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Foreword

Education is one of the keys to success in most walks of life. While this is not the exclusive component of a paramedic's professional practice, it represents a fundamental and significantly important ingredient to equip them for the challenges presented by healthcare delivery in the 21st century.

The College of Paramedics is totally committed to leading the development of the paramedic profession. To this end it is essential that all those who are involved in the delivery of paramedic education and training programmes are fully aware of the complexities of the profession and the responsibilities paramedics discharge in delivering a broad spectrum of healthcare.

Following the Health Education England (HEE) implementation of the Paramedic Evidenced-Based Education Project (PEEP) Steering Group, an Independent review of the Curriculum Guidance was undertaken. Members of the Education Advisory Committee met to review the independent body recommendations and introduce these into the 3rd Edition (Revised) of the Paramedic Curriculum Guidance. We firmly believe that this document provides the best advice available for those delivering paramedic education and training, and that adherence to it by education providers and employers of new registrants will enhance the quality of paramedical services throughout the UK.

In addition, and perhaps most importantly, this guidance can give service users – wherever they are in the country – the assurance that paramedics have been prepared for practice through an effective collaboration that has involved education providers, employers and the paramedics' professional body.

As the College of Paramedics continues to grow it is increasingly able to play a major part in the development of the paramedic profession. We believe that the profession should be led by paramedics for the benefit of patient care and that, in order for the profession to continually improve, we must continue to advocate, engaging in positive dialogue with our healthcare colleagues and all stakeholders involved in paramedic development.



***Professor Andy Newton, QAM, FCPara
Chair of the College of Paramedics
June 2015***

Section **A**

Introduction and Background to Paramedic Development

A1 Introduction

This third edition (Revised) of *Paramedic Curriculum Guidance* has been prepared to provide higher education institutions (HEIs) and other stakeholders with a comprehensive curriculum for the education and training of paramedics throughout the UK. It represents an important contribution by the professional body to the quality framework used to prepare paramedics as they move through education, training and the early stages of professional practice.

To enable educational providers, employers and the regulatory body – the Health and Care Professions Council (HCPC) – to carry out their work effectively, and on a fully informed basis, the paramedic curriculum requires regular updating to reflect the rapid evolution of the paramedic role.

The *Paramedic Curriculum Guidance* has developed rapidly from the College of Paramedics first and second editions^{1,2}, which reflected the transition to higher education and ongoing development of the profession. This third edition (Revised) brings with it some important changes. Firstly, the curriculum guidance will be published separately to the post registration curriculum since the latter requires more frequent review and updating than the former. Secondly, it acknowledges the expansion in the breadth of care delivered, with particular reference to the clinical skills and competencies of the paramedic who assesses and manages patients requiring acute, chronic and specialist services. Education providers will recognise that the curriculum guidance has been significantly revised to reflect the expanding scope of practice of paramedics, specifically at registration level. It also contains guidance in relation to the leadership, patient safety and support necessary for the development of effective registrants.

The guidance aims to assist HEIs and potential future employers by ensuring that student paramedics and newly qualified registrants have the opportunities to better adapt to their new professional role in a supportive environment that increases their confidence and promotes autonomous practice, while minimising the risk of unsafe practice. This supportive period, referred to as ‘preceptorship’³, should be a vital transition phase for newly registered practitioners to further develop their confidence and competence in practice.

The curriculum guidance does not stand alone in providing a curricular framework for paramedics. Closely linked to this work are other important documents that strongly influence the standards and quality of paramedic education:

- HCPC *Standards of Proficiency – Paramedics*⁴,
- HCPC *Standards of Education and Training*⁵,
- HCPC *Standards of Conduct, Performance and Ethics*⁶,
- HCPC *Guidance on Conduct and Ethics for Students*⁷,
- Quality Assurance Agency (QAA) Paramedic Science Benchmark Statement⁸,
- QAA *Framework for Higher Education Qualifications in England, Wales and Northern Ireland*⁹,
- QAA *Framework for Qualifications of Higher Education Institutions in Scotland*¹⁰.

Importantly, the College of Paramedics' *Paramedic Curriculum Guidance* complements statutory requirements by providing guidance from the professional body perspective. In this sense the College of Paramedics acts as the guardian of the uniqueness and distinctiveness of the profession. It also enables the experience and expertise of paramedics to be directly assimilated into document form.

This curriculum guidance will assist HEIs in providing the most appropriate curriculum through which paramedics can be prepared for registration and practice. This document will assist in HCPC approvals¹¹ and the College of Paramedics' endorsement processes to ensure quality and consistency, and contribute to assurances that paramedical services throughout the UK are based on the same rigorously designed programme of education and training. In addition to the guidance provided by this document, the College of Paramedics now provides practical advice and a further layer of profession-specific quality assurance to educational institutions through its partnership and endorsements schemes (see Appendices A and B)^{12, 13}.

Patient safety has always been an important aspect of paramedic practice, be it on an individual patient basis or as part of a major incident. The College has incorporated this aspect of practice into the curriculum (see Section C 8)¹⁴. This includes guidance from the National Patient Safety Agency (NPSA)¹⁵, the Protecting Vulnerable Groups (PVG) Scheme of Disclosure Scotland¹⁶, the five domains from the Operating Framework for the National Health Service (NHS) in England 2012/13¹⁷ and the key perspectives of the multi-professional patient safety curriculum from the World Health Organization (WHO)¹⁸, which advocates best practice in healthcare.

It is important to recognise the contributions made to the development of the third edition (Revised). Members of the College of Paramedics and their colleagues in the wider paramedic community have worked voluntarily and tirelessly to produce

this guidance. See Appendix C – Part A: for details of the curriculum development team¹⁹. Following the independent review of the document, further review of the Paramedic Curriculum Guidance has been undertaken. See Appendix C – Part B: Curriculum Review Team²⁰.

In summary, this third edition (Revised) expands on previous editions, not only by significantly updating the core curriculum but through the inclusion of new sections on clinical leadership, preceptorship and patient safety.

A2 Historical Perspectives of Paramedic Development

The first UK ‘paramedic’²¹ cardiac scheme started in Brighton in the summer of 1971 under the stewardship of Dr (now Professor) Douglas Chamberlain, a cardiologist. Dr Peter Baskett, a consultant anaesthetist followed with another widely acclaimed scheme in Bristol the following year, and other pilot schemes spread across the UK, albeit with small numbers of trained personnel, during the early 1970s.

The focus and content of these schemes, and the many others that followed, often differed according to local medical opinion, but the original projects shared the essential features of strong medical direction and absolute commitment from the ambulance staff that volunteered and were subsequently recruited to the schemes. Enthusiasm and a pioneering spirit characterised these early projects and proved to be important ingredients to the considerable local success that followed. In 1973 the NHS Reorganisation Act, more fully implemented on 1 April 1974, transferred all ambulance services, including those services with experimental paramedic schemes, from local authority control to the NHS.

Following this transition there was considerable discussion regarding the merit of ‘paramedics’ or, as it was referred to at the time, ‘extended trained ambulance staff’. In 1979 Dr Bernard Lucas of the Medical Commission on Accident Prevention (MCAP) considered the potential of ambulance staff to undertake an expanded ‘paramedic’ type role. Dr Lucas’ committee expressed the opinion that, ‘as ambulance staff were frequently the first to arrive at an accident scene, it would be logical to train them in advanced resuscitation techniques’. This recognition that the plagues of the late 20th century – heart disease and traumatic injury – could benefit from treatment before the patient reached hospital played a part in creating conditions for change.

The Department of Health commissioned an analysis into the potential benefits of such training. This research, conducted by the University of York’s Institute for Research in the Social Sciences was published in 1984 and proved extremely

positive, providing a compelling and economically sound vision for extended paramedic training. Despite some resistance, acceptance of the need for more highly trained ambulance crews grew rapidly and led to the Department of Health establishing a UK-wide pilot scheme in 1985 under the national leadership of Roland Furber at Banstead in Surrey, which was ultimately adopted by all UK ambulance services. This initiative brought the many disparate schemes in operation together into a standardised package of training taught within regional ambulance training schools and involving their local hospitals.

The national ambulance dispute in the winter of 1989–1990 concluded with a clear call for further increases in paramedic training schemes, and the recognition of a formal payment for the extended scope of practice and shift away from its voluntary basis of the previous 20 years. The paramedic had been established and was starting to flourish under a unified NHS Training Directorate (NHSTD) scheme. Extended training was now in the mainstream, and the weight of the extra skills required was now causing several educationalists to question the quality of the underpinning knowledge base, to continue the building programme into the next century.

During the mid-1990s two higher educational establishments (Hertfordshire and Coventry) formed partnerships with ambulance services (London and Warwickshire) to develop degree schemes in paramedic science, setting the future pattern of development that will see a much wider role for HEIs in the preparation of paramedics.

After the registration of paramedics with the Council of Professions Supplementary to Medicine (CPSM)²² in 1999, which was shortly succeeded by the Health Professions Council (HPC), paramedics became the 12th group of health workers to become registered Allied Health Professionals (AHPs). This important evolutionary step had the effect of accelerating the professionalising process and ‘raising the bar’ in setting national minimum standards for education and training that complied with established academic levels. In 2000, the British Paramedic Association (BPA) was established as the professional body for paramedics and later became engaged in collaborative work with the HPC, the Joint Royal Colleges Ambulance Liaison Committee (JRCALC), the QAA and others to help develop the instruments and reference points that would enable the profession to move forward, including the curriculum guidance documents.

In 2000, JRCALC, under the chairmanship of Professor Chamberlain in partnership with the Ambulance Service Association, created the Practitioner in Emergency Care (PEC) role. The rationale for this development was based on the recognition that the demands being placed on ambulance services had changed from a traditional view that all 999 calls represented hyper-acute emergencies to one where many less serious ‘undifferentiated’ primary care type cases dominated the case mix. The role of the PEC was designed to upskill the paramedic workforce and

support modernisation efforts, moving towards an ambulance service that could evolve into a 'mobile healthcare service'. The PEC contribution to this modernisation was described thus: 'The needs of patient care and of the service could be best met by a higher level of paramedics, perhaps 30 percent of the total.'

This expanded pre-hospital care role was to have further development in patient assessment, history taking and clinical decision making along with some advanced pharmacology to pave the way for a new breed of paramedic. Soon after this, the NHS Modernisation Agency (later to transition itself into Skills for Health) ran with the idea and further developed the emergency care practitioner (ECP)²³ role, testing the entrance pathway to include appropriately experienced and trained nurses and other AHPs.

In 2003, the same year as the introduction of the regulatory body (then the HPC), the government published *Ten Key Roles for AHPs*²⁴ in order to formally clarify that AHPs, including 'paramedics' should be the first point of contact for patient care, with the ability to order diagnostic tests, confirm differential diagnosis, prescribe medicines, discharge patients, make referrals to other appropriate care pathways, teach others and engage in health promotion for our client base.

This theme of a widening role for paramedics received official support in 2005 with the Department of Health report *Taking Healthcare to the Patient*²⁵, which included some recommendations that encouraged the expansion of the paramedic role to meet emerging patient needs.

Further interpretation and implementation of this new role by the NHS Modernisation Agency proved inconsistent, however, and led to the development of the ECP role²³; this was designed to be a more generic practitioner, drawn from a wider range of clinical staff, including nursing, but it proved somewhat problematic in relation to paramedics as the title did not match regulation requirements.

Health services in Wales and Scotland sensibly avoided using the ECP term. The College of Paramedics, together with the regulator, therefore made an appeal for clarity, which was supported in the Department of Health *Taking Healthcare to the Patient* 2²⁶ policy document, which discourages the use of such inappropriate titles. Today practitioner job titles such as student paramedic, paramedic, specialist paramedic (roles in urgent and emergency, and critical care), advanced paramedic and consultant paramedic are favoured as these harmonise with the needs of the paramedic curriculum guidance and competence framework².

More roles are likely to emerge in the next few years as paramedics become ever more ubiquitous in the healthcare system, supported and enhanced with greater post-registration knowledge and skills, and enabled by academic graduate qualifications. Indeed, paramedics are now found in the majority of industrialised

countries, and the UK can be rightly proud of producing some of the best-educated paramedics in the world, who have the knowledge, skills, attitudes, aptitudes and expertise to play an increasingly important part in the delivery of integrated healthcare in the 21st century.

The expansion of several specialised and advanced paramedic levels, such as those articulated later in the document, has naturally caused employers to revisit the role of the non-registered assistant and support roles that will partner paramedics of the future as an established ‘crew’, and these are currently under final development. One of the roles that has emerged is the emergency care assistant (ECA). This role is designed to carry out a fully supportive role to the registered paramedic. They are not responsible for direct patient care but will be able to work under the direct supervision of a paramedic.

During the past 40 years paramedics have developed from an experimental idea in the UK involving a few enthusiastic ambulance staff supported by visionary medics to a situation where the future for paramedics and their place within the healthcare landscape is now well established and flourishing. During most of this short history their primary purpose has been firmly rooted in providing emergency care, and this role itself has now grown to incorporate the assessment and management of undifferentiated cases traditionally within the province of primary care.

The clinical scope of practice and operation for paramedics within the UK has changed radically and continues to evolve at a rapid pace, with greater emphasis on critical decision making, treatment and management, with referral – if required – to an appropriate pathway rather than the historical focus on transportation to an accident and emergency department. This transition has followed the expansion of paramedic clinical capability and responsibility and has required a fundamental change in focus to one that is more heavily rooted in unscheduled and urgent care rather than in the life-threatening and critical emergency environment with which paramedics have historically been associated.

There is now a much greater emphasis on critical decision making and a greater responsibility for appropriately assessing patients to enable effective evidence-based decisions on where patients are best managed or referred to within the healthcare system.

The clinical ramifications of these changes are substantial, both operationally and in regard to professional issues for paramedics, on whom a range of increasing responsibilities fall. In reality this evolution in the role has been led by patient demand and reconfigurations within the wider NHS, particularly those that have affected general practice, including the amendments to the contractual obligations of GPs. All of these changes have taken place against a background of escalating 999 call volumes, which have increased from approximately one million in 1966 to

nine million in 2013–2014 throughout England²⁷, and over 600,000 calls in Scotland, 395, 528 calls in Wales, and 119,890 emergency journeys in Northern Ireland in 2014.

A3 The Paramedic in Context

Paramedics are first-contact AHPs²⁴. This requires them to have the appropriate underpinning knowledge, competencies and clinical practice experience to provide appropriate assessments and treatment, and to implement appropriate referral, management or discharge plans for their patients. These plans should be developed through a partnership approach and address patients' specific requirements. Unlike traditional modes of healthcare delivery, this may not require conveyance of patients to hospital but may require the paramedic to utilise alternative care pathways.

The College of Paramedics recognises that paramedics are increasingly employed by organisations other than NHS ambulance trusts. Paramedics can be found working in the armed forces, the independent and private sectors, and in other non-ambulance service foundation trusts such as primary and acute care trusts, GP services, minor injury units (MIUs), telehealth and telecare services, and alternative care pathway provider services.

Paramedics are not isolated from the changes experienced in other healthcare settings and, like other providers, are likely to see an increase in the incidence of acute and chronic illnesses, dementia, mental health issues and end of life care (EoLC) in the patients they attend. The workload of paramedics is predominantly emergency and urgent undifferentiated healthcare requests, ranging from life-threatening to a high proportion of non-life-threatening conditions. Traditionally, high-acuity medical illness and traumatic injuries account for approximately 10 percent of emergency calls received by an emergency ambulance service, although serious trauma (ISS >15) represents less than 1 percent of the 999 workload according to the National Audit Office²⁸. This presents clinical challenges to paramedics, who have to deal with problems across such a diverse range of conditions. A typical range of the top 25 emergency responses responded to by an ambulance service is illustrated in Box 1.

In order for paramedics to provide safe and efficient healthcare for such a diverse range of patients, the College of Paramedics is supportive of comprehensive paramedic skills that include the ability to assess, diagnose, prescribe, treat and refer patients to the most appropriate pathway using medical models and, if applicable, discharge. It is also supportive of opportunities to develop extended scopes of practice, as illustrated in the following case examples:

**SECamb Top 25 Emergency Responses by Problem Type, % of Total
(August 2013 to July 2014)**

EMERGENCY RESPONSES	AUGUST 2013–JULY 2014	
Problem Text	Count	% of Total
NHS 111	80405	12.08%
Falls <12ft	60025	9.02%
Chest Pain/Cardiac Prob	55749	8.37%
Trauma	50891	7.64%
999 HCP	49025	7.36%
Generally Unwell	42085	6.32%
Breathing/ENT Problems	38852	5.84%
Limb/Pain Injury	30143	4.53%
HCP Admission 120 minutes	29997	4.51%
Stroke/Neurological	24324	3.65%
Unconscious/Faint	20988	3.15%
NHS 111 (Manual Entry)	19632	2.95%
Mental Health Issues	16978	2.55%
Fitting	15616	2.35%
Bleeding	15202	2.28%
Minor Ailment/Injury	13263	1.99%
Back Pain	11715	1.76%
Abdominal/Flank Pain	11638	1.75%
Cardiac/Respiratory Arrest	7820	1.17%
HCP Admission 240 minutes	7123	1.07%
Diabetic Probs	6181	0.93%
HCP Admission 60 minutes	4694	0.71%
RTC – Moderate/Major Injury	4483	0.67%
Assault	4401	0.66%
Alcohol Intoxication/Related	4395	0.66%

Box 1: reproduced courtesy of South East Coast Ambulance Service NHS Foundation Trust (SECamb)²⁹.

SECamb Top 25 emergency responses by problem type, percentage of total calls: August 2013 – July 2014.

A3.1

CASE EXAMPLE

Paramedic

An emergency call is received from a 65 year old complaining of chest pain and difficulty in breathing. On arrival the paramedic finds the patient lying on a sofa, sweating, nauseated and extremely anxious about their pain.

The paramedic undertakes a thorough systematic assessment and examination of the patient while their colleague obtains a 12-lead electrocardiogram (ECG). This information allows the paramedic to determine that the patient is experiencing an acute coronary syndrome, specifically an ST-elevated myocardial infarction (STEMI). Using their clinical knowledge the paramedic determines that the patient would be most appropriately treated by direct referral to a specialist cardiac unit for primary percutaneous catheterisation (PCI).

While travelling to hospital the paramedic provides aspirin to reduce platelet aggregation, glyceryl trinitrate (GTN) for optimum perfusion and morphine for pain relief, and reduce anxiety. Having sent a detailed pre-alert message, the cardiology team was waiting for the patient's arrival. They were able to reverse a complete occlusion of the right coronary artery. The patient is discharged from hospital five days later and is recovering well thanks to their early access to high-quality care and management via the appropriate referral pathway.

A3.2

CASE EXAMPLE

Specialist Paramedic in Primary Care

A local paramedic crew referred a patient to a specialist paramedic for review following a fall downstairs the previous evening. The patient had injured their ribs in the fall and had a history of chronic obstructive pulmonary disease (COPD).

On arrival the specialist paramedic reviewed the crew's documentation and took a detailed history from the patient, determining that the patient had felt unwell prior to the fall. The patient had good neurological status and had suffered bruising to the lower ribs, possibly with an associated rib fracture. Chest examination elicited adventitious breath sounds and a pyrexia. The specialist paramedic used near-patient testing to measure white blood cell (WBC) count and, using this information, diagnosed a lower respiratory tract infection (LRTI).

The specialist paramedic prescribed antibiotics for the infection and oral analgesia for the rib pain. They liaised with the patient's GP who agreed to follow-up in due course. The patient and family were delighted that attendance at an emergency department was not needed; the specialist paramedic had treated the chest injury while also discovering the chest infection, which may not have been addressed for several more days.

A3.3

CASE EXAMPLE

Specialist Paramedic in Critical Care

A 42-year-old male collapsed and stopped breathing five minutes after physical activity; bystanders immediately commenced cardiopulmonary resuscitation (CPR). Previously he was in good health and did not complain of any pain prior to the collapse. An ambulance with a critical care paramedic (CCP) arrived within minutes, shortly followed by an advanced paramedic in a rapid response car.

The CCP found the patient in refractory ventricular fibrillation (VF), noting cyanosis to his face, neck and chest. The CCP secured the airway with an initial end tidal CO₂ (EtCO₂) reading of 5.5kPa, quickly falling to 3.5kPa. Using their enhanced knowledge the CCP recognised a potential pulmonary embolism due to the cardiac arrest presentation, the patient's age, their physical assessment and EtCO₂ interpretation.

The CCP excluded other reversible causes and considered pre-hospital thrombolysis (PHT) would be the only way to terminate VF and improve the patient's likelihood of survival. The CCP was able to discuss the proposed management plan with the advanced paramedic, who agreed and supported it.

Thrombolytic therapy was administered by the CCP, obtaining a reperfusion rhythm before gaining a return of spontaneous circulation (ROSC) and respiration.

A3.4

CASE EXAMPLE

Advanced Paramedic

Asked by control to attend and support a cardiac arrest on a five-a-side football pitch that had a CCP on scene. The advanced paramedic role, which was new to the ambulance trust, was expected to provide clinical leadership and effective on-scene decision making capability.

On arrival they were briefed by the paramedic on scene, who was a specialist paramedic in critical care. The advanced paramedic was able to support the decision made, which was outside of their Trust's clinical guidelines but clearly appropriate and beneficial to the patient's needs.

The advanced paramedic assisted the CCP in administering the thrombolytic therapy, after which the 42-year-old male regained a reperfusion rhythm, ROSC and respiration. The relatively stable patient was then transported to a local catheterisation cardiac lab for ongoing care and possible rescue angioplasty.

The advanced paramedic completed the relevant paperwork and informed the clinical support team of the decision and actions taken, and was promptly dispatched to assist an end of life case in support of an attending ambulance crew.

Section **B**

Principles of Paramedic Development

B1 Guidance for a Paramedic Curriculum

The following section provides guidance on the process areas of developing a paramedic programme and will be used as part of the assessment framework for programme endorsement by the College of Paramedics. To ensure appropriate preparation of students for clinical practice, these should be used alongside the *HCPC Standards of Proficiency – Paramedics*⁴ and *Standards of Education and Training*⁵ to develop robust programmes of development for student paramedics, supported by appropriate policies.

The development of safe, competent and capable practitioners must be the prime consideration for providers of paramedic education. Accordingly, paramedic programmes should address the range of patients throughout the lifespan, from birth to older adults. Programmes should also ensure relevant topics are specifically focused on particular patient groups such as those with learning disabilities, mental health, paediatrics, obstetrics, trauma, dementia, palliative care and End of Life Care (EoLC), and these should be included into programme curricula. Additionally, students should experience integration of 50 percent theory and 50 percent practice to ensure competency acquisition in all of the identified areas. During a programme of study, students should acquire the necessary knowledge, performance, practical application of skills and personal and professional awareness to enable them to undertake effective lifelong learning, which will in turn support their continuous professional development (CPD).

Due to the vocational element of paramedic practice and development, students must successfully complete all of the required practice elements in addition to the theoretical elements of a programme. This can only be achieved through an effective partnership between an education provider and supporting pre- and out-of-hospital care providers through a framework of placement support processes. This should be an integral part of higher education paramedic science programmes.

B2 Advertisement of Programmes

Potential student paramedics want and need to make an informed choice based on access to materials and information available on paper and/or online. At the time of publication there were 29 Higher Education Institutions (HEIs) delivering full-time paramedic science HCPC-approved programmes, 17 set at BSc (Hons), the remaining 12 HEIs deliver either a DipHE or an FdSc, of which four of the HEIs delivering an FdSc programme are currently undergoing HCPC approval to change to delivering a BSc (Hons) programme³⁰. Of these 12 are College of Paramedics-endorsed programmes in paramedic science. Social media is alive with prospective students attempting to understand the options available and the minor variations from programme to programme.

Employability at the conclusion of the programme and any additional employer-specific hurdles should be made explicitly clear to a prospective student in the advertising and/or at interview. Issues such as fitness and driving licence requirements are specific examples of confusing areas, along with financial support beyond fees, such as travel to practice placement.

B3 Selection and Admission for Endorsed Programmes

To ensure appropriate preparation of students for practice, the elements that follow should be used alongside the relevant HCPC *Standards of Education and Training*⁵, QAA *Paramedic Science Benchmark Statement*⁸ and QAA *Admissions to Higher Education*³¹.

This curriculum uses the term 'student paramedic' to identify students specifically on an undergraduate programme leading to eligibility for registration. Programmes developing students towards eligibility for registration as a paramedic must demonstrate a clear selection and admission criteria. These should meet the minimum entry criteria of the regulatory body (the HCPC), the education provider (HEI) and the following requirements of the College of Paramedics:

- Academic entry requirement to level of programme,
- Vocational fitness assessment (if applicable),
- Driving licence requirements, if applicable prior to commencing the programme (agreed in partnership with NHS ambulance trusts),
- Clear command of written and spoken English⁴.

Recruitment processes should also take into account Health Education England's Values Based Recruitment Framework³². This states that education programmes should use approaches which attract and select students on a basis that their values and behaviours align with the values of the NHS constitution.

As with all selection and admission criteria, all stages of the process should be clearly documented, contain an equal opportunities policy, disability awareness and quality control measures. This is to ensure a fair, documented pathway for access to programmes.

There is also a requirement for public safety and protection through the Disclosure and Barring Service (DBS)³³ and the PVG Scheme of Disclosure Scotland¹⁶ to ensure the protection of vulnerable adults and children. In addition, appropriate mechanisms for occupational health screening should also be completed in line with current Department of Health guidance, including consideration of exposure prone procedures³⁴.

Communication and interpersonal skills are fundamental in the ongoing development of the paramedic, including team work and leadership in relation to effective team performance and reduction of human error. Throughout the programme the student should develop communication skills in both emergency and non-emergency situations, including the need to respect and value others' beliefs. The student must develop the ability to manage challenging behaviours, either individually or as part of a multi-professional team.

The College of Paramedics supports the principle of rehabilitation of offenders, subject to the relevant legislation. A criminal conviction should not automatically prevent a candidate from applying to a paramedic programme but it should be disclosed (as per the relevant statutory requirements) to the HEI, so as to be considered against the policy of the institution concerned and with regard to placement requirements and the policies of the placement provider. The DBS³³, PVG¹⁶ and HCPC⁵ offer guidance on this subject.

B4 Accreditation of Prior Learning and Accreditation of Prior Experiential Learning

The College advocates accreditation of prior learning (APL) and accreditation of prior experiential learning (APEL)³⁵ as access routes onto paramedic science development programmes. These routes must be supported with a transparent and academically rigorous process for accrediting prior learning and prior experiential learning. The modern-day NHS requires its personnel to become 'lifelong learners' and, as such, it is important that equity of access to higher education is embraced for all paramedics.

APL is learning, appropriately evidenced, that has been achieved outside a particular educational establishment. If an individual has completed accredited training in the past it may be possible to use some or all of the credits that they

have obtained as part of a programme. Modules to be considered for APL must be directly relevant to the programme of study.

APEL allows individuals to obtain credits towards a programme for experience and knowledge gained through work rather than formal academic study. To bring APEL into a programme requires individuals to match their experience to the learning outcomes of one of the modules offered by the appropriate HEI. Individuals will also need to show evidence of their ability to study at the appropriate academic level. Where they have completed accredited training in the past it may be possible to use some or all of the credits that they have obtained as part of their programme.

The College of Paramedics is clear that HEIs must have an appropriate process in place for both APL and APEL applications to acknowledge and award academic credits for prospective students with prior academic and clinical experience; these should describe procedures, academic support and assessment available to prospective candidates, thereby meeting their expectations.

B5 Academic Entry Level to the Profession

Since 2003 the entry level to the professional register has been set at level 4 (equivalent to a Certificate of Higher Education⁵). Currently, several universities in the UK deliver level 5 (Dip HE), the Diploma of Higher Education SHE level 2 (SCQF8) and level 6 (BSc Hons) paramedic science programmes, for both undergraduate programmes leading to eligibility to register as a paramedic, and post-registration CPD programmes. This increasing trend in education standards is a welcome progression in the development of paramedic educational pathways. The College of Paramedics notes the findings of the Paramedic Evidence-based Education Project (PEEP)³⁶, which recommends ‘the raising of the academic threshold to the HCPC register to level 5 (Dip HE) by 2015, followed by level 6 (BSc Hons) by 2019’. However, the College of Paramedics believes that entry to paramedic registration should be at academic level 6 in England, Wales and Northern Ireland⁹, and SHE level 3 (SCQF10)¹⁰ in Scotland, and any advancement to achieving this before 2019 would be welcomed. The College of Paramedics recommends that all pre-registration undergraduate programmes should be at the appropriate undergraduate level^{9, 10}, as of the academic year 2015/16.

B6 Practice Placement Education

The College of Paramedics believes that the experiential component of paramedic education is vital in producing competent and fit-for-practice paramedics. Since the

publication of the *Taking Healthcare to the Patient reports*^{25, 26}, HEIs have emerged as the principal provider of mainstream full-time direct entry pre-registration paramedic education in partnership with NHS ambulance service trusts.

The essential prerequisite of experiential learning is supported by the College of Paramedics' recommendation that at least 50 percent of learning takes place in the clinical practice environment, and that direct entry undergraduate pre-registration students must have supernumerary status while undertaking practice placement periods. These must be undertaken with appropriately trained^{37, 38} and registered paramedic educators (PEds) so that every patient encounter becomes an opportunity for learning to prepare the contemporary student paramedic for ongoing development within evidence-based autonomous practice. The College of Paramedics accepts that any employing organisation during the transition (2015-2019) period to level 6/SCQF level 10 may continue to develop "in-house" staff to paramedic status. These individuals may not require 100 percent supernumerary placements due to their existing clinical experience. A guide of 225 hours supernumerary per year of clinical practice development will be deemed as sufficient, this equates to 30% of the 750 of a full-time HEI student paramedic.

Effective partnerships between current and future employers and HEIs continue to support student learning by developing suitable paramedics as PEds, who undertake an appropriate practice educator education programme, thereby completing the circle of learning. It is envisaged by the College of Paramedics that these PEds will have access to level 6/SCQF level 10 mentoring programmes by 2019.

B7 Approval and Endorsement of Programmes

In 2015 the College of Paramedics reviewed its own endorsement scheme¹³, which provides a further layer of quality assurance for users and providers of educational programmes, over and above the existing standards set by the HCPC¹¹ and QAA⁸.

The College of Paramedics continues to work closely with the HCPC, employers, Health Education England and other key stakeholders to ensure that quality assurance processes in education provision is maintained³⁹, and continues to allow open and transparent discussions with all parties to ensure high-quality education⁴⁰ and fit-for-practice paramedics. In line with the College of Paramedics guidance given in Section B 5, it recommends that endorsement will only be awarded to pre-registration programmes at academic level 6 in England, Wales and Northern Ireland⁹ and, in Scotland, the Scottish Bachelors degree SHE level 3 (SCQF10)¹⁰ from the academic year 2015/16.

B8 Policies, Procedures and Programme Management

Programmes delivering paramedic development must have effective policies and procedures for key educational processes^{31, 39, 41}. As a minimum, these should include admissions, selection, attendance, assessment failures, practice placement provision and student conduct⁷. All policies and procedures should be fair, transparent and in accordance with the principles of natural justice and HEI internally ratified processes. The scope of these policies and procedures must be sufficient to cover both the theoretical and practical elements of the programme.

The College of Paramedics believes that all HEIs should have a robust and transparent ‘professional suitability’ policy/process. This should outline the expectations of pre-registration student paramedics and monitor and enforce suitable values and behaviours.

A robust policy on sickness and unauthorised absence must be designed to ensure that students have covered academic and practice placement learning outcomes sufficiently to demonstrate proficiency to practice. Provision should be available for retrieval of lost hours depending on circumstances (if necessary during vacation periods).

Programmes of paramedic development should be sustainable in terms of student applications, course numbers, finance, academic and placement support, alongside any further relevant aspects of the programme, and should be evident in the strategic business plan of the HEI.

Key programme management positions responsible for leading and developing programmes must be held by suitably qualified and experienced paramedics. Management committees should include paramedic(s), placement provider(s), student paramedics and service user representation. They should also have a clear course structure and, where possible, module or unit leaders that are paramedics.

An effective working relationship between the HEI and practice placement provider(s) should be clearly documented to ensure clarity for all parties concerned. An up-to-date, formal memorandum of agreement should be maintained that outlines the key elements of the relationship. This should be backed by policies and procedures as appropriate, plus a defined system for audit and review of the programme as a whole, and for each new intake and graduates. The structure should be developed to establish a mechanism for academic and placement support that gives access to students while studying both the theoretical and practical elements of the programme. Clear links between HEIs and placement areas should be identified and documented with appropriately timed reviews and educational audits.

Pre-Registration Curriculum for Paramedic Development

C1 Curriculum Content

This section outlines the key areas of study for the student paramedic. In designing programmes all areas of the curriculum content must be covered at the appropriate academic level. These are delivered across the following domains:

C1.1 Physical Sciences

C1.1.1 Apply scientific units of measurement used in clinical science and healthcare.

C1.1.2 Understand and apply pressure and gas laws, especially as related to respiration.

C1.1.3 Understand heat transfer specifically in relation to maintenance of normal body temperature.

C1.1.4 Understand and apply the laws governing physical and movement forces including ergonomics as applied to the working environment and manual handling.

C1.1.5 Understand the composition of fluids: concentration, salts, electrolytes, solutes, solutions, colloids and suspensions including haemodynamics and viscosity and evaluate this in relation to blood flow.

C1.1.6 Understand and apply theory associated with the properties and reactions of acids, bases and buffers.

C1.1.7 Interpret theory associated with diffusion and osmosis, especially as applied to gas exchange and movement of water between body fluid compartments.

C1.2 Life Sciences

C1.2.1 Understand the dynamic relationship between human anatomy and physiology. This should include all major body systems with an emphasis on cardiovascular, respiratory, nervous, digestive, endocrine, urinary and musculoskeletal systems.

C1.2.2 Identify the pathophysiological changes to normal homeostatic function and its implications.

- C 1.2.3** Recognise human growth and development across the lifespan including the factors influencing individual variations in human ability and health status.
- C 1.2.4** Understand the role of nutrition in health and illness.
- C 1.2.5** Microbiology: Recall the main classes of pathogenic microorganisms, and apply knowledge to the spread of infection and universal precaution.
- C 1.2.6** Understand and apply theory associated with immunology and the response to infection and injury.
- C 1.2.7** Demonstrate a fundamental understanding of Genetics, including the structure of DNA, the flow of information from DNA to RNA to protein in the cell, transcription of DNA to mRNA and the protein synthesis process.
- C 1.2.8** Demonstrate a fundamental understanding of Genomics, including the inter relationship of genes in order to identify their combined influence on the growth and development of organisms.
- C 1.2.9** Understand the data protection issues around the use, sharing and storage of genomic information, legal and ethical framework, consent etc.
- C 1.2.10** Understand the role of genomic technology and how it can be used to benefit the care of patients across the NHS by identifying the correct therapies to maximise efficacy and reducing adverse effects.
- C 1.2.11** Understand the application of genomic technology and its role in healthcare delivery, including areas such as disease risk and predisposition, to support more accurate diagnosis and prognosis, and to select and prioritise preventive or therapeutic options in a wider set of pathological disorders.
- C 1.2.12** Outline the principles of epidemiology and the aetiology of normal presentation.
- C 1.2.13** Demonstrate a fundamental understanding of the principles of pharmacology.
- C 1.3 Social, Health and Behavioural Sciences**
- C 1.3.1** Evaluate the significance of diversity and anti-discriminatory practice including fairness, social inclusion, gender, sexuality, ethnicity, spirituality, religion and culture.
- C 1.3.2** Demonstrate safeguarding of children at risk and vulnerable adults, both in paramedic care and within the wider context of society.
- C 1.3.3** Understand and apply the theory associated with loss, change and bereavement.

- C 1.3.4** Develop a contextual understanding of models of health and illness, and evaluate the impact of health and social policies on professional practice, and the role of the paramedic in health promotion.
- C 1.3.5** Evaluate the psycho-social determinants of health, including inequality and the factors contributing to the needs of different social groups, including the factors that influence an individual in health and illness.
- C 1.3.6** Develop a fundamental understanding of mental health conditions and associated patient management, including: psychosis, depression, bipolar disorder, post-natal depression, schizophrenia, obsessive-compulsive disorders, post-traumatic stress disorder, self-harming, attempted suicide, substance misuse (including alcohol and drugs) and other associated diseases.
- C 1.3.7** Understand and apply theories of:
- Stress and coping, and the effects of stress on individuals,
 - Pain and the effects of pain on individuals,
 - Team work and leadership in relation to effective team performance and reduction of human error,
 - Supporting human information processing, problem solving and clinical reasoning.
- C 1.3.8** Develop an awareness of the ten principles and respective standards regarding Dementia.
- C 1.3.9** Develop a contextual understanding of Alzheimer's disease, Parkinson's disease, palliative care and End of Life Care (EoLC).
- C 1.3.10** Outline the history of the paramedic profession and the organisation of the NHS and UK NHS national ambulance services with an emphasis on clinical governance.

C 1.4 Clinical Sciences

The following describe variations of learning and teaching principles of programmes developing paramedic practice:

- C 1.4.1** Know relevant medical terminology.
- C 1.4.2** Evaluate how lifespan and individual variations influence susceptibility to disease, injury and responses to treatments.
- C 1.4.3** Identify pathological changes and the related clinical features of commonly encountered conditions.

- C 1.4.4** Understand physiological, structural, behavioural and functional changes in patient presentation and the effect of interventions.
- C 1.4.5** Apply an understanding of the theoretical basis of assessment, critical clinical decision making, management and the scientific evaluation of their effectiveness.
- C 1.4.6** Demonstrate the capacity to safely administer therapeutic medications, including an applied understanding of pharmacology, pharmacodynamics and pharmacokinetics.
- C 1.4.7** Safely and appropriately demonstrate use of medical technology and equipment used in pre-hospital and out-of-hospital paramedic practice, and be aware of the factors limiting the reliability of equipment.
- C 1.5 Ethics and Law**
- C 1.5.1** Evaluate and critically appraise the ethical, legal and professional issues that inform and shape paramedic practice.
- C 1.5.2** Interpret and apply the Professional, Statutory, and Regulatory Bodies (PSRB's) standards of conduct, performance and ethics.
- C 1.5.3** Illustrate a contextual understanding of the ethical and legal frameworks within paramedic practice, and relevant legislation. Principles of consent, autonomy, beneficence, maleficence and non-maleficence.
- C 1.5.4** Know current UK law that relates to the driving and operating of emergency vehicles as appropriate to the paramedic profession.
- C 1.5.5** Apply ethics associated with caring and the primacy of patient interest and patient advocacy.
- C 1.5.6** Demonstrate awareness of practical issues relating to actions at crime scenes and evidence preservation.
- C 1.5.7** Apply in practice patient confidentiality and data protection.
- C 1.5.8** Understand duty of care, and implement theory associated with capacity, concordance and consent.

C 1.6 Patient Assessment

- C 1.6.1** Manage uncertainty through conduction of ongoing dynamic risk assessments in rapidly changing circumstances of clinical incidents in order to implement the control measures necessary to achieve an acceptable level of safety for patients, bystanders and other rescuers. Including the appropriate use of universal precautions, infection prevention and personal protective equipment (PPE).
- C 1.6.2** Differentiate and appraise issues of consent and capacity, across the life spectrum, including and incorporating the patient who may have an advanced directive, or do not attempt resuscitation (DNAR) order or their advocate.
- C 1.6.3** Identify and differentiate the critically injured patient, including those with an exacerbation of existing illness or disease, and ensure the appropriate management of patients with a time-critical injury or illness in accordance with current evidence-based practice.
- C 1.6.4** Identify and assess patients who present with minor injury(s) and/or illness(s), and assist in providing the appropriate management of the injury or illness in accordance with local care pathways and current evidence based practice.
- C 1.6.5** Conduct a thorough and detailed physical examination of the patient applying appropriate skills to inform their critical clinical reasoning and guide the formulation of a differential diagnosis across all age ranges.
- C 1.6.6** Obtain and record a comprehensive and comprehensible health history in accordance with applicable legislation, protocols and guidelines, ensuring patient data is stored appropriately.
- C 1.6.7** Undertake and interpret a comprehensive set of clinical observations appropriate to the patient's condition, including 12-lead ECG acquisition and interpretation for a range of acute coronary syndromes (ACSs).
- C 1.6.8** Utilise critical thinking skills and evidence based practice to support their decision making in formulating a diagnosis from the analysis of clinical examination, history and vital signs assessment findings.
- C 1.6.9** Evaluate and critically appraise the need for further assessment, intervention or referral to specialist or advanced paramedics, or other services, care pathways or agencies.

C 1.7 Care Delivery

- C 1.7.1** Modify approaches to ensure application of care with respect to the environment and situation encountered, especially in regard to scene safety, including potential and actual crime scenes.
- C 1.7.2** Apply safe, appropriate and effective, basic and advanced life support to adult, child, infant and neonate.
- C 1.7.3** Apply collaborative pain assessment and management.
- C 1.7.4** Implement effective critical clinical decision making in order to formulate, negotiate and implement treatment plans, with the appropriate use of clinical safeguarding and referral.
- C 1.7.5** Select and utilise appropriate interventions, taking into account the specific therapeutic needs of patients and carers.
- C 1.7.6** Assessment, moving and handling of patients within a wide range of clinical situations using appropriate selected equipment and techniques.
- C 1.7.7** Where applicable to the immediate needs of the patient, evaluate and implement referral options required to better meet their care needs, or transport to an appropriate health and/or social care facility.
- C 1.7.8** Assessment, consultation and delivery of patient care within a multi professional team and, where appropriate, delegate patient care to other qualified and suitably experienced health and social care professionals.
- C 1.7.9** Ensure restocking of patient care equipment and ensure all non-disposable medical equipment is appropriately cleansed and available for future care givers who may be required to use it.

C 1.8 Leadership Attributes

- C 1.8.1** Understand human factors, patient safety and team working as applied to healthcare generally and paramedic practice specifically, providing clinical leadership to peers and less experienced students.
- C 1.8.2** Implement evidence-based healthcare and its application to paramedic care, including maintaining knowledge of current, evidence-based best practice.

- C 1.8.3** Know concepts of quality and the application to paramedic services including a basic appreciation of, and delineation between, 'system thinking' and 'command and control' approaches.
- C 1.8.4** Apply effective Crew Resource Management, including future approaches to resource deployment, control operations and priority dispatch systems.
- C 1.8.5** Be aware of how mentorship, coaching and guidance from colleagues and associates can enhance an individual's capacity for clinical leadership.
- C 1.8.6** Understand patient triage and prioritising care, including the use of priority dispatch systems, telephone and face-to-face clinical decision support systems.
- C 1.8.7** Develop a fundamental understanding of principles of management within organisations.
- C 1.8.8** Develop a fundamental understanding of clinical governance and maintaining/monitoring standards.
- C 1.8.9** Contribute to the development and implementation of policies and quality improvement measures within the local area health economy.

C 1.9 Evidence-and Research-Based Practice

- C 1.9.1** Apply research methods to improve paramedic care of patients and patient groups.
- C 1.9.2** Critically appraise research evidence to design, improve and implement effective paramedic practice.
- C 1.9.3** Evaluation of research methodologies, which enables the integration of theoretical and practical applications.
- C 1.9.4** Use information computer technology to process and analyse research findings.
- C 1.9.5** Formulate research questions, pursuing the development of a research design and the implementation of the research process.
- C 1.9.6** Utilise literature to inform current and evolving research of evidence-based practice.

C 1.10 Informatic Topics for Paramedics

Health Informatics is a broad term used to define a range of competences, functions, systems and processes utilised within the health and care setting. The discipline of health informatics is understood to be based within the development and use of ‘information and communications technology’ and should therefore be a foundation for paramedic practice; this section provides a framework that can be used to provide the foundation of practice.

C 1.10.1 Information Governance.

C 1.10.2 Clinical Records, Patient Information and Record Repositories.

C 1.10.3 Use of the Internet as an information source.

C 1.10.4 Technology Enabled Care/mobile health.

C 1.10.5 Interpretation and use of patient data systems through information metrics and analytics.

C 1.10.6 Secondary data use.

C 1.10.7 Social media, Email & Communication.

C 1.10.8 Use of social media in accordance with current PSRB recommendations.

C 1.10.9 Apps, Devices & the cloud.

C 1.10.10 Health informatics futures.

C 1.10.11 General curriculum items:

- Writing and communicating,
- Use of word processing, email, spreadsheets and databases,
- Mental calculations on the basis of changing values,
- Speaking and listening,
- Reading and comprehension.

C 1.11 Resilience Attributes

C 1.11.1 Acquire an overview of major incident response plans at a local and national level.

- C 1.11.2** Understand the National Ambulance Command and Control Guidance, and the role of the National Ambulance Resilience Unit (NARU).
- C 1.11.3** Be able to perform as the first crew on scene during a major incident.
- C 1.11.4** Maintain accurate incident logs and records, including principles of incident logging.
- C 1.11.5** Management of multiple casualty and major incident situations in accordance with agreed national policies and procedures; including specific chemical, biological, radiological and nuclear (CBRN) incidents.
- C 1.11.6** Understand ambulance service special operations responses and ambulance trust obligations within the Civil Contingencies Act (2004) and the Health & Social Care Act (2008).
- C 1.11.7** Perform appropriate functions during a major incident as tasked or required.
- C 1.11.8** Understand the use and importance of communication in major incidents.
- C 1.11.9** Contribute to debriefings.

C 1.12 Clinical Placement

The following should have practice outcomes designed to suit the programme and module complexity level as the student progresses along the academic programme.

- C 1.12.1** Ability to establish and maintain a safe practice environment in accordance with current health and safety regulations. Also recognition of, and appropriate response to, the hazards of cross-infection taking account of the principles of universal infection control relating to patient care and staff welfare.
- C 1.12.2** Ability to apply and adapt their clinical and social skills in different practice environments, taking account of the varying needs of individuals, groups and/or carers while acknowledging and dealing appropriately with uncertainty, unpredictability and change (both in terms of clinical practice itself and the organisational context in which care in the paramedic arena is delivered).
- C 1.12.3** Communication and teaching skills, including the ability to listen effectively, to address individuals' needs with sensitivity, and to explain their thinking and actions in appropriate styles and formats. Demonstrating a commitment to patient partnership, manifested in their sensitivity and responsiveness to the needs and interests of patients and carers through the negotiation and evaluation of mutually agreed goals.

- C 1.12.4** Ability to collaborate with other members of healthcare teams, including members of other professions and support workers, recognising and respecting the roles, responsibilities and contributions of each.
- C 1.12.5** Ability to make independent decisions based on a thorough evaluation of need, contextual factors and current evidence-based practice, while referring to appropriate sources of advice and support when required.
- C 1.12.6** Ability to manage patients effectively and efficiently in a range of settings, making appropriate decisions about priorities and drawing on sources of advice and support when required.
- C 1.12.7** Ability to keep full and accurate records, respecting issues of confidentiality, information security obligations and standards of professional practice, and responding appropriately to current and future developments in health informatics, information communications technology (ICT) and knowledge management that may or could impact on record-keeping processes and requirements.
- C 1.12.8** Ability to safely handle, order, receive, prepare and administer medicines in the practice environment in accordance with current Medicines and Healthcare Products Regulatory Agency (MHRA) paramedic regulations⁴⁴.
- C 1.12.9** Recognition of the legal, ethical and moral boundaries, and appropriate response to the limits of their personal scope of practice and to the scope of practice of the profession at large.

C2 Preparation for Clinical Practice Placement

C 2.1 Quality Principles

As a student on a pre-registration paramedic science programme, preparation for professional registration commences with registration to the programme. To become eligible to register and use the protected title of ‘paramedic’ requires successful completion of a pre-registration undergraduate programme of holistic education that meets the requirements of the regulatory body, namely the HCPC. At present, to enable an education provider or HEI to deliver such a programme, they must apply to the HCPC for their programme to be approved¹¹. To ensure that the principles of quality are adhered to throughout the UK, the curriculum needs to be formally mapped against and, where applicable, meet the following appropriate standards:

- College of Paramedics *Paramedic Curriculum Guidance 3rd edition (Revised)*,
- HCPC *Standards of Proficiency – Paramedics*⁴,
- HCPC *Standards of Education and Training*⁵,
- QAA *Paramedic Science Benchmark Statement*⁸,
- QAA *Framework for Higher Education Qualifications in England, Wales and Northern Ireland*⁹,
- QAA *Framework for Qualifications of Higher Education Institutions in Scotland*¹⁰.

As a student, you will be expected to adhere to the HCPC *Guidance on Conduct and Ethics for Students*⁷, and aspire to the *Standards of Conduct, Performance and Ethics*⁶. Professional bodies are responsible for producing the curriculum⁴², which the College of Paramedics has, to date, produced^{1,2}. In 2015, the College of Paramedics reviewed and updated its endorsement policy for pre-registration paramedic science programmes¹³.

C 2.2 Practice Hours

Practice placement learning forms one of the most important components of paramedic education; it ensures that the student has considerable exposure to apply theory to practice.

The College of Paramedics stipulates that 50 percent of the programme should be undertaken in the clinical practice setting (see Section C 2.3). Practice placements should be spread evenly across the duration of the programme to

permit refinement of practice alongside the acceptable academic level of development, and to ensure consistent learning and assimilation of learning objectives in practice.

C 2.3 Placement Provision

The quality of placements is essential in providing students with the opportunities to achieve competence; the HCPC *Standards of Proficiency – Paramedics*⁴, *Standards of Education and Training*⁵, and the College of Paramedics' *Paramedic Curriculum Guidance 3rd edition (Revised)* should be utilised as the fundamental premise on which to guide and base the learning outcomes for practice-based education.

Paramedic practice is constantly evolving and, therefore, a key component of ensuring the quality of the placement is to provide sufficient exposure in practice to the various situations encountered in pre- and out-of-hospital care. Successful achievement of these elements in practice may be difficult to achieve due to the unpredictability of the exposure and nature of emergency and urgent calls, as well as varying patient presentations.

To achieve adequate exposure in practice, the **minimum** number of practice placement hours for a programme of study should be 2250 hours over a three-year programme. Delivery of theory elements underpin understanding and contextualise practice whilst incorporating all academic levels of development throughout the programme so it is reasonable to consider practice delivery models that ramp up in the latter half of the course, ie, 600, 750 and 900, however HEIs may prefer to evenly balance the hours across the three years, ie, 750 per year.

In year one of the programme these hours may include periods spent developing the appropriate basic level of practical skills acquisition; however, in the second and third years these hours must be acquired in the clinical placement environment. They can also include up to 5% of simulation experience as outlined below.

Practice placement hours for undergraduate direct entry student paramedic programmes must be undertaken in a supernumerary supervised capacity, with an appropriately trained and registered PEd or healthcare practitioner (e.g. anaesthetist, registered nurse, midwife). This ensures patient safety, minimises the risk to the supervising health professional and ensures an appropriate level of mentorship and support for the student.

Supernumerary status does not mean that the student is in an observational role; they should participate in the care of the patient appropriate to the level of their academic education, development and their current scope of practice as a student. As the student paramedic develops experience, they will be expected to progress from dependent practice through assisted and minimal supervised practice to independent practice during their academic journey, thereby ensuring the individual is 'fit for purpose, practice and award' at the point of eligibility of entry to the register.

Practice hours in areas of learning should reflect the appropriate competency development^{4,5} and the profession's scope of practice. The programme of study should incorporate adequate exposure time for the achievement and enhancement of competency development. This should not extend for more than 50 percent of the recommended practice placement time outside of the environment of emergency ambulance response; this is to enable the student to develop competencies across the full patient journey.

Simulation is recognised as a beneficial educational tool⁴³, particularly in the acquisition of advanced life support skills and those that the student paramedic may have insufficient exposure to in the pre- and out-of-hospital environment. Accordingly, a **maximum of 5 percent** of the recommended practice placement hours can be used to summatively assess paramedic competencies in the simulated environment. However, this should be taken on an individual basis and not built into the programme as a one-size-fits-all approach. Therefore, if simulation is used, it must be both justified and appropriate to the needs of individual students rather than the needs of the academic programme.

Progression should occur during practice placements and throughout the programme to enable the student paramedic to achieve an appropriate level of skill acquisition for the academic level;

- Level 4 – Skill Acquisition – Competent at Basic Skills,
- Level 5 – Skill Acquisition – Minimal Supervision,
- Level 6 – Skill Acquisition – Independent.

Procedures should be in place to identify the completion of competency development and, where applicable, provision for retrieval of these (e.g. due to sickness or unauthorised absence) including extra hours, if required, should be incorporated into the academic programme.

C 2.4 Practice Placement Themes

The following practice placement outcomes utilise Bloom's revised taxonomy⁴⁵, which is currently utilised throughout healthcare practice⁴⁶. Student paramedics are expected to:

- C 2.4.1** Consistently demonstrate a high level of professionalism^{6,7} whilst undertaking clinical practice placements
- C 2.4.2** Demonstrate fitness to practice throughout the duration of their programme.
- C 2.4.3** Work collaboratively with other medical, non-medical and allied health professionals.
- C 2.4.4** Ensure that they make an effective contribution as part of a multi professional team.
- C 2.4.5** Develop care plans in partnership with patients, carers and advocates.

C3 Specific Domains of Practice Placement Experience for Student Paramedics

C 3.1 Knowledge

C 3.1.1 Apply appropriate health and safety in accordance with current Health and Safety Executive (HSE) and legislative regulations, and be able to continue to establish and maintain an appropriate safe practice environment.

C 3.1.2 Understand the hazards of cross-infection and healthcare-acquired infections (HAIs); apply the principles of universal infection control as appropriate to the patient's needs.

C 3.1.3 Understand patient confidentiality and be able to sensitively and professionally handle data including written, verbal, electronic, digital and all other formats including future versions of media resourcing.

C 3.1.4 Evaluate and respond accordingly to the healthcare needs of patients across the lifespan who present with acute, chronic, minor illness or injury, medical or mental health emergencies received via the 999 or 111 systems.

C 3.1.5 Identify patients who have conditions that require immediate intervention and understand the urgency that is required when dealing with a patient with a life-threatening condition.

C 3.1.6 Critically appraise clinical decision making.

C 3.2 Performance, practical application of skills

C 3.2.1 Demonstrate effective communication and interpersonal skills during their interactions with patients, service users, carers, colleagues and other allied health and medical professionals.

C 3.2.2 Demonstrate the ability to conduct thorough and detailed patient assessments including the appropriate physical examination of body systems.

C 3.2.3 Demonstrate the ability to appropriately select and safely apply a range of equipment appropriate to the patient's needs and the situation.

C 3.2.4 Demonstrate the ability to conduct appropriate diagnostic monitoring procedures, treatments and therapies appropriate to the patient's condition, including advanced techniques.

- C 3.2.5** Demonstrate at the point of observation the ability to utilise appropriate evidence and use this to support the formulation and delivery of effective and appropriate patient referral.
- C 3.2.6** Demonstrate effective and safe patient care through the use of emergency and advanced procedures, which are substantiated by evidenced-based research and professional development.
- C 3.2.7** Demonstrate an understanding of the principles of dealing with multiple casualties and major incident management, including the utilisation of special operations response teams (SORT) and hazardous area response teams (HART).
- C 3.2.8** Demonstrate the ability to maintain accurate patient records conforming to current legislative requirements and continuing practice guidance.

C 3.3 Personal & Professional Awareness

- C 3.3.1** Respond to the needs of the patient, carers and service users, in the provision of care.
- C 3.3.2** Establish and preserve the legal, professional, moral and ethical boundaries of paramedic practice.

C4 Practice Placement Guidance

C 4.1 General Principles

This guidance outlines the use of the paramedic AHP as a first-contact practitioner, initially as part of the 999 system. With the appropriate underpinning knowledge, competencies and practice experience, the student paramedic will be able to accurately assess the patient, provide appropriate treatment and formulate a care plan in partnership with the patient that addresses their specific needs and requirements.

The role and scope of paramedic practice is continuing to change. Increasing medical technology and public awareness of advanced and alternative healthcare issues have had a significant impact on the delivery of pre-and out-of-hospital care, including the introduction and subsequent implementation of the 111 system⁴⁷. The role of the paramedic utilises a range of academic disciplines in order to provide the level of skill required within contemporary society to support the optimum quality patient care experience.

A range of developing, supervising and assessment methods that promote an integrated approach to the application of theory and practice should be employed to facilitate the learning and development of students, which enables them to adopt critical thinking approaches to patient care, encouraging independent learning through reflective practice and professional conduct. In addition to the development of an academic foundation, the importance of understanding evidence-based practice, audit and research is core to the role of the paramedic.

Practice placements should be integral to the programme, enabling the amalgamation of theory into practice, thus continuing the development of clinical skills. This requires the use of practice in urgent and emergency care, and also in more general health and social care settings. The quality of the placements is central to the success of the academic programme and, ultimately, the development of the student paramedic. Adequate measures should therefore be in place to ensure that students can achieve the outcomes set for the collective programme.

C 4.1.1 All placement areas must be monitored and audited for effectiveness by the education provider.

C 4.1.2 Placement areas must have an adequate number of appropriately registered and trained Paramedic PEds or suitably qualified healthcare practitioners (e.g. anaesthetist, registered nurse, midwife).

- C 4.1.3** The student must be supervised and monitored by an appropriately registered and trained Paramedic PE_d during NHS ambulance trust placements.
- C 4.1.4** The placement provider must have an equal opportunities and anti discriminatory policy in relation to student healthcare professionals including student paramedics.

Strong partnerships between education and placement providers should aim to enhance the ongoing development of student paramedics into the profession by providing safe, effective and stimulating practice placements within acute, primary, community and tertiary care settings. Such placements introduce the student to inter-professional learning, while simultaneously allowing their development and understanding of the roles and responsibilities of other medical and allied healthcare professionals and associated systems to become imbedded into their practice.

Practice placements should be designed so that they are structured with set learning outcomes. The placement area staff and students should be pre-briefed as to what is expected, and debriefed post placement as to what was achieved. Assessments and/or examinations that are undertaken during placement periods should be fully explained in advance and accompanied with appropriate documentation that details how and when they will be conducted. Further, practice placements should be viewed as periods of continual development of theory into practice and experiential learning. It is imperative that the information gleaned from the education setting is transposed to the practice setting, so as to embed the evidence base, develop and discuss it, learn from it, and move it forward from its educational standing. Students should view all placements as a spiral progression through their programme of education, with each area complementing and reinforcing the next.

The number, duration and broad range of practice placements and practice outcomes should be tailored to the progression of the student in achieving the curricula of the College of Paramedics and the standards of the regulatory body HCPC^{4,5}. Placements must not only be appropriate to the achievement of learning outcomes but also permit the student to become a paramedic who is not only 'fit for purpose' and 'fit for practice' but is also 'fit for award'.

C 4.2 Practice Placement Areas

The following practice placement areas within the primary, acute, urgent, community and emergency care environments are unique settings for the practice placement learning outcomes to be achieved. These locations provide a rare and exceptional opportunity for inter-professional learning for the developing paramedic. While these are indicative, it is accepted that it may not be possible for the student to attend a placement in every listed area; they can be adjusted to suit the programme, module or academic/vocational level of development.

Therefore, it may be appropriate for some areas to be revisited during the programme to permit the student to achieve a more multi-faceted practice outcome. It is not uncommon for final-year degree programme students to go on an elective to a specialist placement arena.

C 4.2.1 Ambulance Emergency Unit (50% or more of all placements)

Provides the opportunity to develop skills and competencies in clinical practice, under the direct range of emergency and urgent calls and consolidation of theoretical knowledge into practice.

C 4.2.2 Operating Theatres/Day Procedure Units

Provides an opportunity to develop and consolidate the skills and techniques of advanced airway management. These will include laryngeal mask airways (LMAs), supraglottic airways, and may include endotracheal intubations (ETIs) in a clinical setting supported by an anaesthetist, operating department practitioners (ODPs) and anaesthetic nurses.

C 4.2.3 Emergency Department

Provides the opportunity to experience interaction with other allied health and medical professionals, as well as opportunities to develop skills of communication, patient handover, patient assessment, plus further treatment and investigation such as radiography, pathology, pharmacology and other appropriate departments.

C 4.2.4 Obstetric/Midwifery Units

Provides an opportunity to develop subject knowledge and experience of obstetric and maternal care including high-and low-risk patients. Depending on the placement area, the opportunity to develop and learn from obstetricians and midwives, and consolidate theoretical learning into practice in a specialist-supported practical learning environment.

C 4.2.5 Cardiac Care/Cardiac Catheterisation Units

Provides the opportunity to develop and learn from cardiologists, cardiac specialists and nurses, and further develop knowledge of patients experiencing ACS, acute and chronic cardiac conditions, atrial and ventricular regularities, irregularities and inherited cardiac conditions, which include hospital assessment and management of ACS.

C 4.2.6 Minor Injuries/Illness Unit

Provides an opportunity to develop patient assessment and communication skills with patients presenting with minor injuries and illnesses. Units are staffed by nurses and sometimes specialist paramedics in primary care. Provides the student with the opportunity to obtain practical experience of alternative care pathways.

C 4.2.7 Emergency Operation Control Centres (999 and 111 systems)

Provides the opportunity to gain an understanding of the use of the communication skills utilised in providing a 999 emergency response and urgent case GP referrals. Depending on the service provider this may include call taking advice (CTA), clinical support desk (CSD) or a 111 referral system to an appropriate care pathway.

C 4.2.8 Single Response Vehicles

Provides an opportunity to deal with a range of emergency and urgent care calls and consolidates theoretical knowledge into practice. This will be under the supervision of a paramedic PEd resourcing the unit in clinical practice dealing with patients who may require an immediate response or ongoing assessment as part of an alternative care referral pathway.

C 4.2.9 Intensive Care Unit (ICU) or High Dependency Unit (HDU)

Provides the opportunity to gain an understanding of, and focus on, the continuing management and monitoring of patients who are critically ill, from various medical or trauma causes.

C 4.2.10 Medical Assessment Unit

Provides the opportunity to develop patient assessment skills, gain an appreciation of relevant discharge criteria. Patient assessment may incorporate medical models of rapid assessment and treatment for a wide range of medical conditions.

C 4.2.11 Mental Health Unit

Provides an opportunity to gain experience and develop an understanding of the complexities and range of mental health conditions that patients may present with across the lifespan, and the role of the paramedic in assessing and managing these. This should include the opportunity to develop and gain an understanding of compulsory admission to hospital procedures under the Mental Health Act⁴⁸.

C 4.2.12 Paediatric Department/Wards

Provides the opportunity to develop and learn from specialists, paediatricians and nurses to enable the student to gain an understanding of paediatric illnesses and injuries, as well as developmental, psychological and social problems. This may include resuscitative measures including basic and advanced life support skills and knowledge.

C 4.2.13 Out-of-Hours (OoH) Unscheduled Care

Provides an opportunity to develop knowledge and experience of patient assessment and communication skills. These may be similar to minor injury units, however some OoH units provide advice and care for adults who have complex conditions. Patients are assessed and managed by advanced care practitioners, lead/charge nurses and paramedics.

C 4.2.14 Non-Emergency Services

Provides an opportunity to develop communication skills, implement the skills of moving and handling, and observe the role and operation of patient transport services' delivery of care and transportation. This may incorporate admissions, discharges and outpatient referral appointments.

C 4.2.15 Allied Health Teams

Provides the opportunity to understand and appreciate the specific and collaborative role of other AHPs, such as physiotherapists, occupational therapists, speech therapists and the role they play in patient care. This may include primary, secondary and community-based settings.

C 4.2.16 Surgical Assessment Unit

Provides the opportunity to develop patient assessment skills that incorporate surgical models (similar to medical assessment units), which allows students to gain an appreciation of relevant hospital investigations and, if appropriate, admission and discharge criteria.

C 4.2.17 Other Emergency Services

Provides an opportunity to develop an understanding and practical experience of the specific roles of other emergency services in the patient care pathway. These include the Police, Traffic Police, Highways Agency traffic officer, Fire and Rescue Services, Royal National Lifeboat Institute (RNLI), HM Coast Guard, Search and Rescue, and mountain search and rescue teams (which, of course, depends on the geographical location of the programme).

C 4.2.18 Supportive Operational Units

Provides the opportunity to gain an understanding of the use of paramedics and other specialists, including the British Association for Immediate Care Scheme (BASICS), Special Operations Response Teams (SORT)/Hazardous Area Response Teams (HART), Baby/Neonate Emergency Transfer Service (BETS/NETS) and Helicopter Emergency Medical Services (HEMS).

C 4.3 Practice Educators (PEds)

The role of classical mentoring has its conceptual roots in Homer's *Odyssey*. After a period of some 20 years, Telemachus – who was left by his father under the care of Mentor – was visited by the goddess Athena. She came disguised as a local to obtain admission to his home and provide guidance to him as a voluntary act of kindness and goodwill. Hence the qualities of voluntariness, kindness and goodness traditionally hold the key to the informal type of classical mentoring⁴⁹. The correlation is that the importance and valued role of modern day mentors – PEds – ensures that they also help to educate and guide students through their practice placement experiences.

The College of Paramedics accepts that up to 50% of the non-ambulance clinical placement areas will include other AHPs and members of the medical profession; the regulation of these professionals should ensure individuals who undertake this role are appropriately registered and trained, however it remains the responsibility of the HEI to audit all placement areas. The following will specifically relate to the role of the paramedic educator.

The role of the paramedic educator is extremely important and comes with significant responsibility. The actions and examples set by the paramedic educator during clinical placements have lasting consequences, which include positive and negative influences. The adherence to the following principles will uphold ongoing national professional standards and ensure that the student paramedic is educated and guided throughout their practice placements to the standards set by both the professional and regulatory bodies⁵. Paramedic educators must be registered and have undertaken a programme of ‘appropriate’ practice education training^{5, 13}.

Paramedic practice education has developed throughout the UK and is now undertaken in partnership with NHS ambulance trusts and HEIs³⁷, thus the quality of PEds is paramount to the educational and clinical practice development of the student.

Throughout the placement period, the PEd is responsible for the clinical and pastoral support/supervision of the student paramedic and will, at all times and without exception, act as the senior clinician, responsible for ensuring that patients receive the most appropriate treatment and care at all times. This currently includes appropriate drug administration⁴⁴. The College of Paramedics will develop and publish a Paramedic Educators Guidance Handbook in 2015 as a national standard guidance tool.

C 4.4 Practising Clinical Skills and Drug Administration

During the programme students are trained in a number of clinical skills and procedures that are usually only performed by a competent registered paramedic. Student paramedics may only practise these skills and procedures (e.g. intravenous (IV) cannulation and intubation) during clinical placements, only when they are supervised by a paramedic PEd or an appropriately qualified clinician (e.g. anaesthetist, registered nurse, midwife) and at a stage in their development that has been jointly agreed by the education provider, the practice placement provider and the PEd. Placement periods should provide the student paramedic an opportunity to develop their clinical skills and professional knowledge, thus enabling them to become an independent and autonomous practitioner. The PEd and student paramedic should be prepared for the

placement period; this should include information on, and understanding of, appropriate learning outcomes to be achieved.

Administration of MHRA paramedic exemption drugs must only be performed by the registered healthcare professional. Placement providers and the education provider should ensure that adequate insurance cover is in place for students in practice to undertake clinical skills under supervision.

C 4.5 Assessment Standards

Assessment regulations must clearly specify requirements for student paramedic progression and achievement within the programme. Any award that does not provide eligibility for application to the HCPC protected title of ‘paramedic’ should clearly define that any aegrotat award offered by the HEI does not provide eligibility for application to enter the register.

C 4.5.1 The assessment procedures must measure the learning outcomes and skills, and ensure that the student paramedic can practice safely and effectively while demonstrating fitness for practice.

C 4.5.2 All assessments must provide a rigorous and effective process by which compliance with external reference frameworks can be measured.

C 4.5.3 The measurement of the student paramedic’s performance and progression must be an integral part of the wider process of monitoring and evaluation, and use objective criteria.

C 4.5.4 There must be effective mechanisms in place to ensure appropriate standards in the assessments.

C 4.5.5 Professional aspects of practice must be integral to the assessment procedures in both the education setting and practice placement area.

C 4.5.6 There must be a right to appeal and at least one external examiner with suitable academic experience should be appointed from the paramedic register.

C 4.6 Student Support

Student paramedics and their PEds should be fully supported throughout the practice placements, and there should be clear lines of communication and responsibility.

- C 4.6.1** The student paramedic should have access to a 24-hour confidential support line provided by the education provider or the appropriate NHS trust when undertaking ambulance and clinical placements.
- C 4.6.2** The student paramedic should have access to both academic and vocational staff support and mediation services during office hours as a minimum requirement.
- C 4.6.3** The education provider should provide a link lecturer for educational and pastoral support for students undertaking all placements.
- C 4.6.4** The student paramedic should have access to occupational health and counselling services throughout the programme provided by the education provider or the appropriate NHS trust.
- C 4.6.5** The student paramedic must be supervised and monitored by an appropriately educated and trained Paramedic PE_d, currently registered with the HCPC as a paramedic.
- C 4.6.6** PE_ds must be supported by a lead paramedic practice educator.
- C 4.6.7** There must be a named person who has overall professional responsibility for the programme; they must be appropriately qualified and experienced, and be registered with the HCPC as a paramedic.
- C 4.6.8** There needs to be an understanding of the joint responsibility to the student paramedic's psychosocial welfare between the education provider, placement provider and student, with safeguards in place to aid the identification and support of the student in need.

C5 Principles of Curriculum Design

C 5.1 Programme Tuition

The underpinning aim of any programme is the delivery of a high standard and quality educational process to develop individual students to ultimately meet the requirements of registration and practice effectively as a professional paramedic. To meet this requirement, lecturers, educators and teaching staff must have the ability to relate theory to contemporary paramedic practice, and be afforded with, and/or capable of:

- C 5.1.1** Opportunities for lecturers, educators and teaching staff to maintain and develop their clinical expertise and practice.
- C 5.1.2** Delivery of development opportunities by individuals possessing an appropriate educational, scholarly and professional background.
- C 5.1.3** All teaching staff involved in paramedic education programmes are mandated to be familiar with the nature and scope of contemporary paramedic practice; where applicable they should be aware of how their speciality relates to paramedic education and practice.
- C 5.1.4** Clinical teaching and development should only be delivered by registered healthcare professionals who are experienced and specialised in the subjects they are teaching.
- C 5.1.5** Teaching staff should hold a minimum of a first degree and/or be working towards a postgraduate certificate in education (PGCE) or equivalent professional teaching qualification.
- C 5.1.6** Education providers should provide opportunities for lecturers, educators and teaching staff to undertake further development in either the; education, clinical, research or managerial roles.
- C 5.1.7** Teaching staff should be acceptable and appropriate to the education provider, commissioners and partnership organisations.
- C 5.1.8** A recommended tutor-to-student ratio for clinical skills is 1 to 8; a risk assessment should be carried out for the appropriateness and quality of learning achieved.

C 5.2 Student Paramedic Learning

This section explains expectations about how students' learning is developed during an undergraduate programme in paramedic science. In so doing, it draws together key tenets about the learning process.

The emphasis on the learning process reflects the importance of underpinning the curriculum with appropriate educational evidence. Students, who may have diverse learning styles, must be able to develop the required knowledge, performance, practical application of skills, and personal and professional awareness they need in preparation for future practice, as well as the aptitude for continued learning throughout their professional career.

A balanced curriculum employs a variety of teaching and learning strategies to encourage and enable critical clinical decision making, lifelong learning and collaborative working with a specific emphasis on the application of knowledge and understanding to practice. These all place equal emphasis on learning undertaken both during study and within placements and practice-based experiences.

Learning processes encountered by students during their programme of study should prepare them positively for the challenges and opportunities encountered as a professional registrant. On completion of a programme of study, graduates should be adequately equipped to practice as a registered paramedic, and be enabled to follow the paramedic career pathway. Programmes leading to professional registration should:

- C 5.2.1** Rigorously assess the safety and effectiveness of students in core areas of practice and prepare them appropriately for registration.
- C 5.2.2** Equip students with the necessary knowledge, performance, practical application of skills, and personal and professional awareness, required for career-long learning and development.
- C 5.2.3** Enable graduates to practice safely and effectively as registered allied health professionals who meet all the standards and requirements of the professional, statutory and regulatory bodies (PSRBs).

C 5.3 Curriculum Principles

The College of Paramedics accepts that individual HEI's utilise various methods of learning support for students, and these reflect the philosophy of the education provider. The following principles reflect the ethos of the professional body:

- C 5.3.1** Learning achieved in higher education and clinical practice settings possess equal value, each contributing in the same way to enrich and enable student fulfilment of the curriculum guidance outcomes.
- C 5.3.2** Learning opportunities in higher education and clinical practice settings should be wholly integrated, with acknowledgment of the reciprocal relationship between theory and practice.
- C 5.3.3** Effective learning in higher education and clinical practice settings requires a partnership approach between the HEI and partnership organisation(s), which should include all clinical practice settings.
- C 5.3.4** Students should be able to adapt in dynamic circumstances, furthering their existing knowledge and developing their ability to meet the demands of contemporary paramedic practice.
- C 5.3.5** Students should act in partnership with service users and carers, providing appropriate effective care, referral or discharge based on the patient's needs and current evidence-based practice.
- C 5.3.6** Students should be equipped to meet the demands of the evolution of the paramedic role and service provision as it arises.
- C 5.3.7** Students should be provided with the opportunity to demonstrate clinical skills in a simulated environment (where possible) prior to utilising the skill within clinical practice.

C 5.4 Learning and Teaching Approach, including Assessment Strategies and Aims

The following describe variations of learning and teaching principles of programmes of paramedic practice:

- C 5.4.1** Students should experience a range of teaching and learning strategies during their period of study; this could include lectures, seminars, workshops, small group activities, self-assessment, case studies, library based resources, skills development sessions, virtual learning, high-fidelity simulation and clinical practice based learning supported by appropriately registered and trained paramedic PEds.
- C 5.4.2** Innovative approaches to programme design and delivery, particularly within components of clinical practice based and inter-professional learning, are actively encouraged.

- C 5.4.3** The programme curriculum should contain various learning opportunities allowing knowledge and performance practical skill acquisition, using a range of activities and in a variety of settings. To be successful, students must be enabled and encouraged to transfer new knowledge and skills between areas.
- C 5.4.4** Recognising the significant contribution that clinical practice-based learning lends to curricula enhancement, allowing personal and professional awareness acquisition, identity and relationship formation, and enabling students to fulfil the curriculum outcomes.
- C 5.4.5** Truly integrating learning acquired and defined in higher education and clinical practice-based settings.
- C 5.4.6** Acknowledging that a prime purpose of paramedic education is to equip students with the aptitude, skills, curiosity and enthusiasm for ongoing learning throughout their professional career, while ensuring they have the capacity to practise safely and effectively in their initial post-qualifying employment (period of preceptorship)³.

C 5.5 Learning Philosophy Principles

The learning philosophy of educational programmes developing paramedics should be based on the following principles:

- C 5.5.1** Foster an enquiry-based learning approach, facilitating integration between academic and professional subjects, developing critical enquiry, reasoning and appraisal. Students should acquire a research-based enquiry approach to help critique their own practice so that, on successful completion of the programme of education, they possess accurate clinical-reasoning strategies, problem-solving abilities, practice evaluation, critical reflection and critical appraisal of the profession's evolving evidence base and application to practice.
- C 5.5.2** Selecting and using appropriate learning and teaching strategies – including simulation, workshops, taught sessions and clinical decision-making exercises – to develop students' knowledge and skills relevant to areas of infrequent exposure or limited experience including acknowledging the students' life experience, which can be developed and integrated throughout the programme. Developing transferable competencies, independent learning skills and knowledge of access to appropriate sources of support, advice and guidance. Developing an understanding of the relationships between different curriculum elements of the programme and appreciating the broad concepts and values that underpin paramedic practice in all settings and environments.

- C 5.5.3** Development takes place in learning environments, both academic and clinical, that support and enable students to experience and practice within the full range of the paramedic's role and responsibilities in varied contexts. Students appreciate the necessarily reciprocal relationship between theory and clinical practice as part of their professional development and learning. Recognise the central importance of deploying a problem-solving, reflective approach to all elements of professional practice.
- C 5.5.4** Promote consultation and collaboration between education and practice based staff through effective processes and a shared vision. Maintain strong support structures for students in clinical practice through regular contact, using clearly defined communication processes, between students, PEds (mentors) and link lecturers. Develop and prepare PEds, involved in student support, in partnership with relevant organisations to enhance the students' learning experience.
- C 5.5.5** Experience of student-centred learning, which utilises an approach that prepares a mode of enquiry, evidence-based application and an ability to respect individuals and problem solve within a team. Integrating service users' and students' views to plan education programmes, and encouraging students to recognise its contribution to service design, care provision and evaluation.
- C 5.5.6** Hold a capacity to recognise the scope of, and engage in, the appropriate transfer of knowledge, performance, practical application of skills and personal and professional awareness to different professional settings and situations, while having due regard for the limits of personal scope of practice. Providing an awareness of limitations for different clinical levels, and the necessity to seek advice from more appropriately qualified and/or experienced staff when appropriate.
- C 5.5.7** Prepare paramedics to meet the demands of patients in contemporary pre-and out-of-hospital unscheduled healthcare. At qualification students must demonstrate an ability to function as a paramedic, supported during a preceptorship programme³.
- C 5.5.8** Recognise the fundamental importance of developing a genuine commitment to the values encapsulated in the concept of patient partnership.

C 5.6 Learning and Teaching Strategies

Students can be assisted in achieving the curriculum guidance outcomes with sensitivity to particular needs of individual students in terms of access to the curriculum, with appropriate adaptations made to its delivery described in the following ways:

- C 5.6.1** Experience of student-centred learning, which utilises an approach that prepares a mode of enquiry, evidence application and an ability to respect individuals and problem solve within a team.
- C 5.6.2** Opportunities to engage in inter-professional learning with students from other disciplines, and to reflect on their learning, supported by appropriate tools and learning.
- C 5.6.3** Implementing a teaching and learning approach that facilitates the development of high-level cognitive skills (particularly relating to problem solving, clinical reasoning and the exercise of professional judgement) including learning facilitated through a range of activities and media (including computer-assisted learning where appropriate).
- C 5.6.4** Exposure to, and experience of, clinical practice in a diverse range of settings and environments, allowing the students to experience of a variety of patient presentations.
- C 5.6.5** Within the HE learning environment, students should benefit from belonging to strong peer groups, including those leading additional development opportunities. The College of Paramedics acknowledges that establishing such groups can be difficult, particularly within large student cohorts.
- C 5.6.6** Appropriate assessment strategies are integral to the development of student paramedics. The programme should contain opportunities for students to demonstrate their learning and technical competence through a variety of assessment formats. These should include assessments of theoretical knowledge, application of theory, practical performance of technical skills and application of patient management.
- C 5.6.7** Assessment strategies should provide students with timely, regular feedback about their progress and performance. A variety of feedback methods should be used – including audio-video recordings of practical assessments – to encourage self-directed learning and critical evaluation of performance.
- C 5.6.8** Educational programmes should always encourage and develop students' confidence to undertake self-assessment of their own development through reflection and evaluation. Identify areas of deficiency and strategies to develop further, and also to form judgements about their own performance with some accuracy and without external or formal input.

C 5.7 Assessment Strategies

- C 5.7.1** Combined approaches of assessment that enable programme providers to assess, and students to demonstrate, fulfilment of the curriculum guidance outcomes and competencies.
- C 5.7.2** Provision of formative assessments in addition to summative opportunities, ensuring students receive regular, detailed feedback on their performance and progress, and guidance on areas in which they need to develop their knowledge and skills further.
- C 5.7.3** Contain explicit and detailed guidance, including the assessment criteria against which learning is to be measured, on what is expected of students in each element of the assessment process.
- C 5.7.4** Robust assessment of students' ability to practice safely and effectively in the core areas of paramedic practice and their preparedness for professional practice on initial registration.
- C 5.7.5** Assessment strategies that ensure students are able to deliver key areas of patient management and interventions as expected by contemporary practice standards.
- C 5.7.6** A robust, ethical and transparent failures policy that clearly identifies the process to be followed if a student is unsuccessful in any element of the assessment process. The policy should include a fair appeals process.
- C 5.7.7** Milestones of student paramedic development should be recorded in a portfolio or practice assessment document, developed in partnership with the clinical practice placement provider.

C6 Preceptorship to Support Development

C 6.1 Preceptorship

From the moment of registration with the HCPC, paramedics are autonomous and accountable and, unlike many other professions, newly registered paramedics are often employed as lead clinicians from the outset of their career. It is widely acknowledged that, although deemed safe and competent at the point of registration, newly registered paramedics are ‘novice practitioners’ and that the period of time following registration can be challenging in this unique setting. It is therefore vital that newly registered paramedics have protected time and expert support to enable them to apply their knowledge, performance, practical application of skills and personal and professional awareness as well as develop their confidence as an autonomous professional. Through effective preceptorship it is anticipated that the newly registered paramedic will develop their confidence as an autonomous professional, who is able to deliver high-quality care for patients, clients and service users.

C 6.2 Defining Features of Preceptorship

Although not formally defined by the HCPC, preceptorship can be viewed as:

*‘A period of structured transition for the newly registered practitioner during which he or she will be supported by a preceptor to develop their confidence as an autonomous professional, refine skills, values and behaviours, and to continue on their journey of lifelong learning’.*³

Key to this transition is the ‘preceptor’:

*‘A registered practitioner who has been given formal responsibility to support a newly registered practitioner through preceptorship’.*³

Preceptorship is intended to provide a solid foundation for the journey from novice to expert and lifelong learning.

While defining preceptorship, it is also pertinent to identify what preceptorship is not. The Department of Health³ clearly sets the boundaries for preceptorship, advising that preceptorship is not:

C 6.2.1 Intended to address a shortfall in pre-registration education.

C 6.2.2 Intended to replace mandatory training programmes or induction to employment.

- C 6.2.3** An extended period of time when another registrant (the preceptor) takes responsibility for the newly registered paramedic's responsibilities or actions in practice.
- C 6.2.4** Clinical supervision, which in the UK refers to structured peer support and by registrants throughout their career^{49, 50, 51}.

C 6.3 Key Differences between Preceptorship and Mentorship

Preceptorship and mentorship are two mechanisms that support learning in the practice setting and, although it is acknowledged that there are certain overlaps between the two, for example the attributes of appropriate personnel who support learning⁵⁰, there are key differences between preceptorship and mentorship, and it is important that these differences are highlighted so that mentors and preceptors are clear about their role.

PEds primarily support students throughout their pre-registration programmes, supervising practice and assessing competence in the clinical practice setting, although it is acknowledged that they may also provide clinical support to experienced qualified members of staff. The student paramedic must be supervised and monitored by an appropriately educated and trained PED, registered with the HCPC as a paramedic, to ensure adequate support and time for the mentor to adequately assess the student's competence and fitness for practice. Qualified PEDs therefore are registrants who have appropriate experience – normally two years post registration – and have successfully achieved an appropriate recognised PED qualification.

Preceptorship relates specifically to the transition period from newly qualified practitioner to autonomous professional and may require a period of six months to a year, depending on the service setting. Preceptorship should not be viewed as an extension to existing training, but rather the means to facilitate the transition into professional practice.

The preceptorship period is important for developing essential critical thinking skills, both for the newly registered paramedic and the preceptor, and for this reason preceptorship should not be a distance or e-learning package that is completed in isolation³.

The content of preceptorship should be planned in relation to the professional responsibilities of the newly qualified paramedic and the needs of the employer. All learning undertaken within the preceptorship period should be recorded in a manner that meets the requirements of the Knowledge and Skills Framework (KSF) appraisal process⁵⁵, any employer probationary requirements, current CPD and the revalidation requirements of the HCPC in order to avoid duplication of effort³.

Throughout the preceptorship period, which may vary from six months to a year of the first post-registration role, a variety of learning methods should be available to enable a personalised approach that meets the needs of each newly registered paramedic. Theoretical knowledge can be facilitated by a preceptor, self-directed learning or e-learning. Practical skills and knowledge can be facilitated by a combination of support from an experienced practitioner, self-reflection and online support, as well as simulated practice in skills laboratories. Preceptorship is an essential building block, enhancing the foundations of the professional practice responding proactively to the demands of healthcare.

C 6.4 The Attributes of an Effective Preceptor

Skilled preceptors are key to the success of preceptorship programmes and they should be appropriately prepared and supported to undertake the role. The Department of Health³ outlines the attributes of an effective preceptor, indicating these may take up to two years from registration to develop:

- C 6.4.1** Giving constructive feedback.
- C 6.4.2** Setting goals and assessing competency.
- C 6.4.3** Facilitating problem solving.
- C 6.4.4** Active listening skills.
- C 6.4.5** Understanding, demonstrating and evidencing reflective practice ability in the working environment.
- C 6.4.6** Demonstrating good time management and leadership skills.
- C 6.4.7** Prioritising care.
- C 6.4.8** Demonstrating appropriate clinical decision making and evidence-based practice.
- C 6.4.9** Recognising their own limitations and those of others.
- C 6.4.10** Knowing what resources are available and how to refer newly registered practitioners appropriately if additional support is required, for example pastoral support or occupational health services.
- C 6.4.11** Being an effective and inspirational role model and demonstrating professional values, attitudes and behaviours.

C 6.4.12 Demonstrating a clear understanding of the regulatory impact of the care that they deliver and the ability to pass on this knowledge.

C 6.4.13 Providing a high standard of practice at all times.

C 6.5 Learning Strategies

The Department of Health³ identifies the following strategies through which learning may be achieved:

C 6.5.1 Organisationally based preceptorship, e.g. action learning sets, self-directed learning, clinical practice focus days, reflective practice shadowing and one to-one support.

C 6.5.2 Preceptorship facilitated in partnership with HEIs that is delivered through an academically accredited programme.

C 6.5.3 Work-based learning, e.g. portfolio building.

C 6.5.4 Web-based/blended learning programmes.

C 6.5.5 Attitudinal- and behavioural-based learning, e.g. through role modelling.

C 6.6 Standards of Preceptorship

A supportive preceptorship system will encourage and support individuals while ensuring that standards of proficiency are consistently achieved, thus reducing risks and maintaining high levels of patient care and safety in the pre- and out-of-hospital environment.

The benefits for stakeholders – newly registered professionals, employers, preceptors, the paramedic profession and, not least, the patients, clients and service users – when implementing preceptorship are well documented. To ensure that the benefits identified are realised an overarching standard for preceptorship is necessary, regardless of the preceptorship model adopted. The Department of Health³ suggests the following standards for preceptorship, which are supported and endorsed by the College of Paramedics:

C 6.6.1 Systems are in place to identify all staff requiring preceptorship.

C 6.6.2 Systems are in place to monitor and track newly registered paramedics from their appointment through to completion of the preceptorship period.

- C 6.6.3** Preceptors are identified from the workforce within the clinical areas; they must demonstrate the attributes outlined in Section C6.4.
 - C 6.6.4** Organisations have sufficient numbers of preceptors in place to support the number of newly registered practitioners employed.
 - C 6.6.5** Organisations demonstrate that preceptors are appropriately prepared and supported to undertake the role and that the effectiveness of preceptors is monitored through appraisal.
 - C 6.6.6** Organisations ensure that their preceptorship arrangements meet and satisfy both PSRB and KSF requirements.
 - C 6.6.7** Organisations ensure that newly registered practitioners understand the concept of preceptorship and engage fully.
 - C 6.6.8** An evaluation framework is in place that demonstrates benefits and value for money.
 - C 6.6.9** Organisations publish their preceptorship framework, facilitating transparency of goals and expectations.
 - C 6.6.10** Organisations ensure that evidence produced during preceptorship is available for audit and submission for potential verification by the HCPC.
 - C 6.6.11** Preceptorship operates within a governance framework.
- Due to the nature of paramedic practice newly registered paramedics, unlike other professionals, are usually employed at the point of registration as a lead clinician working alongside a support worker, therefore the College of Paramedics recommends the following during the first six months following registration:
- C 6.6.12** Paramedics should not respond in isolation.
 - C 6.6.13** During their first 150 hours post-registration, paramedics should have support from an experienced paramedic, with opportunities to access this support in their initial 12 months post-registration.
 - C 6.6.14** Paramedics should not undertake supervision of a new member of emergency support staff or peer for at least 12 months following registration.
 - C 6.6.15** A 24-hour advice line should be available to provide clinical support.

C7 Paramedic Leadership

C7.1 Leadership in Paramedic Practice

The College of Paramedics has adopted and integrated the NHS Clinical Leadership Competency Framework (CLCF)⁵³ within this curriculum guidance document and concurs with the supporting guidance for integrating the CLCF into education and training programmes⁵³. These resources provide a standardised and structured approach to leadership development. They have been agreed through extensive consultation with individual healthcare professionals and professional bodies; the CLCF has been purposefully designed to apply to every clinician at all stages (including student level) of their professional development and career journey.

C7.2 The Clinical Leadership Competency Framework

The CLCF is made up of five core 'domains', each supported by a number of 'elements'. The College believes that all five core domains apply to all paramedics, regardless of clinical practice level and career stage. The CLCF is designed to provide all paramedics, including student paramedics, with a supporting framework that relates to their current role, and opportunities for learning and development, for each domain. The domains are:

- Demonstrating personal qualities,
- Working with others,
- Managing services,
- Improving services,
- Setting direction.

There are two further CLCF domains, which have also been incorporated into the *Paramedic Curriculum Guidance*. These domains have been devised to provide specific guidance for those who are in (or are aspiring to) the most senior positions of leadership within the profession or organisations. These are:

- Creating the vision,
- Delivering the strategy.

C7.3 The Importance of Clinical Leadership

Clinical leadership is a key component of paramedic practice and has practical relevance to all aspects of the paramedic's role as an allied health professional. By

incorporating the CLCF and *Leadership Framework*⁵⁵ into this curriculum guidance document, the expectation is that the practical application and importance of leadership as part of day-to-day clinical practice will become established throughout the student paramedic's programme of education and continuing professional education.

Key Aspect of Clinical Leadership (CL)	Examples of Practical Relevance and Application
CL1 Role modelling/leading by example	Lead clinician and intervention primacy/supervising support staff
CL2 Leading improvements in care and services	Clinical audit and incorporating best practice into clinical practice
CL3 Improving patient experience and outcome	Suggesting changes and using data to drive improvement
CL4 Collaborating with other professional groups	Making Safe/Appropriate Patient Referrals
CL5 Public/population health focus	Falls Prevention in at-risk groups
CL6 Mentoring and coaching	Contributing to the development of junior clinicians
CL7 Shared leadership approach	Everyone has a leadership role to play
CL8 Leadership of self and others	Understanding how to improve own and others' decision making

The leadership attributes identified have been considered in accordance with the CLCF⁵³ and *Leadership Framework*⁵⁵ core domains described below. These are applicable to all paramedics, whether student paramedic, paramedic, specialist paramedic, advanced paramedic or consultant paramedic².

CLCF Core Domain and Elements	Practical Example and Application
Demonstrating personal qualities CL9 Developing self-awareness CL10 Managing yourself CL11 Continuing personal development CL12 Acting with integrity	<ul style="list-style-type: none"> ■ Leadership of self ■ Followership ■ Role modelling ■ Human factors ■ Effective communication ■ Situational awareness ■ Decision making/problem solving ■ Involvement in audit/research ■ Reflective practice ■ Coaching/mentoring

CLCF Core Domain and Elements	Practical Example and Application
<p>Working with others</p> <p>CL13 Developing networks</p> <p>CL14 Building and maintaining relationships</p> <p>CL15 Encouraging contribution</p> <p>CL16 Working within teams</p>	<ul style="list-style-type: none"> ■ Crew Resource Management (CRM) ■ Human factors ■ Cooperation ■ Team leadership/management ■ Lead clinician responsibilities ■ Intervention primacy ■ Concept of shared leadership ■ Managing referrals effectively ■ Multi-professional team working
<p>Managing services</p> <p>CL17 Planning</p> <p>CL18 Managing resources</p> <p>CL19 Managing people</p> <p>CL20 Managing performance</p>	<ul style="list-style-type: none"> ■ Crew Resource Management CRM ■ Team Leadership/Management ■ Decision making ■ Situational awareness ■ Systems thinking ■ Concept of shared leadership ■ Requirement for command/control ■ Managing referrals effectively
<p>Improving services</p> <p>CL21 Ensuring patient safety</p> <p>CL22 Critically evaluating</p> <p>CL23 Encouraging improvement/innovation</p> <p>CL24 Facilitating transformation</p>	<ul style="list-style-type: none"> ■ Clinical governance ■ Quality improvement ■ Improvement methodologies: Plan, Do, Study: Act (PDSA) ■ Using data to drive improvement ■ Systems thinking ■ ‘Toolkit’ for service and quality improvement ■ Audit/research/generating new knowledge
<p>Setting direction</p> <p>CL25 Identifying the contexts for change</p> <p>CL26 Applying knowledge and evidence</p> <p>CL27 Making decisions</p> <p>CL28 Evaluating impact</p>	<ul style="list-style-type: none"> ■ Contributing to the development of plans, policies, procedures and strategy (using data to drive improvement) ■ Systems thinking ■ Population based/whole systems ■ Translating policy and clinical evidence into practice

Additional Domains for Those in the Most Senior Positions of Management and Leadership Within the Profession/Organisation	
Additional Leadership Framework Domain	Practical Example and Application
<p>Creating the vision</p> <p>CL29 Developing the vision for the organisation</p> <p>CL30 Influencing the vision of the wider healthcare system</p> <p>CL31 Communicating the vision</p> <p>CL33 Embodying the vision</p>	<ul style="list-style-type: none"> ■ Development of vision for the profession, for organisations or for components of clinical practice ■ Population-based/whole systems approach to health, well-being, health promotion, public health etc.
<p>Delivering the strategy</p> <p>CL34 Framing the strategy</p> <p>CL35 Developing the strategy</p> <p>CL36 Implementing the strategy</p> <p>CL37 Embedding the strategy</p>	<ul style="list-style-type: none"> ■ Chief Executive, Director of Operations, Academic positions, Senior leadership within the profession / College of Paramedics. ■ Recognition that clinical leadership both relates to individual knowledge, skills and behaviours – and to the process of leadership – in the development of organisational policy, structure, systems, and culture to support clinicians (both individually and collectively).

Student paramedics are assessed throughout their programme of education using various tools that are designed to examine their knowledge, performance, practical application of skills, personal and professional awareness; these range from written and practical examinations to practice placements. Examples of how the assessment of the CLCF could be incorporated into programmes of paramedic science curricula is provided below; for further information refer to the guidance for integrating the CLCF into education and training⁵⁴. The CLCF⁵³ and additional domains from the Leadership Framework⁵⁵ are integrated within the College of Paramedics' Paramedic Curriculum Guidance to provide a framework and structure for leadership development within education, training and ongoing professional development programmes across all paramedic roles. The College of Paramedics has integrated the published guidance for integrating the CLCF into education and training⁵⁴ within this document to support the development and endorsement of paramedic education programmes.

C7.4 Extract of Examples of Assessment Method Suitability

Portfolio	✓	1.1 Developing self-awareness	1. Demonstrating Personal Qualities
Logbook	✓	1.2 Managing yourself	
Reflective writing	✓	1.3 Continuing personal development	
Feedback – tutor	✓	1.4 Acting with integrity	
Feedback – multi-source	✓	2.1 Developing networks	2. Working with Others
CEX	✓	2.2 Building and maintaining relationships	
Professional behaviour score	✓	2.3 Encouraging contribution	
Written examinations	✓	2.4 Working within teams	
Project report	✓	3.1 Planning	3. Managing Services
Audit (report)	✓	3.2 Managing resources	
Audit (assessment)	✓	3.3 Managing people	
Case-based discussions	✓	3.4 Managing performance	
Structured clinical assessments	✓	4.1 Ensuring patient safety	4. Improving Services
Meeting course requirements	✓	4.2 Critically evaluating	
	✓	4.3 Encouraging improvement and innovation	
	✓	4.4 Facilitating transformation	
	✓	5.1 Identifying the contexts for change	5. Setting Direction
	✓	5.2 Applying knowledge and evidence	
	✓	5.3 Making decisions	
	✓	5.4 Evaluating impact	

NHS Leadership Academy, 2011, p47

C8 Patient Safety Standards

C 8.1 Introduction

Patient safety has always been an important aspect of paramedic practice, be it on an individual patient basis or as part of a major incident. In 2004 the NPSA published guidance for NHS organisations⁵⁷, while in Scotland the Scottish Patient Safety Programme⁵⁸ provides evidence against national and international standards.

The former includes:

- Step 1:** Build a safe culture.
- Step 2:** Lead and support your staff.
- Step 3:** Integrate your risk-management activity.
- Step 4:** Promote reporting.
- Step 5:** Involve and communicate with patients and the public.
- Step 6:** Learn and share safety lessons.
- Step 7:** Implement solutions to prevent harm.

The Department of Health document *The Operating Framework for the NHS in England 2012/13*⁵⁹ provided five domains that further demonstrate how the paramedic profession enhances and contributes to patient safety.

Domain 1: Preventing people from dying prematurely

- Responsive ambulance services are critical for emergency patients. We expect the operational standards of 75 percent of R1 and R2 calls resulting in an emergency response arriving within eight minutes and 95 percent of R1 and R2 calls resulting in an ambulance arriving at the scene within 19 minutes to continue to be met or exceeded.

Domain 2: Enhancing quality of life for people with long-term conditions

- Unplanned hospitalisation for chronic ambulatory care sensitive conditions (adults).
- Unplanned hospitalisation for asthma, diabetes and epilepsy (in under-19s).
- Telehealth and telecare offer opportunities for delivering care differently but also more efficiently. Use of both of these technologies in a transformed service can lead to significant reductions in hospital admissions and lead to better outcomes for patients.

Domain 3: Helping people to recover from episodes of ill health or following injury: emergency admissions and re-admissions

- Commissioners should work with local providers, GPs, local authorities and local involvement networks (LINks) to ensure those initiatives are understood and used by their patients.
- Monitoring emergency admissions for acute conditions that should not usually require hospital admission.

Domain 4: Ensuring that people have a positive experience of patient care

- Accident and emergency services: the ability for local commissioners to impose fines through the operational standard of 95 percent of patients being seen within four hours (includes triage/handover).

Domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm

- Emergency preparedness, resilience and response continues to be a core function of the NHS, required in line with the Civil Contingencies Act 2004⁶⁰.
- All NHS organisations (including NHS ambulance trusts) are required to maintain a good standard of preparedness to respond safely and effectively to a full spectrum of threats, hazards and disruptive events, such as pandemic flu; mass casualties; potential terrorist incidents; severe weather; chemical, biological, radiological and nuclear incidents; fuel and supplies disruption; and public health incidents. Commissioners must also ensure that they maintain the current capability and capacity of existing HART and as appropriate SORT teams in NHS ambulance trusts.

C 8.2 Patient Safety Best Practice

In 2011 the WHO published a multi-professional patient safety curriculum guide⁶¹, which advocated best practice in healthcare; the College of Paramedics has incorporated and addressed the following topics:

- What is patient safety,
- Why applying human factors is important for patient safety,
- Understanding systems and the effect of complexity on patient care,
- Being an effective team player,
- Learning from errors to prevent harm,
- Understanding and managing clinical risk,
- Using quality improvement methods to improve care,

- Engaging with patients and carers,
- Infection prevention and control,
- Patient safety and invasive procedures,
- Improving medication safety.

The following sections provide guidance for education providers on how the ethos of best practice regarding patient safety can be incorporated into the paramedic curricula.

C 8.3 What is Patient Safety?

Patient safety is the requirement of all healthcare professionals including student paramedics to reduce the harm and suffering of patients and their families, as well as the economic benefits to improving patient safety. This must include the safeguarding of patients, particularly 'at risk' groups and the use of appropriate reporting and referral.

Paramedic Practice

(Curriculum 2015 Ref: **C3.1.1, CL 21, C7.3**)

Evidence clearly demonstrates that litigation against UK ambulance services has significantly increased during the past 10 years^{62, 63}. Scene assessment is a fundamental aspect of practice that provides the paramedic with the opportunity to evaluate actual and/or potential dangers to patients, relatives, bystanders, colleagues and self.

C 8.4 Why Applying Human Factors is Important for Patient Safety?

Human factors examines the relationship between human beings and the systems with which they interact; they include the inter-relationships between humans (paramedics), the tools and equipment they use in the workplace, and the environment in which they work. They incorporate the interactions between individuals, the task and the environment.

Paramedic Practice

(Curriculum 2015 Ref: **C1.4.6, C1.4.7, C1.7.1, C1.7.5, C1.7.6, C1.8.1**)

Paramedic practice incorporates and includes all aspects of human factors, especially ergonomics; an entrapped patient in a motor vehicle collision who requires IV fluids and analgesia, safe extrication and transportation to a specialist trauma unit presents differing human factors than the hospitalised COPD patient who requires conveyance to the X-ray department.

C 8.5 Understanding Systems and the Effect of Complexity on Patient Care

The modern-day healthcare system provides the opportunity to introduce students to the concept that a healthcare system is not a single entity but is made up of many elements, including units, departments, services, practices and organisations. This should include the complexity of relationships between patients, their carers, healthcare professionals and support services staff.

Paramedic Practice

(Curriculum 2015 Ref: **C1.3.7, C1.8.1, C1.8.4, C1.8.7, C4.2**)

Paramedic practice incorporates this ethos, with paramedics working on bicycles and motorcycles, in fast response units, ambulances and specialist units. As part of their initial education and training and career development they undertake placements in a variety of healthcare locations, including urban and rural settings. They develop expertise in a multitude of systems, ranging from GP services, hospitals, social services, minor injury/illness units, emergency services, specialist treatment centres (cardiac, stroke and trauma), and engage in relationships with individuals from every element in the course of dealing with the patient and their needs.

C 8.6 Being an Effective Team Player

Students' understanding of teamwork must include identifying that the ethos of teamwork exceeds that of their profession. It should include them knowing and understanding the benefits of multi-disciplinary teams, and how these can improve patient care while simultaneously reducing errors. They should understand that effective teams are those in which the members, including the patient, communicate with one another, combining observations, expertise and decision-making responsibilities, thereby optimising patient care. Communication and the flow of information between healthcare personnel are similarly important, ensuring that the patient does not have to repeat the same information to numerous healthcare professionals, and allowing timely diagnosis and treatment.

Paramedic Practice

(Curriculum 2015 Ref: **C1.5.7, C1.5.8, C1.7.1, C1.7.4, C1.7.8, C1.8.1, C1.8.5, C1.11.4, C1.11.9**)

Paramedic practice involves paramedics working with numerous multi-disciplinary teams within the NHS, including elements that range across the life spectrum, and other UK emergency services and agencies as appropriate to the incident, including at times military personnel teams. Communication is central, be it in a written, digital, electronic, verbal or non-verbal context, obtained on a one-to-one basis or as part of dealing with multiple casualties and agencies when managing a major incident.

C 8.7 Learning From Errors to Prevent Harm

An understanding of why healthcare professionals make errors is essential to them understanding why poorly designed systems and other factors contribute to mistakes occurring in healthcare systems. While errors are a fact of life, the resulting consequences on patient outcome, their families and health professionals can be devastating. To enable students to prevent mistakes from occurring and to learn from them, they need to understand how and why systems break down and why mistakes occur. The need for a system-based approach that seeks to understand all the influencing factors is considerably better than a person-based approach, which endeavours to seek to apportion blame to people for their individual mistakes. Evidence was published⁶⁴ 20 years ago that explained how mistakes made in healthcare situations could be examined and evaluated to enable learning from these errors rather than blaming those involved.

Paramedic Practice

(Curriculum 2015 Ref: B3, **C1.5.1, C1.5.3, C1.5.6, C1.7.4, C1.9.1, C1.9.2, C1.9.6, C7.3**)

Paramedic practice has evolved immensely during the past 20 years; internal and external incidents have resulted in the implementation of new policies and procedures including legislation changes being introduced into practice, e.g. the Disclosure and Barring Service (DBS)³³, and occupational health screening of exposure-prone procedures³⁴.

C 8.8 Understanding and Managing Clinical Risk

Students should understand that clinical risk management is principally concerned with maintaining safe systems of care. It typically involves a number of systems or processes within organisations that are designed to recognise, control and prevent unfavourable outcomes. Risk management includes every level of the organisation, therefore students need to understand the strategies and procedures utilised within their workplace. Managing complaints and making improvements to practice and procedures from the investigation of these, through to knowing how to utilise the information from complaints, litigation, incident reports and coroners' reports, are various examples of clinical risk-management strategies.

Paramedic Practice

(Curriculum 2015 Ref: **C1.5.6, C1.7.6, C7.3, CL23**)

The paramedic profession has, since its evolution, incorporated the ethos of clinical risk management into practice; this includes the activity of risk assessments prior to undertaking patient movement/transfers through to reporting faulty equipment and providing witness statements for coroners' inquests.

C 8.9 Using Quality Improvement Methods to Improve Care

During the past 10 years healthcare services and organisations have successfully implemented various quality improvement processes that were previously utilised by other industries. These processes provide healthcare individuals with the ability to:

- a) Identify the problem,
- b) Measure the problem,
- c) Develop a range of interventions to fix the problem,
- d) Test to see whether the interventions worked⁶¹.

Understanding this process provides the student with the opportunity to examine each element in the process of care, thus allowing them to distinguish how each element is connected and able to be gauged.

Paramedic Practice

(Curriculum 2015 Ref: **C1.9.2, C1.9.3, C7.3, CL23, CL24, CL25, CL26, CL27, CL28**)

Paramedic practice has incorporated several quality-improvement processes during the past 20 years to enable changes and improvements in practice. Manual handling is a specific area of practice that has been utilised into daily working processes^{65,66}, with further recommendations occurring due to the needs of bariatric patients⁶⁷.

C 8.10 Engaging with Patients and Carers

Students should know that the modern-day healthcare team incorporates the patient and carers as key members, thus ensuring that they receive safe and effective healthcare by:

- a) Assisting with diagnosis,
- b) Deciding on the appropriate treatment,
- c) Choosing an experienced (safe) provider,
- d) Ensuring that the treatment is administered appropriately,
- e) Identifying any adverse effects/events and that appropriate action is taken.

Patients bring expertise through knowledge of their symptoms, pain, preferences and attitudes to risk, and it is evident that errors are reduced when there is good communication between patients, carers and the healthcare professional or teams.

Paramedic Practice

(Curriculum 2015 Ref: **C1.5.5, C1.7.5, C1.7.7**)

The clinical scope of practice for paramedics has changed radically and continues to evolve at an increasing pace, with greater emphasis on critical clinical decision making, treatment and more appropriate discharge or referral rather than the historical focus on transportation. There is now a greater responsibility for appropriately assessing patients and involving them to enable effective evidence-based decisions on where they will be best managed within the healthcare system.

C 8.11 Infection Prevention and Control

The problem of infection is well known and students should be aware of the types of procedures that place patients at risk of infection. HAIs are a major cause of death and disability, not just in the UK but worldwide. Around 40 percent of all HAIs are due to either surgery or invasive procedures. Students should be aware of the main causes and types of infection, and the procedures that place patients at risk, to enable them to implement the appropriate action(s) to prevent transmission.

Paramedic Practice

(Curriculum 2015 Ref: **C1.2.4, C1.2.6, C1.4.7, C1.6.1, C1.7.1, C1.7.9, C1.8.1**)

Infection control commences at the point of application, with paramedics undertaking the appropriate occupational health screening and vaccinations, and education and training on the relevant PPE. Paramedic practice frequently occurs in non-sterile environments, which increases the risk of infection. The guidance for reducing infection in the pre-hospital environment⁶⁸ should be followed throughout practice.

C 8.12 Patient Safety and Invasive Procedures

The student should be aware that harm caused by surgery will have an impact on their practice. While most problems in the hospital environment involve either the wrong patient or site, the following are applicable in paramedic practice:

- a) Invasive procedure performed on the incorrect side (needle chest decompression)
- b) Incorrect procedure performed
- c) Failure by team members to communicate changes in the patient's condition
- d) Disagreements about terminating resuscitation procedures
- e) Failure to report and/or document errors.

By including this ethos into the curriculum, it will enable the student to understand that patients should be treated in accordance with current policies and procedures.

C 8.13 Improving Medication Safety

The WHO⁶⁹ defines an adverse drug reaction as ‘any response to a medication that is noxious, unintended and occurs at doses used for prophylaxis, diagnosis or therapy’.

Patients are vulnerable to mistakes being made, particularly in the administration of drugs. Adverse events relating to errors of drug administration include calculation errors, confusion regarding the name of the medication and poor history taking.

Paramedic Practice

(Curriculum 2015 Ref: **C7.3, C1.1.1, C1.1.5, CL12**)

Registered paramedics can administer a range of medicines on their own initiative for the immediate, necessary treatment of sick or injured persons without the usual requirement for a prescription or directions of a prescriber⁴⁴. The administration of drugs in practice occurs in some instances where the paramedic is a solo responder and, as such, has the added responsibility to ensure safe administration and recording of all drugs administered.

Development in Specialist and Advanced Practice

For several years a number of different terminologies have been utilised to describe specialist and advanced paramedics, such as:

- Practitioner in emergency care
- Emergency care practitioners
- Community paramedics
- Paramedic practitioners
- Critical care paramedics
- Urgent care paramedics.

The College of Paramedics considers the term ‘specialist paramedic’ to relate to paramedics that specialise in urgent and emergency care, critical care, research, education, managerial and other emergent arenas. Paramedics operating at a higher level than paramedics in the field of emergency, urgent or unscheduled care should have been educated in a higher education environment (pre- or post-registration) to a minimum of postgraduate diploma level or equivalent in light of the recommendations of the College of Paramedics and the Paramedic Evidenced-Based Education Project³⁶. By standardising the term ‘specialist paramedic’ it allows the patient, the public and other AHPs to understand with increased clarity the various new and emergent roles.

Advanced paramedic roles remain the domain of experienced paramedics, usually emerging from specialist roles – including education – and are expected to be actively involved in research, development and postgraduate studies applicable to their role.

The focus on the specialist paramedic in both urgent and emergency, and critical care has become increasingly important over recent years, with increasing expectation for ambulance services to deliver the right care in the right place, first time. Clinical leadership⁵³ is an essential requirement in healthcare and is now routinely being delegated to the specialist and advanced paramedic roles. This was emphasised in various documents including: *Taking Healthcare to the Patient – Transforming NHS Ambulance Services*²⁵, and *A Vision for Emergency and Urgent Care – The Role of Ambulance Services*⁷⁰, which both emphasised the need for ambulance services to deliver more effective care to patients with non-life threatening injuries/illnesses. Indeed, the Association of Ambulance Chief Executives (AACE) report *Taking Healthcare to the Patient 2: A Review of 6 Years’ Progress and Recommendations for the Future*²⁶ highlighted the urgency of having paramedic specialism roles to support the undifferentiated care pathways that continue to challenge the modern ambulance service.

Increasing demand on ambulance services (see Section A) and hospital trusts has resulted in an increasing need to deliver more appropriate community care to patients. There is an ever-increasing expectation for ambulance services to reduce conveyance rates to emergency departments, and it is here that the role of specialist paramedic in primary care is incredibly important.

Specialist Paramedics in Urgent and Emergency Care are able to deliver a more appropriate level of assessment and, indeed, care to patients in the community and access many more referral pathways. The report on the paramedic workforce by the Centre for Workforce Intelligence (CfWI)⁷¹ identifies the need for an increase in both specialist and advanced paramedics to meet the increasing workload of medical problems, minor injuries and illnesses, and social-related issues.

Since the production of the previous curriculum guidance and the publication of the National Audit Office (NAO) report on trauma²⁸, the number of specialist paramedics involved in critical care has been ever increasing. The report from the Ambulance Service Network – The NHS Confederation⁷⁰ has further investigated the role of these specialists and the part they have to play in pre- and out-of-hospital emergency medicine, with a clear focus on the critical care patient.

It is apparent that a number of different operating systems have gradually developed across the country, with specialist paramedics in critical care having a wide-ranging and continuously evolving skill set. Some critical care units are ground-based while others operate as part of HEMS teams. This guidance is seen as applicable across all areas of operation regardless of mode of transport or dispatch.

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Glossary

Accreditation of Prior and Experiential Learning (APL and APEL)

APL is used in higher education for the purpose of entry on to a course or to obtain credit against some of the learner outcomes of the course or programme. It is a process that enables people of all ages, backgrounds and attitudes to receive formal recognition for skills and knowledge they already possess. APEL is an extension of APL and includes assessed learning gained from life and work experience. A person's learning and experience can be formally recognised and taken into account to gain entry to further or higher education courses, or to give exemption from certain parts of a new course of study or to qualify for an award in an appropriate subject in higher education. While this may differ between universities, current regulations only permit a maximum of 50 percent of a course/programme to be awarded against either APL or APEL.

Acute Coronary Syndrome (ACS)

ACS refers to any group of symptoms attributed to obstruction of the coronary arteries. The most common symptom prompting diagnosis of ACS is chest pain, often radiating from the jaw, pressure-like in character, and associated with nausea and sweating. ACS usually occurs as a result of one of three problems: ST elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI) or unstable angina.

Advanced Paramedic

Advanced Paramedics are experienced autonomous allied health professionals who are patient-focused and are responsible and capable of delivering safe, effective and appropriate treatment to patients with urgent, emergency, and unscheduled healthcare requirements. Their focus includes the care of acutely ill patients at initial presentation, and those who present with an acute exacerbation of a chronic illness or disease, and are capable of and provide patients with a wider range of care and treatment, including at the scene for critically ill and injured patients, and provide patients with a holistic approach to health care. Advanced Paramedics will have developed in either the Urgent & Emergency or Critical Care role of a Specialist Paramedic and have a significant portfolio of evidence and expertise, and may have developed in a clinical leadership role. In the future as the legislation is amended, the potential to develop their clinical expertise further by aspiring and becoming a Paramedic Independent Prescriber.

Allied Health Professionals (AHPs)

Paramedics make up one of 12 groups of allied health professionals registered with the Health and Care Professions Council. Sometimes this collective group is referred to when discussing all health workers, but generally it excludes doctors, nurses and midwives.

Ambulance Service Association (ASA)

This association used to represent the views of the NHS ambulance services; it has been superseded by the AACE.

Association of Ambulance Chief Executives (AACE)

The AACE provides ambulance services with a central organisation that supports, coordinates and implements nationally agreed policy. It also provides the general public and other stakeholders with a central resource of information about NHS ambulance services. The primary focus of AACE is the ongoing development of the English ambulance services and the improvement of patient care.

British Paramedic Association (BPA)

Founded in 2000, the former title of the College of Paramedics, the professional body of paramedics. The title was changed in 2007 following many requests by members in Northern Ireland, Scotland and Wales not to use the title 'British'.

BSc Hons

This level/grade of education is level six on the academic pathway and is typically representative of three years' full-time education and achievement of 360 credits (120 at level 4 certificate, 120 at level 5 diploma and 120 at level 6 degree).

Call Taking Advice/Clinical Support Desk (CTA/CSD)

Different NHS trusts utilise paramedics who work in emergency operation centres to ensure that patients receive the right response at the right time and in the right place for them. Patients are reassured and assessed over the phone. Those who do not need a paramedic response are offered another route to treatment. CTA/CSD paramedics can, and do, arrange visits from GPs or social workers, provide patients with simple first aid advice or refer them to local walk-in centres or pharmacies, ensuring they get the right treatment for them. They are also available to provide clinical support and advice to less-experienced paramedics operating in the practice environment.

Cardiopulmonary Resuscitation (CPR)

Commonly known as CPR, it is an emergency procedure performed in an effort to manually preserve intact brain function until further measures can be taken to restore spontaneous blood circulation and breathing in a person in cardiac arrest. It is indicated in patients who are unresponsive and not breathing (apnoea) or are breathing abnormally (agonal respirations).

Centre for Workforce Intelligence (CfWI)

The CfWI is a key contributor to the planning of future workforce requirements for health, public health and social care. Commissioned by the Department of Health, to look at specific workforce groups and pathways, including the report on Paramedics in 2012.

Certificate (Cert)

This level/grade of education is level 4 on the academic pathway and is typically representative of one year of education and the achievement of 120 credits at level 4. It is the building block for further studies at diploma level.

Chemical, Biological, Radiological and Nuclear (CBRN)

Protective measures must be taken in situations in which any of these four hazards are present. To account for improvised devices, the term CBRNe ('e' for explosives) is used. CBRN defence consists of CBRN passive protection, contamination avoidance and CBRN mitigation. HARTs have been developed to provide specialist responses to these threats.

Chronic Obstructive Pulmonary Disease (COPD)

COPD is a lung disease characterised by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The more familiar terms 'chronic bronchitis' and 'emphysema' are no longer used, but are now included within the COPD diagnosis.

Clinical Leadership Competency Framework (CLCF)

The CLCF describes the leadership competencies that clinicians need to become more actively involved in the planning, delivery and transformation of health and social care services. The CLCF is built on five key leadership domains utilised to improve the quality and safety of health and care services. It is essential that paramedics are competent in each of the domains.

College of Paramedics

Founded in 2000, the College of Paramedics (formerly the British Paramedic Association) is the professional body of the paramedic profession. It is responsible for leading the development of the profession, including producing paramedic curriculum guidance, paramedic career framework, and the paramedic post registration curriculum, and scope of practice.

Consultant Paramedic

Consultant paramedics usually hold or are working towards a doctorate award and practice within the Department of Health guidance for AHP consultant appointments. Core responsibilities include an organisational development role in areas of new and innovative clinical practice. Working at a strategic or executive level, they will be developing new care pathways while liaising with central health policy makers. Connected to their trust's medical directorate and research and audit teams (through primary research), they will be instigating and reviewing care pathways.

Continuing Professional Development (CPD)

The HCPC define 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'. Put simply, CPD is the method through which paramedics continue to learn and develop throughout their careers to enable them to keep their skills and knowledge up to date and to be able to work safely, legally and effectively.

Council of Professions Supplementary to Medicine (CPSM)

Prior to the formation of the then Health Professions Council, the CPSM was the regulatory body for the registration of health professionals including paramedics.

Department of Health (DH)

Is the Ministerial Department of the United Kingdom Government responsible for policy on health and social care matters in England, along with some elements of the same nature which are not otherwise devolved to the Scottish and Welsh Governments or Northern Ireland Executive. It oversees the National Health Service (NHS) in England. The Department of Health develops policies and guidelines to improve the quality of care and met patient expectations.

Diploma (Dip HE)

This level/grade of education is level 5 on the academic pathway and is typically representative of two years of education and achievement of 120 credits at level 4 and 120 credits at level 5. It is the building block for further studies at degree level.

Disclosure and Barring Service (DBS)

The Criminal Records Bureau (CRB) and the Independent Safeguarding Authority (ISA) have merged to form the DBS. CRB checks are now called DBS checks. An enhanced DBS check is required for working in healthcare prior to working with vulnerable adults and children. Different rules apply in Scotland and Northern Ireland.

Education Provider

Any organisation providing training or education. This usually means a higher education facility when referring to pre-registration approved and endorsed paramedic programmes, however, it could mean a Further Education (FE) college until 2019 when the threshold is anticipated to move to a degree led profession.

Electives

An elective represents a unique opportunity for student paramedics to experience healthcare in a setting unfamiliar to that in which they are accustomed to studying. It also provides the opportunity for student paramedics to develop their skills by observing and participating in healthcare overseas. Students typically embark on elective placements abroad, often in the developing world or in countries where scientific, social, economic or cultural standards differ from those found in the student's country of study. However, as overseas electives can be expensive, some students opt for elective placements in the same country.

Electrocardiogram (ECG)

A trans-thoracic (across the thorax or chest) interpretation of the electrical activity of the heart over a period of time, as detected by electrodes attached to the surface of the skin and recorded by a device external to the body. The recording produced by this non-invasive procedure is called an electrocardiogram (the abbreviation EKG is also used).

Emergency Care Assistant (ECA)

A support worker role that is emerging to support the paramedic in an ambulance crew setting. It is a driving and lifting role with minimum hands-on clinical care, other than in an emergency. Also known as emergency care support worker (ECSW).

Emergency Care Practitioner (ECP)

A role that was originally developed from the practitioner in emergency care role, which was designed to be a more generic practitioner drawn from a wider range of clinical staff including nursing. (This title is no longer used by the professional body). This has proved somewhat problematic in relation to paramedics as the title did not match HCPC regulation requirements. This role has been absorbed into specialist paramedic – urgent and emergency care.

End of Life Care (EoLC)

For allied health and medical professionals EoLC refers to the healthcare of patients not only in the final hours or days of their lives, but more broadly the care of all those patients with either a terminal illness or condition that has become advanced, progressive or incurable.

End Tidal CO₂ (EtCO₂)

The monitoring of the concentration or partial pressure of carbon dioxide (CO₂) in the respiratory gases. It is usually presented as a graph of expiratory CO₂ plotted against time or, less commonly but more usefully, expired volume. The plot may also show the inspired CO₂, which is of interest when rebreathing systems are being used.

Hazardous Area Response Team (HART)

Provides medical care to patients in hazardous or 'hot' environments. They utilise special vehicles and equipment. HARTs originated from a 2004 report on the feasibility of paramedics working in the inner cordon or 'hot zone' of major incidents. They are activated to situations such as explosions, building collapses and chemical incidents (* Scotland has its own equivalent of HART, they are known as Special Operations Response Teams (SORT)).

Healthcare-Acquired Infection (HAI)

A HAI is a localised or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) that was not present prior to being treated by a healthcare professional or on admission to a healthcare facility.

Health and Care Professions Council (HCPC)

The regulatory body for all AHPs. Based in Kennington, London, they are the protectors of the public and maintain the registers of practitioners who work under protected titles providing healthcare to the nation. They also approve education providers to deliver pre-registration programmes that meet the appropriate HCPC standards of proficiency and standards of education and training, and investigate complaints of fitness to practice.

Health and Safety Executive (HSE)

The HSE is the national independent watchdog for work-related health, safety and illness. They are an independent regulator and act in the public interest to reduce work-related deaths and serious injuries across the UK.

Higher Education Institutes (HEI)

Universities that are affiliated and working in partnership with NHS ambulance trusts in delivering programmes of higher education for paramedic pre-registration and CPD. Some programmes are currently commissioned.

Joint Royal Colleges Ambulance Liaison Committee (JRCALC)

Advisory board on clinical matters for the ambulance service reporting to Department of Health. Responsible for overseeing national clinical guidelines in collaboration with the AACE.

Knowledge and Skills Framework (KSF)

The KSF is a useful tool for ensuring there is ongoing and relevant career development for all individuals who can, and do, move around within the health economy. Members can more readily understand the next steps up and down the career ladder and develop according to a common framework. The KSF does not apply to the entire UK and is not recognised in private practice.

Medical Commission on Accident Prevention (MCAP)

Instrumental on developing the paramedical role from intubation and infusion towards more formal education with a report written in 1979 by Dr Bernard Lucas on trauma. He suggested paramedics should be trained in advanced resuscitation techniques.

Medicines and Healthcare Products Regulatory Agency (MHRA)

The MHRA is responsible for regulating all medicines and medical devices in the UK by ensuring they work and are acceptably safe, it also includes the National Institute for Biological Standards and Control (NIBSC) and the Clinical Practice Research Datalink (CPRD). The MHRA is an executive agency of the Department of Health.

National Ambulance Resilience Units (NARU)

Since February 2012, responsibility for delivery of emergency preparedness policy in ambulance services in England has been delegated to the NARU; it is funded by the Department of Health.

National Audit Office (NAO)

The National Audit Office (NAO) scrutinises public spending on behalf of the government. By reporting the results of audits, they hold government departments and bodies to account for the way they use public money, thereby safeguarding the interests of taxpayers. In addition, their work aims to help public service managers improve performance and service delivery.

National Health Service (NHS)

Founded in the UK in 1948, the NHS provides free medical care at the point of access and is paid for through taxes.

National Health Service Training Directorate (NHSTD)

The NHSTD was the government body responsible for providing the award of the extended training paramedic schemes in the early 1990s in the UK. This was superseded by the Institute of Healthcare Development (IHCD) in 1994, which has now been subsumed into Edexcel.

National Patient Safety Agency (NPSA)

On 1 June 2012 the key functions and expertise for patient safety developed by the NPSA transferred to the NHS Commissioning Board Special Health Authority. The NHS Commissioning Board Special Health Authority will harness the power of the National Reporting and Learning System (NRLS), the world's most comprehensive database of patient safety information, to identify and tackle important patient-safety issues at their root cause.

Paramedic Educator (PEd)

A paramedic who undertakes the clinical and education responsibilities of supporting and developing student paramedics within the clinical practice environment. PEds are HCPC registered and must have undertaken an appropriate course of education and training for the role. Anticipated that all future will have been prepared for the role with a mentoring qualification at the appropriate HE level 6/SCQF level 10.

Paramedic Evidence-based Education Project (PEEP)

Commissioned in 2012 by the DH Allied Health Professional Advisory Group – funded by the College of Paramedics. Reporting in August 2013, it provides an evidence base to progress the strategic direction of the standardisation of education and training, and also recommended fair access to funding support and enhancing the threshold of entry to the profession.

Postgraduate Certificate in Education (PGCE)

The PGCE is a Department for Education-recognised teaching qualification. Courses are available at universities and colleges throughout the UK. It may also be possible to study for a PGCE via flexible distance learning. Courses generally last for one year full-time or up to two years part-time.

Practice Placement Areas

Practice placement areas are unique settings for the practice placement learning outcomes to be achieved. These locations provide a rare and exceptional opportunity for inter-professional learning for the developing student paramedic. Practice placement provides the opportunity for the individual to transfer the learning and skills gained from the academic environment into the clinical practice arena, supported by an experienced healthcare practitioner.

Preceptorship

A period of structured transition for the newly registered HCPC paramedic during which he or she will be supported by a preceptor to develop their confidence as an autonomous professional, refine skills, values and behaviours, and to continue on their journey of lifelong learning.

Professional, Statutory and Regulatory Bodies (PSRBs)

The College of Paramedics is the professional body for the paramedic profession in the UK. Universities are the statutory bodies responsible for delivering and awarding higher education qualifications. The regulatory body is the HCPC, which regulates all AHPs including paramedics.

Quality Assurance Agency (QAA)

The role of the QAA for Higher Education is to safeguard public interest in sound quality and standards in UK universities and colleges. It ensures that students have the best possible learning experience and encourages continuous improvement in the quality of higher education.

Recognition of Life Extinct (ROLE)

The procedure undertaken when resuscitation attempts are considered futile or there is a do not attempt resuscitation (DNAR) order or advanced decision (living will) in place or, despite a period of 20 minutes of advanced life support being undertaken, the patient remains asystolic.

Roland Furber

The first chief executive of the British Paramedic Association, later renamed the College of Paramedics. Roland had an illustrious career in the ambulance world, rising to Deputy Chief Officer of Derbyshire. Roland co-authored and delivered the first national paramedic course at Banstead in Surrey in 1985.

Scope of Practice

A description explaining the range of working practices for the individual practitioner; it defines not only what they can do but also articulates the boundaries of what they cannot do.

Specialist Paramedic

Specialist Paramedics are experienced autonomous allied health professionals who are patient-focused and are responsible and capable of delivering safe, effective and appropriate treatment to patients with urgent, emergency, and unscheduled healthcare requirements, including management at the scene, or in-hospital of critically ill and injured patients. Their focus includes the care of acutely ill and/or injured patients at initial presentation, and those who present with an acute exacerbation of a chronic illness or disease.

Supernumerary

Students need to be supported and developed in clinical practice during their placement periods and this is provided by a qualified PEd or appropriate registered healthcare professional. The direct entry pre-registration student must always be in a supernumerary capacity to ensure both the safety of the patient and the growing confidence of the individual student. In house employed ambulance staff who upgrade to paramedic on suitable programmes will be expected to undertake at least 225 hours of supernumerary placement on NHS ambulances, which is approximately 30% of the direct entry (HEI student who has significantly less clinical experience).

Unscheduled care

Unscheduled care is any unplanned contact with the NHS by a person requiring or seeking help, care or advice. Such demand can occur at any time and services must be available to meet this demand 24 hours a day; it includes urgent care and emergency care.

Appendix A

Partnership Agreement with Higher Education Institutions

The College of Paramedics has developed a partnership agreement for HEIs that would see benefit to the standing of their programmes through input by the College of Paramedics and listing as a HEI partner on the College's website.

The partnership agreement offers HEIs the opportunity to receive advice and support from the College and an enhanced profile among potential paramedic students. There is an annual fee to HEIs wishing to take up the partnership agreement.

Benefits to HEIs from the Partnership Agreement

- A College representative will attend once a year to meet with students registered on the HEI's paramedic science programme(s).
- Attendances will include a presentation on the aims and objectives of the College, current issues in pre- and out-of-hospital care and paramedic practice, and general advice on preparing to apply for positions and joining the paramedic profession.
- The College will provide one student prize for each year group on a category and student nomination recommended by the HEI. The prizes will comprise book tokens for the winning first-year student; a College of Paramedics' item (selected from its online shop range) for the winning second-year student, and a College of Paramedics mounted and inscribed crest for the winning third-year student.
- A representative of the College of Paramedics' Education Advisory Committee will meet with the partner HEI representative on an individual basis once a year. Meetings will be face-to-face wherever possible but may be conducted by telephone or video conferencing facilities if agreeable to both parties.
- Partners will be listed on the College of Paramedics' website as HEI partners, which will contain a link to the HEI's website to enable advertising and promotion of its paramedic course(s).
- The HEI will be entitled to use a special College logo accompanied by the qualification 'An official partner of the College of Paramedics' on its promotional material. This logo and qualification differs from that given to HEIs and education providers whose materials have been content reviewed and endorsed by the College and should not be used for any other purpose than that of partnership status.

To request a copy of the HEI partnership agreement policy and application process, or to obtain further information, please contact either of the following:

■ Head of Administrative Services

Ms P. Jones
College of Paramedics
The Exchange
Express Park
Bristol Road
Bridgwater
Somerset
TA6 4RR
Email: penny.jones@collegeofparamedics.co.uk
Telephone: 01278 420014

■ Head of Endorsements Lead

Mr B. Fellows
Address as above
Email: bob.fellows@collegeofparamedics.co.uk
Telephone: 01278 420014

Appendix B

Paramedic Pre-Registration Programme Endorsement Agreement

The College of Paramedics has developed an endorsement process for higher education providers that would provide benefit to the standing of their pre-registration programme(s) through the College of Paramedics listing it as an endorsed programme.

The endorsement agreement represents a full endorsement of course content and design by the College and confirms that a particular course curriculum is consistent with the College's paramedic pre-registration programme endorsement process. There is a fee to HEIs wishing to pursue formal College endorsement.

Process for the Pre-Registration Programme Endorsement and Re-Endorsement of an Academic Programme Review

On receipt of the HEI's application for endorsement of a pre-registration paramedic programme, the College of Paramedics will appoint two visitors who will undertake a review of the submitted programme and undertake a visit to meet with members of the programme team.

Endorsement will be concurrent with the existing period of academic approval, after which time the education provider may wish to extend the endorsement agreement.

Consultation over further endorsements will be coordinated by the chair of the College's Education Advisory Committee. A visit may not be required for a re-endorsement application.

Period of Endorsement Agreement

The period of the College of Paramedics' endorsement will coincide with HCPC approval where possible, and be concurrent with the education provider's academic approval period of five years. For a retrospective endorsement the period of endorsement will be until the education provider's next academic programme review. If the application is for an academic programme review (a renewal) then the period of re-endorsement will be for a further five years.

To request further information on the HEI paramedic pre-registration programme endorsement agreement and application process, please contact either of the following:

■ Head of Administrative Services

Ms P. Jones
College of Paramedics
The Exchange
Express Park
Bristol Road
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Email: penny.jones@collegeofparamedics.co.uk
Telephone: 01278 420014

■ Head of Endorsements Lead

Mr B. Fellows
Address as above
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Telephone: 01278 420014.

Appendix C

Part A – Curriculum Editing Team

The College of Paramedics wishes to thank the following members who have contributed to the editing and final production of the 3rd edition (Revised) of the College of *Paramedics' Paramedic Curriculum Guidance*.

Martin Berry MCPara

Executive Officer
College of Paramedics

Bob Fellows FCPara

Head of Endorsements Lead
College of Paramedics

Graham Harris MCPara

Director of Professional Standards
College of Paramedics

Part B – Curriculum Review Team

The College of Paramedics wishes to thank the following individuals and members who have contributed to the review of the 3rd edition (Revised) of the College of Paramedics' *Paramedic Curriculum Guidance*.

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Director of Professional Standards
College of Paramedics

James Petter FCPara

Head of Education & Development
South Western Ambulance Service NHS Foundation Trust

Appendix D

Summary of Recommendations

The executive team and Professional Standards Group of the College of Paramedics has produced the following recommendations for paramedic programmes in the UK. The recommendations are based on an independent commissioned review, extensive dialogue with educationalists, employers and paramedics themselves, and reflect the future-facing perspective that is necessary for the paramedic profession to maintain fitness for purpose.

B1 Curriculum

The development of safe and competent practitioners should be the priority for providers of paramedic education. Accordingly, paramedic programmes should address the range of patients encountered throughout the lifespan, from birth to older adults. Programmes should also ensure that relevant topics are specifically focused to include particular patient groups, such as those with learning disabilities, mental health, paediatrics, obstetrics, trauma, dementia, palliative care and End of Life Care (EoLC) and these should be included in the curriculum.

In addition, students should experience integration of theory and practice to ensure competency acquisition in all of the identified areas. During a programme of study, students should acquire the necessary skills and attributes to enable them to undertake effective lifelong learning that will, in turn, support their continuing professional development.

Recommendation

The College of Paramedics believes that students should experience integration of 50 percent theory and 50 percent practice to ensure competency acquisition in all of the identified areas. No more than 50% of clinical practice placements should be in a non-ambulance setting.

During the programme of study, students should acquire the necessary skills and attributes to enable them to undertake effective lifelong learning, which will in turn support their continuing professional development.

Students must successfully complete all of the required practice elements in addition to the theoretical elements of a programme. This can only be achieved through an effective partnership between the higher education institution and supporting placement provider, through a framework of placement support processes.

B2 Advertisement of Programmes

The student paramedic wants to make an informed choice based on access to course materials available on paper and online. There are currently 36\ HEIs advertising approved programmes in paramedic science, of these there are 12 College of Paramedic-endorsed programmes. Social media is alive with prospective students attempting to understand the options available and the minor variations from course to course.

Employability at the conclusion of the programme and any additional employer-specific hurdles should be made very clear to a prospective student in the advertising and/or at interview. Issues such as fitness and emergency driving are good examples of confusing areas, along with financial support beyond fees.

Recommendation

The College of Paramedics believes that curricula should cover all areas listed in this document. Where subjects are not included in an institution's curriculum (for example emergency driving) students must be made aware of its significance to the paramedic role and to future employability.

B3 Selection and Administration for Endorsed Programmes

The following section provides guidance on key elements of developing and delivering pre-registration paramedic programmes. Specific recommendations provided in this document are also used as part of the assessment framework for programme endorsement by the College of Paramedics (see Appendix B).

To ensure appropriate preparation of students for practice, the elements that follow should be used alongside the relevant HCPC *Standards of Education and Training*⁵ and QAA *Paramedic Science Benchmark Statement*⁸.

This curriculum uses the term 'student paramedic' to identify students specifically on a programme leading to eligibility for registration. Programmes developing students towards eligibility for registration as a paramedic must demonstrate a clear selection and admissions criteria. These should meet the minimum entry criteria identified by the College of Paramedics, HCPC, QAA and HEIs.

Admissions standards should be appropriate to the level of study of that programme. The College would normally expect applicants to have demonstrated attainment at academic level 3 (SCQF level 6) or equivalent, or to have successfully completed an appropriate academic access programme, or to be able

to demonstrate APL or APEL sufficient to exhibit equivalency.

All selection criteria must allow prospective students to demonstrate a clear command of written and spoken English language. As with all selection and admission criteria, all stages of the process should be clearly documented, contain an equal opportunities policy, disability awareness and quality control measures. This is to ensure a fair, documented pathway for access to programmes. There is also a requirement for public safety and protection through the DBS and PVG Scheme of Disclosure Scotland, to ensure the protection of vulnerable adults and children. Appropriate mechanisms for occupational health clearance should also be stated in line with current Department of Health guidance, including consideration of exposure-prone protection.

The College of Paramedics supports the principle of rehabilitation of offenders, subject to the relevant legislation. A criminal conviction should not automatically prevent a candidate from applying to a paramedic programme but should be disclosed (as per the relevant statutory requirements) to the HEI, so as to be considered against the policy of the institution concerned and with regard to placement requirements and the policies of the placement provider. The HCPC also offers guidance on this subject.

Recommendation

Prospective students should have access to a range of accessible information to make an informed choice about the educational programme and their future employability including:

- **Academic entry requirement to level of programme,**
- **Vocational fitness assessment (if applicable),**
- **Driving licence requirement(s) agreed in partnership with, for example, NHS ambulance trusts, DBS, PVG and occupational health services,**
- **Clear command of written and spoken English.**

The requirements and structure of the course, including assessment and programme progression, should be made available to prospective students.

There must be documentation in place that clearly describes quality assurance and review processes to ensure consistency and anti-discriminatory practice within the selection process.

B4 Accreditation of APL and APEL

The College advocates APL and APEL as access routes on to paramedic science development programmes. These routes must be supported with a transparent and academically rigorous process for accrediting prior learning and prior

experiential learning. Today's NHS requires its personnel to become 'lifelong learners' and, as such, it is important that equity of access to higher education is embraced for all ambulance service personnel.

Recommendation

The College of Paramedics is clear that HEIs must have an appropriate process in place for both APL and APEL applications to acknowledge and award academic credits for prospective students for prior academic and clinical experience. These should describe procedures, academic support and assessment available to prospective candidates, thereby meeting their expectations.

B5 Academic Entry Level to the Profession

At the time of publication, several universities in the UK currently deliver level 6 degree (BSc Hons) programmes for pre-registration. This increasing trend to level 6 is a welcome progression in the development of paramedic educational pathways. The College of Paramedics notes the findings of the PEEP³⁶, which recommends raising the academic entry threshold to the HCPC register to level 5 (diploma, HE) by 2015, followed by level 6 (BSc Hons degree) by 2019. However, the College of Paramedics believes that entry to paramedic registration should be at academic level 6 in England, Wales and Northern Ireland⁹, and SHE level 3 (SCQF10) and any advancement to achieving this before 2019 would be welcomed.

Recommendation

The College of Paramedics believes that the range of knowledge and skills required of contemporary paramedics is such that the minimum academic level required should be at level 6 in England, Wales and Northern Ireland, and SHE level 3 (SCQF10) in Scotland. The College of Paramedics recommends that all pre-registration undergraduate programmes should be at the appropriate undergraduate level as of academic year 2015/16.

B6 Practice Placement Education

The College believes that the experiential component of paramedic education is vital in producing a competent and fit-for-practice paramedic.

The essential prerequisite of experiential learning is supported by the College of Paramedics' recommendation that at least 50 percent of learning takes place in the clinical practice environment, and that direct entry undergraduate pre-

registration students must have supernumerary status while undertaking practice placement periods. These must be undertaken with appropriately trained^{37,38} and registered paramedic educators (PEds) so that every patient encounter becomes an opportunity for learning to prepare the contemporary student paramedic for ongoing development within evidence-based autonomous practice. The College of Paramedics accepts that any employing organisation during the transition (2015-2019) period to level 6/SCQF level 10 may continue to develop “in-house” staff to paramedic status. These individuals may not require 100 percent supernumerary placements due to their existing clinical experience. A guide of 225 hours supernumerary per year of clinical practice development will be deemed as sufficient, this equates to 30% of the 750 of a full-time HEI student paramedic.

Recommendation

The College of Paramedics recommends that direct entry paramedic programmes should have a duration of three-years (full time) and include a minimum 2250 hours of practice placements (circa average of 750 hours per year). For “in house” staff developing to paramedic status the College of Paramedics recommends a period of 225 hours supernumerary clinical practice development.

B7 Approval and Endorsement of Programmes

The College of Paramedics recognises that paramedics are increasingly employed by organisations other than NHS ambulance trusts. Paramedics can be found working in the armed forces, the private sector and other non-ambulance service foundation trusts, such as primary care trusts and GP services.

In 2015 the College of Paramedics reviewed its own endorsement scheme, which provides a further layer of quality assurance for users and providers of educational programmes, over and above existing standards set by the HCPC and QAA.

The College of Paramedics continues to work closely with the HCPC, employers, Department of Health and other key stakeholders to ensure that quality assurance processes of education provision is maintained and continues to allow open and transparent discussions with all parties to ensure high-quality, fit-for-purpose education.

Recommendation

Because the College of Paramedics recommends that all pre-registration programmes should be at level 6 in England, Wales and Northern Ireland, and SHE level 3 (SCQF10) in Scotland as of academic year 2015/16, from that time onwards it will only endorse programmes at this academic level.

The College of Paramedics recommends that HCPC-approved programmes leading to eligibility for paramedic registration should also be endorsed by the College of Paramedics education review process.

Commissioners of paramedic education should proactively seek those that are both endorsed by the College of Paramedics and approved by the HCPC.

B8 Policies, Procedures and Programme Management

Programmes delivering paramedic development must have effective policies and procedures for key educational processes. As a minimum, these should include admissions, selection, attendance, failures, practice placement provision and student conduct. All policies and procedures should be fair, transparent and in accordance with the principles of natural justice and internally ratified processes. The scope of these policies and procedures must be sufficient to cover both the theoretical and practical elements of the programme.

A robust policy on sickness absence must be designed to ensure that students have covered academic and practice placement learning outcomes sufficiently to demonstrate proficiency to practice. Provision should be available for the retrieval of lost hours depending on circumstances.

Programmes of paramedic development should be sustainable in terms of student applications, course numbers, finance, academic and placement support, alongside any further relevant aspects of the programme.

Key programme management positions responsible for leading and developing programmes must be held by suitably qualified and experienced paramedics. Management committees should include paramedic(s), placement provider(s), student paramedics and service user representation. They should also have a clear course structure and, where possible, module or unit leaders that are paramedics.

An effective working relationship between the HEI and practice placement provider should be clearly documented to ensure clarity for all parties concerned. An up-to-date formal (*signed and dated*) memorandum of agreement should be maintained that outlines key elements of the relationship. This should be backed by policies and procedures as appropriate, plus a defined system for the audit and review of the programme as a whole and for each new intake and graduates. The structure should be developed to establish a mechanism for academic and placement support that gives access to students while studying both the theoretical and practical elements of the programme. Clear links between HEIs and placement areas should be identified and documented with appropriately timed reviews and educational audits.

Recommendation

Programmes should have an up-to-date formal (signed and dated) of agreement between the HEI and placement provider.

Programmes should have policies that support step-off and step-on opportunities throughout the programme of study for the student. Where step-off points are identified, they should enable the student maximum opportunity for employability.

B7 Approval and Endorsement of Programmes

Practice placement learning forms one of the most important components of paramedic education; it ensures that the student has considerable exposure to apply theory to practice.

Recommendation

The College of Paramedics stipulates that 50 percent of the programme should be undertaken in the practice setting. Practice placements should be delivered evenly across the duration of the programme to permit refinement of practice alongside the acceptable academic level of development, and ensure consistent learning and assimilation of learning objectives in practice. No more than 50% of all placements should be in a non-ambulance environment.

C2.3 Placement Provision

Simulation is recognised as a beneficial educational tool⁴³, particularly in the acquisition of advanced life support skills and those that the student paramedic may have insufficient exposure to in the pre- and out-of-hospital environment.

Recommendation

The College of Paramedics a maximum of 5 percent of the recommended practice placement hours can be used to assess paramedic competencies in the simulated environment.

C6.6 Standards of Preceptorship

A supportive mentorship and preceptorship system will encourage and support individuals while ensuring that standards of proficiency are consistently achieved, thus reducing risks and maintaining high levels of patient care and safety in the pre-hospital environment.

Due to the nature of paramedic practice, unlike other professionals newly registered paramedics are usually employed at the point of registration as a lead clinician working alongside a support worker.

Recommendation

During their first six months following registration, the College of Paramedics recommends that:

- **Paramedics should not respond in isolation,**
- **During their first 150 hours post-registration, paramedics should have support from an experienced paramedic, with opportunities to access this throughout their initial 12 months post-registration,**
- **Paramedics should not undertake supervision of a new member of emergency support staff or peer for at least 12 months following registration,**
- **A 24-hour advice line should be available to provide clinical support.**