramedics and APs to engage with CPC, which is viewed as extremely important. Respondents considered it appropriate to link CPC with registration to practice and that there should be sanctions against those who do not meet CPC requirements.

The results of this survey demonstrate, at the very least, that emphasis will need to be placed on a compulsory ‘mixed’ model approach of CPC which includes evidence of patient contact and CPC activities that are practically orientated: practical training scenarios; annual cardiac recertification; e-learning followed by related practice; training on simulation manikins. Conversely, there is less interest in non-skills/practical, individual passive learning activities: e-learning alone and no related practice; project work, journal reviews. Somewhere between twenty to sixty hours of CPC activities per annum would appear to be acceptable to Irish practitioners as groups were split in their opinion: 35% (194) believed that 21-40 hours were adequate, while 26% (146) believed 41-60 hours were adequate. Arguably, the Regulatory Body (PHECC) might initially target the lower requirement with an expectation of 21-40 hours which is in-line with the small majority, and subsequently modify this requirement upwards following a review of the first cycle of CPC.

Competing interests
The authors declare that they have no competing interests.

Authors’ contributions
SK conceived of the study and was involved in the design, collection of data, data analysis, drafting the manuscript. WC and CD (principal investigator) were involved in the conception of the study, data analysis and interpretation and drafting the manuscript. All authors read, reviewed the manuscript critically for intellectual content, and approved the final manuscript.

Acknowledgements
The authors thank the registered paramedics and APs who responded to the questionnaire. Thanks also to Dr Helen Purtill of the Statistical Consulting Unit, University of Limerick for her comments on the design and results of the survey.

Received: 18 October 2013 Accepted: 25 February 2014 Published: 2 March 2014
References

12. Sheehan KB: E-mail survey response rates: a review. JCMC 2001, 6:0.


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CONTINUOUS PROFESSIONAL COMPETENCE

A guide for Emergency Medical Technicians registered with the Pre-Hospital Emergency Care Council

November 2013
### Abbreviations

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<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>ACR</td>
<td>Ambulatory care report</td>
</tr>
<tr>
<td>CPC</td>
<td>Continuous professional competence</td>
</tr>
<tr>
<td>CPG</td>
<td>Clinical practice guidelines</td>
</tr>
<tr>
<td>DFB</td>
<td>Dublin Fire Brigade</td>
</tr>
<tr>
<td>EMT</td>
<td>Emergency medical technician</td>
</tr>
<tr>
<td>NAS</td>
<td>National Ambulance Service</td>
</tr>
<tr>
<td>NQEMT</td>
<td>National Qualification in Emergency Medical Technology</td>
</tr>
<tr>
<td>PCR</td>
<td>Patient care report</td>
</tr>
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</table>
| RI           | Recognised institution  
(an organisation we have accredited to provide training) |
| PHECC        | Pre-Hospital Emergency Care Council |
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About this document

The Pre-Hospital Emergency Care Council (PHECC), has provided this document for registered Emergency Medical Technicians.

Throughout this document:

- ‘we’ refers to us, the Pre-Hospital Emergency Care Council
- ‘you’ refers to an emergency medical technician on our register
- ‘registered practitioners’ also refers to Emergency Medical Technicians registered with us

People who might find this document useful:

- a registrant who wants to find out about CPC
- a PHECC-recognised institution or CPG approved organisation
- an employer thinking about CPC and how they might help an EMT with CPC
- a person or organisation thinking about offering CPC activities to registrants

Acknowledgements

Project Leader: Mr Shane Knox, Post-Graduate Student, Graduate Entry Medical School, University of Limerick, Ireland.

With: Professor Colum Dunne, Director of Research, Graduate Entry Medical School, University of Limerick, Ireland.
Pre-hospital emergency care services in Ireland have developed in line with international best practice over the last few years. The introduction of clinical practice guidelines, associated medications that can now be administered by registered practitioners, and the establishment of a register of pre-hospital practitioners, are just some of the initiatives that have helped to advance the role of the practitioner and the profession, both nationally and internationally.

Regulated health professions, including the pharmaceutical, medical and nursing professions, have already developed systems of Continuous Professional Development (CPD). We need to maintain this impetus and further enhance pre-hospital practitioner development if the profession is to develop in line with other healthcare professions.

One explanation of the purpose of Continuous Professional Development, as described by the Health Professions Council of South Africa, is:

“...to assist health professionals to maintain and acquire new and updated levels of knowledge, skills and ethical attitudes that will be of measurable benefit in professional practice and to enhance and promote professional integrity. The beneficiary will ultimately be the patient/client” (Africa, 2009).“

There are many (probably too many) definitions and related terms associated with CPD. Some of these terms, such as continuous medical education (CME), which relates to medicine, are specific to a profession. To prevent possible confusion and to focus specifically on continuous improvement, we have adopted the term ‘continuous professional competence (CPC)’. This term is also used in the PHECC Education and Training Standards.

Guided by the principle of ‘beneficence’, regulated healthcare professions recognise the need to update and develop the knowledge, skills and attitudes that support professional, competent practice through the implementation of a continuous professional competence scheme. This protects the public interest, meets the requirements of the Register and promotes the profession.

“...to provide net medical benefit to patients with minimal harm - that is, beneficence with non-maleficence. To achieve these moral objectives health care workers are committed to a wide range of prima facie obligations... Hence we need rigorous and effective education and training both before and during our professional lives” (Gillon 1994).
The Pre-Hospital Emergency Care Council and CPC

The initial objective is the implementation of a CPC model to address current requirements for PHECC registration

In November 2010, we began a new project to develop and put into place a system of continuous professional competence for all our registered pre-hospital practitioners.

Our initial aim will be to put into place a system of CPC to address current requirements for registration with us. This will make sure there is consistency between all registered practitioners, and will provide a platform that we can expand on across the country.

Anecdotal evidence from other countries suggests that although CPC has appeared in response to the need for regulation, it has paid less attention to the job-specific requirements for professionals in whatever their field of practice. Because of this, and as a first step, we have used an electronic survey to allow all registered EMT practitioners to influence the setting up of an Irish system for pre-hospital continuous professional competence.

We have consulted with EMT representative groups across the country for feedback on the CPC model. Focus groups, made up of registered practitioners, have been an important part of the process. We have encouraged registered practitioners at every level to take part in and influence the project through the consultation process.

Developing an appropriate CPC system specifically for pre-hospital professionals will benefit the public we protect, the patients you treat, and add significantly to the development of the profession itself.

Remember, this is the first model of CPC for EMTs and it will be up to you, and others involved, to develop and change this initial model so that we end up with a robust CPC system that meets everyone’s needs.

CPC ensures that there is a minimum national standard of registered EMTs who can provide quality care to patients.

Do not view the process of CPC as a difficult one. It’s not designed to be. It really is about:

- Documenting the things you do regularly
- Encouraging you to reflect
- Recording and responding to CPC as a healthcare professional
- Whether you are an employee or a volunteer you are a registered pre-hospital practitioner on a professional register and CPC is an important part of your registration.
Responsibility: Emergency Medical Technicians

“a registrant shall participate in ongoing CPD (CPC) requirements of relevant division of the Register”

Section 3.2 Code of Professional Conduct and Ethics (Pre-Hospital Emergency Care Council).

Pre-hospital practitioners, like other regulated professions, have a responsibility to commit to their own personal and professional development. Section 3.2 of our Code of Professional Conduct and Ethics says that a registrant will ‘participate in ongoing CPD (CPC) requirements of the relevant division of the Register’.

**November 2013 data collection starts for December 2014**, EMTs registered with PHECC will have to maintain an up to date learning portfolio of Continuous Professional Competence (CPC) that records CPC activities. This can simply be a folder in which to keep certificates or other evidence such as case reviews, important learning points, and so on. See page 13 for a description of CPC learning portfolios.

CPC points are based on the principle that one hour of CPC activities equal 1 CPC point.

We do not want to limit the activities you take part in as part of your CPC requirements. Allowing you access to all relevant programmes or activities should encourage you and help you to meet your CPC requirements.

You must build up **18 CPC points a year (54 CPC points over a three-year period)**. This gives you some flexibility in developing your CPC. Ideally you will gain 18 CPC points each year. However, if personal reasons mean you cannot gain 18 CPC points in one year, the three-year period means you can still meet your CPC requirements by making up for this in the other years.

**Does CPC apply to all EMTs?** Yes, all EMTs must meet the same PHECC CPC requirements. Please contact your own organisation for specific administrative and organisational requirements.

**Remember:**
Even though you are registered as an EMT, you may only practise in Ireland (as a member or employee) of a CPG approved service provider/organisation. PHECC approve/licence organisations to implement our CPGs.

**Reviews to make sure portfolios meet CPC requirements (compliance review):**
You don’t have to send us your portfolio for inspection, but we will review a random selection of EMT portfolios to make sure they meet CPC requirements. Each year, as part of our registration process, you will sign a declaration stating that you meet the CPC requirements and we will then issue your EMT licence. We intend to align the current system so that every EMT will re-register on a single day in 2014.
Developing staff or members through CPC will no doubt benefit an organisation. The organisation may facilitate the EMT by providing some CPC activities or by allocating time to participate in such activities. For example, organisations may help you meet your CPC requirements by providing opportunities through courses, case reviews, mentoring and so on.

Some organisations may ask their members (or staff) to carry out extra activities – this is a matter for your organisation. However, it is important to note that the requirement to maintain registration is your responsibility. To keep up your registration – you must register directly with us.

Any relevant training organisation can provide related programmes of learning that will automatically count as CPC points.

At the moment, training organisations do not need to send programmes to us for accreditation. We consider all programmes, developed and conducted with reference to a specific body of knowledge and or clinical practice in an area of practitioner level care acceptable for CPC, with one hour counting as one point.

After you complete a programme provided by a training organisation they must issue you with a certificate for your own portfolio.

There are many training organisations who provide related training that would be relevant for CPC including PHECC Recognised Institutions (RIs). You can find a list of PHECC Recognised Institutions at: www.phecit.ie

You will always register directly with us. If you keep to our CPC requirements and meet any additional registration requirements then you will be entitled to re-register.

However, remember that there are many other ways of gaining CPC points other than completing programmes! (See page 11 for extra activities you can gain CPC points for).
Continuous professional competence requirements

18 CPC points a year

The 18 CPC points a year (54 over a three-year period) are ideally accumulated over a 12-month period but a three-year span allows for you to compensate, in exceptional circumstances, should you have reason to do so. However, to maintain registration you must show evidence of how you gained your 18 CPC points per year or state why you were unable to meet the requirements.

CPC works using a system of points and is divided into two sections:

- **Section 1**: Practice status
- **Section 2**: Compulsory requirements including self-selected options

Section 1: Practice Status

Section 1 clarifies your practice status and the environment in which you practice. There are 3 parts to this section.

1) **A statement of context** - This is an introductory statement explaining the context in which you collect evidence and record experience as a practicing EMT. You must include this statement of context as the first part of your learning portfolio.

2) **Evidence of at least 12 patient contacts per year**

3) **Evidence of your current CPG status**
Section 2: Compulsory requirements

All EMTs must complete and show evidence of compulsory CPC. This is broken down into the following parts.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CPC POINTS</th>
<th>EXTRA INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac First Response (CFR)</td>
<td>2</td>
<td><strong>CFR Advanced</strong> (certification is valid for two years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>CFR Refresher</strong> (one year after initial certification)</td>
</tr>
<tr>
<td>Mentor - Mentee and/or Lecturer - tutor - instructor</td>
<td>4</td>
<td>Mentoring a student or being mentored on any experiential/operational ambulance, response vehicle placement</td>
</tr>
<tr>
<td>Reflective practice and/or Case studies</td>
<td>4</td>
<td>A document containing key learning points (2 CPC points per documented evidence) and/or a Case study on an incident, condition or injury you have encountered (2 CPC points per case study)</td>
</tr>
<tr>
<td>Self-selected options from: Courses – seminars - related activities (See Page 11 for examples)</td>
<td>8</td>
<td>Must demonstrate a direct relevance to the EMT standards and/or practice</td>
</tr>
<tr>
<td><strong>Total Minimum CPC points</strong></td>
<td><strong>18</strong></td>
<td>CPC points required per year (Minimum of 54 over a three-year period)</td>
</tr>
</tbody>
</table>
Examples of courses and related activities (additional options)

You can gain the self-selected 8 CPC points for the ‘Courses, seminars and related activities section’ listed previously. A combination of some of the activities listed below will allow you to accumulate your required 8 CPC points. The choices listed are deliberately wide. This category allows you to take part in activities that are relevant to you personally and are specific to your own learning and development needs.

You must gain 8 CPC points from these self-selected options each year as part of the overall compulsory CPC requirements.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>CPC POINTS</th>
<th>EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC related training programme provided by training organisations or programmes accredited by other professional organisations (for example, An Bord Altranais, Irish College of General Practitioners (ICGP) and so on)</td>
<td>1 point for each hour</td>
<td>Certificate</td>
</tr>
<tr>
<td>Case study</td>
<td>2 points</td>
<td>Case study on an incident, condition or injury you have encountered</td>
</tr>
<tr>
<td>Reflection on the incident</td>
<td>2 points</td>
<td>A document containing the main points you have learned</td>
</tr>
<tr>
<td>Seminars and conferences</td>
<td>1 point for each hour</td>
<td>Details of the seminar you have been to with a review of the key points you have learned</td>
</tr>
<tr>
<td>Programmes such as ACLS, PALS, PHTLS, PEPP, ATC, MIMMs, ITLS, Wilderness-EMT, ATLS, AMLS and so on</td>
<td>1 point for each hour</td>
<td>Certificate</td>
</tr>
<tr>
<td>Journal article review</td>
<td>2 points</td>
<td>Critical appraisal of a journal article</td>
</tr>
<tr>
<td>Electronic learning/on-line learning – related to practice</td>
<td>1 point for each hour</td>
<td>Printed certificate from site</td>
</tr>
<tr>
<td>Mentoring a student or being mentored on any experiential/operational ambulance, response vehicle placement.</td>
<td>1 point for each hour</td>
<td>Documented evidence of placement, signed by a paramedic or advanced paramedic (or advanced paramedic period)</td>
</tr>
</tbody>
</table>

The list shows examples of some CPC activities. It allows you to build evidence of your CPC activities in-line with your own needs and preferred learning style.

We encourage you to take part in any relevant CPC programmes or activities. It is important that you keep all certificates for CPC activities to help build your portfolio. You can then use this portfolio to support your own development plan and can use it as independent evidence of your CPC activities at a later stage.
What is a learning portfolio?

The learning portfolio is a tool to support practitioners to commit and engage in lifelong learning, long after the award of National Qualification in Emergency Medical Technology (NQEMT) and Registration has been achieved (Pre-Hospital Emergency Care Council 2011).

A professional development (learning) portfolio is a collection of material, made by a professional that records, and reflects on, key events and processes in that professional’s career (Hall 1992). This means you should record, reflect on and keep evidence of any activities that relate to CPC. In doing this you will have evidence of your experience.

It is your responsibility to maintain your portfolio and it is your property. In order to maximise the learning potential of portfolio development, the learner has to take responsibility for its creation, maintenance and appropriateness for purpose (Challis 1999).

It is important to realise that there is no such thing as a standard portfolio. A portfolio can be either electronic or in hard copy. Portfolios are as diverse as their possible content and can be adapted for various purposes (Webb 2002). Your purpose in developing your portfolio is to record evidence of your learning experiences.

The portfolio allows you to use a range of learning styles depending on your preferences.

Here are some important things that are generally recorded in a portfolio.

- **The experience** – what has happened, what you have done, seen, written, and so on.
- **The learning** – the discovery that what you have recalled has significance for doing or changing things in the future.
- **The evidence** – where you show how you are applying what you have learned in an appropriate context.
- **Learning needs** – where you identify where it would be appropriate to go next.
- **Learning opportunities** – an educational action plan identifying ways in which you might meet your learning needs (Redman 1994).

A portfolio is somewhere for you to start. You can collect certificates and material related to your profession. This is then linked to your learning experience by demonstrating reflection and documenting what you have learned or how you might do something better the next time.
Reflection

“Reflection appears to be the ‘engine’ that shifts surface learning to deep learning and transforms knowing in action into knowledge in action.”

(Schon 1983, Moon 1999).

Reflection allows us to transform current ideas and experiences into new knowledge and action (Lockyer et al. 2004)

The portfolio is not just about retaining copies of certificates. It is about showing evidence of learning and how you learned from various related activities. Learning that occurs in the context of the daily workplace (or while you are practicing as an EMT within your organisation) is far more likely to be relevant and reinforced, leading to better practice (Davis 1995).

Portfolios are not a panacea, but they are a useful tool which can be used to plan and record learning and incorporate personal development plans to form the basis of appraisal or peer review (Boulay 2000) and as such should include evidence of reflection on patient management.

The most frequent stimulus for learning is reading the medical literature, followed by management of a current patient or problem (Campbell 1999).

For example, you could have managed a patient with a condition that you have not heard about. After reflecting on the incident you decide, as part of this review, to search for information on the condition. Your research should reveal perhaps, what causes the condition, what type of patient it may present in, what are the signs and symptoms, medications used and management of the condition. Now that you understand what this condition is, at the very least, it will give you an idea on the typical presentation should you encounter the same condition again.

One suggested example of reflecting on your management of a patient is by asking yourself:

• What went well – so that you know what might work well again?

• How did the patient respond to your management or interventions, in accordance with the CPGs?

• What would I like to change in relation to the management of this patient, but within my scope of practice?

• What was the patient’s chief complaint?

• Are there other conditions similar to this? If so, what are they?

• Can I review the ‘chief complaint’ by doing some research into it?
After answering these questions you should:

- List key learning points that demonstrate what you have learned from this patient encounter
- Finally, document this in your portfolio. This shows evidence of reflection.

Because you need to reflect on your practice, you should include examples that show how you have learned and improved your practice. A portfolio that seems to show that everything is perfect all the time might arouse suspicion: none of us can honestly say that everything we do works out perfectly. Instead, show how you have responded to problems that have presented themselves and evaluate how successful your response has been (Brigden 1999).

Professional competence is more than factual knowledge and the ability to solve problems with clear-cut solutions: it is defined by the ability to manage ambiguous problems, tolerate uncertainty, and make decisions with limited information (Schon 1983).

Remember, **CPC is more than attending courses or conferences** and there is as much benefit to be gained by reflecting on patient encounters. If you can be self-critical and honestly identify what you might change then you have learned. Simply document it and retain it in your Portfolio.

> “To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all” (Osler 1945).

**Patient privacy and confidentiality**

You must make sure that you keep to the requirements for patient privacy and confidentiality. You cannot help referring to patients when even briefly recording incidents. However, you must not include any information that could identify patients or carers by their name, address, job title or in any other way. This would be breaking the law relating to confidentiality under data protection legislation (*Data Protection Act 1988, Data Protection (Amendment) Act 2003*) and would also be contrary to point five of our Code of Professional Conduct and Ethics – ‘Maintain Confidentiality’ (Pre-Hospital Emergency Care Council). The best approach is to refer to a patient as either ‘a male’ or ‘a female’.
You and Registration

- CPC for EMTs commences in November 2013 when data collection starts. It is your responsibility to ensure you comply with PHECC CPC requirements.
- The responsibility for registration is yours and the relationship for registration is between you and PHECC.
- Each year, as part of our registration process, you will sign a declaration stating that you meet the CPC requirements and we will then issue your EMT practitioner licence.
- You must maintain a learning portfolio and accumulate 18 points a year (54 CPC points in a 3-year cycle).
- Your learning portfolio must include:
  - A statement of context
  - Evidence of at least 12 patient contacts per year
  - Evidence of your current CPG status
  - Evidence of how you achieved your 18 Compulsory CPC points each year (see page 10)
  - Ensure patient privacy and confidentiality when recording information for CPC.

Recognition of courses etc. for CPC

- Any training organisations can provide programmes of learning that will automatically count as CPC points.
- Training organisations or course providers do not need to send programmes to us for accreditation.
- Every programme provided for CPC by training organisations should provide a certificate for the EMT.
- Any accredited related programme provided by other healthcare professions for the purposes of CPD may be considered as CPC points.

Summary: Key points

“Professional competence is more than factual knowledge” (Schon 1983).
CONTINUOUS PROFESSIONAL COMPETENCE
A guide for Emergency Medical Technicians registered with the Pre-Hospital Emergency Care Council
November 2013