

Evidence Brief: Paramedicine

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Key publications – the big picture

[NHS Long Term Workforce Plan](#)

NHS England, 2023 (updated 2024)

Before any of the interventions set out in this Plan, and even after factoring in ambitious expectations for improved productivity, the workforce shortfall across NHS organisations will grow to 260,000–360,000 FTEs by 2036/37. Most professions will see shortfalls grow, but this trend will be more pronounced for some professions. [...] Among the allied health professions (AHP), shortfalls will increase the most for paramedics, occupational therapists, diagnostic radiographers, podiatrists, and speech and language therapists. (Page 17)

Some professions have received recent investment to increase education and training, reducing the magnitude of the expansion they will need compared to other professions. For example, paramedic training places have increased from around 2,100 in 2015 to just over 3,850 in 2022.⁸² This means that a continued projected average supply growth of 3.7–4.0% per year is possible within the 15-year modelling period with an increase in training places of 5–18% a year. (Page 35)

More than a third of AHPs could train through apprenticeships, compared to 6% now, but this would vary by professional group. The Plan sets out the following assessment for proportion of entrants joining the AHP workforce via an apprenticeship route by 2031/32: 25–50% for paramedics, diagnostic radiographers, occupational therapists, dietetics, prosthetists and orthotists. (Page 45)

our assessment is that the paramedic workforce will need to increase by around 14,200–15,600 over 15 years, to deliver services in ambulance and other care settings, as well as creating a pipeline of staff who will go on to work as advanced practitioners. To enable this, the Plan proposes that paramedics have more rotational training placements across hospital, community and primary care settings. For podiatry, we propose expanding apprenticeships significantly, so they become the main entry route into the

profession. (Page 46) as part of paramedic expansion, and so that training delivers system-facing graduate paramedics, we will ensure funding for MSc two-year paramedic programmes. Students will be able to enter the workforce as a registered clinician within two years, rather than the traditional three years, therefore increasing supply. (Page 78)

We will work with the GMC and medical schools to explore options for a shortened medical degree programme which would be available for some existing healthcare professions such as pharmacists and paramedics. (Page 78)

We will also aim to bring the attrition rate down to 14% for paramedics and operating department practitioners (ODPs). (Page 80)

To address the unwarranted variation in clinical placement hours in some professions – for example, ODPs and paramedics – we will support a review of the variation, aligned to the outcome-based clinical hours models in the college curricula. (Page 88)

[Culture review of ambulance trusts](#)

NHS England, 2024

Ambulance services play a vital role in our communities, responding to people's most urgent needs and at their most vulnerable times. Ambulance staff work with passion and commitment, in some of the most pressured environments and across complex geographies providing compassionate care to patients.

At the same time the [National Guardian's Office report from February 2023](#) highlighted that there are significant challenges in terms of the culture within ambulance trusts across England.

[Reducing Misogyny and Improving Sexual Safety in the Ambulance Service](#)

Association of Ambulance Chief Executives, 2024

There has been a significant focus on wellbeing and mental health within the ambulance service, with production of resources relevant to [suicide prevention](#) within the sector. While

staff mental health and wellbeing is an issue with many factors contributing to this, one aspect of ambulance culture that has recently come into focus is that related to sexual safety.

[A vision for the UK NHS ambulance sector](#)

Association of Ambulance Chief Executives, 2024

The purpose of this paper is to prompt and guide meaningful conversations at national, regional and system level, about the potential for the ambulance service to take a greater role in leading and co-designing urgent and emergency care (UEC) provision.

[Revised standards of conduct, performance and ethics](#)

Health & Care Professions Council, 2024

The revised standards of conduct, performance and ethics came into effect on 1 September 2024. Our [guidance on social media](#), which sits alongside the standards, has also been revised.

[Approved programmes](#)

Health & Care Professions Council, 2024

A database of approved education programmes for Allied Health Professionals.

[Recruitment of overseas allied health professionals](#)

NHS Employers, 2024

How overseas allied health professionals (AHPs) can enter the UK for work.

[Expanded role for ambulance services could benefit patients and staff](#)

NHS Confederation, 2024

A vision for the NHS ambulance sector, developed by the Association of Ambulance Chief Executives (AAACE) in partnership with NHS Providers and NHS Confederation, says ambulance services' core remit will always be to provide

emergency response to those who have a life-threatening health need and to major incidents.

[Ambulances Are Bringing Care Closer To Home](#)

The King's Fund, 2024

While it's obvious how primary and community care providers fit into this change of focus, it's perhaps less obvious how it relates to urgent and emergency care (UEC) providers. How can providers whose primary purpose is to deliver life-or-death care help the health and care system deliver more preventive and holistic care nearer to people's homes? Well, there's a lot the government and systems can learn from the ambulance service.

[Implementing recommendations of the understanding anxiety and self-confidence in clinical decision-making project](#)

NHS England and NHS South Western Ambulance Service Foundation Trust, 2023

Supporting paramedic students and newly qualified paramedics to gain confidence in clinical decision making.

[Innovation and collaboration: supporting Allied Health Professions Return to Practice](#)

NHS England, 2023

It is well recognised that there are significant challenges in AHP workforce supply, retention, and growth across all sectors of health and care. Returning Allied Health Professions are a vital element of the Health Education England (HEE) workforce plan and are essential in re-directing knowledge, skills and experience back into health and care sectors.

[AHP Educator Career Framework](#)

Council of Deans of Health, 2023

The AHP Educator Career Framework is an outcome-based career framework that describes the knowledge, skills and behaviours required to be an effective teacher, learning

facilitator, supervisor and role model in AHP education in practice and formal education settings. First and foremost, it promotes the education pillar of AHP professional practice, recognising that education is everyone's responsibility.

[Genomics for allied health professionals: Survey results](#)

NHS England WT&E, Genomics Education Programme, 2023
Overall, your responses showed that a good majority of you feel you don't have a good understanding of genomics.

[Your future allied health professionals](#)

NHS Employers, 2023
This infographic sets out the different routes available for organisations to train allied health professionals.

[A guide to ESR coding for Advanced Practitioner roles](#)

NHS England WT&E, 2022
To ensure that advanced practitioners' skills are consistently recognised, and better enable those skills to be deployed across healthcare settings we must now ensure that the NHS workforce accurately reflects the breadth of the modern clinical workforce.

[The Allied Health Professions \(AHP\) for England: 2022 to 2027](#)

NHS England, 2022
This strategy is a catalyst for change. Wherever you work, every member of our AHP community has a part in realising our collective ambitions through its delivery. I therefore encourage you to take a moment to consider how the AHP community can enable the change required to deliver future care today.

[Allied Health Professions' Research and Innovation Strategy for England](#)

NHS England WT&E, 2022
This Strategy comprises a definitive collective national reference statement that encompasses and supports the existing research

and innovation strategies of all the Allied Health professional associations.

[Ambulance response times in England: an emergency?.](#)

UK Parliament, 2022
The NHS in England has set a national target for ambulances to respond to the most life-threatening incidents within 7 minutes on average. Response times for these incidents have been rising in recent months, averaging over 9 minutes in December 2021. NHS targets for responding to less urgent calls have also been missed. This article summarises ambulance response times data and Government statements on the issue.

[Why have ambulance waiting times been getting worse?.](#)

The Health Foundation, 2022
Because the system is stretched, small increases in handover times can lead to far greater increases in average response times. The increase in handover delays is a major contributor to the decline in ambulance performance.

[What can AHPs offer in mental health settings?](#)

Health Education England, 2021
AHPs are the key to transforming health, care, and wellbeing. Working at the top of their competencies and skills, AHPs lead mental health teams to new ways of working. Their expertise in rehabilitation and enablement is vital to move away from over-reliance on hospitals and towards professional interventions across health and social care settings.

[My role in tackling health inequalities: a framework for allied health professionals](#)

The King's Fund, 2021
This framework builds on our commitments in the UK allied health professions public health strategic framework 2019–2024 (Allied Health Professions Federation 2019) and we hope AHPs

across the UK will find it useful. It aims to help you to consider your own unique contribution to tackling health inequalities and to help maximise this through a series of lenses and questions.

[What is advanced clinical practice?](#)

NHS England WT&E, no date (estimated post-2020)
Advanced clinical practitioners come from a range of professional backgrounds such as nursing, pharmacy, paramedics and occupational therapy. They are healthcare professionals educated to Master's level and have developed the skills and knowledge to allow them to take on expanded roles and scope of practice caring for patients.

[Standards of education and training](#)

Health & Care Professions Council, 2017
In line with the way our education quality assurance model functions, we have split our standards of education and training along institution and programme levels.

See also: [Review of the standards of education and training](#) (2024)

College of Paramedics

[Paramedic Career Framework](#)

College of Paramedics, 2024
Paramedics continue to develop along the leadership and management, education, research and development, and clinical practice pathways, the latter with opportunities in primary, urgent, emergency, and critical care. The College of Paramedics as the professional body for UK Paramedics reiterates its commitment to “leading the development of the paramedic profession”; this publication is one of many key elements in delivering this commitment.

[Paramedic Post Graduate Career Guidance](#)

College of Paramedics, 2023
Publication of the original Paramedic Curriculum Guidance, a document that is now in its third edition, brought together many strands of progress and development across the profession, providing a set of standards that could be used as a reference point for all; including paramedics, educational providers, patients, employers, policy makers and regulators as to what could be described as the ‘DNA’ of a paramedic.

[Developing a new paramedic curriculum](#)

College of Paramedics, 2023
Aiming to develop an accessible and inclusive curriculum for the 6th time that fuels the development of a modern paramedic, prepared to operate in a complex and evolving health and care system whilst maintaining the unique qualities and capabilities that set us apart from other health care professions. We set about clarifying WHAT IS A PARAMEDIC?

[Future Workforce Mental Health & Wellbeing Project](#)

College of Paramedics, no date
Health Education England commissioned the College of Paramedics to undertake a ‘Future Workforce Mental Health & Wellbeing Project’ in response to the ongoing psychological risks facing the profession, particularly those working in ambulance services. The three interventions identified as a focus for the Project were:

1. Development of curriculum guidance regarding personal mental health and well-being for pre-registration Paramedic training.
2. Development of a wellbeing and recovery support tool for use by paramedic students and early career staff in ambulance trusts.
3. Development of a learning and development package for student and preceptorship supervisors.

[Paramedic Evidence-based Education Project](#)

College of Paramedics, no date

The increase in attention that the education and training of paramedics has received in recent years led the National Allied Health Professional Advisory Board, England, to commission this study. Our aim has been to develop an evidence based business case, for the College of Paramedics, to progress the strategic direction of the standardisation of education and training for this key workforce.

Case Studies

[Advanced Practitioner Scott Murray–Advanced Paramedic Practitioner](#)

NHS England WT&E, 2022

Scott Murray is an Advanced Paramedic Practitioner who works in a primary care setting at Bay Medical Group (BMG). He believes Advanced Practitioners (AP) are integral to contemporary healthcare provision. They enhance teams that are looking to improve patient access, benefit from senior clinical expertise, and offer holistic patient care.

[Infusing the palliative into paramedicine: Inter-professional collaboration to improve the end of life care response of UK ambulance services](#) Abstract only*

Progress in Palliative Care 29(2), 2021

This paper considers the future for end of life care leadership in UK ambulance services and the development of specialist paramedic roles. While the future of an alliance of paramedicine and palliative care is yet to be fully realized, our work exhibits the significant progress made by UK ambulance services.

[A case study of a collaborative allied health and nursing crisis response](#)

Journal of Interprofessional Care 34(5), 2020

Using an evaluative case study, a unique insight into the collaborative allied health and nursing professions' response to COVID-19 at a specialist cardiothoracic hospital in the United Kingdom is presented.

The Star for workforce redesign

More resources and tools are available in the AHP Quick Reference Guides Upskilling section of the [Star](#). Alternatively, search for 'Allied Health' in the search bar.

Statistics

You can find relevant statistics on the [Health and Care Statistics Landscape](#).

[Registrant data and statistics](#)

Health & Care Professions Council, 2024

These factsheets provide a breakdown for each of the professions we regulate.

[Key statistics on education and training for HCPC professions](#)

Health & Care Professions Council, 2024

We have provided key statistics as a summary of the picture of education and training for the professions we regulate, and how that picture is changing.

[Retention rates of first time HCPC registrants, 2013 to 2018](#)

Health & Care Professions Council, 2023

The HCPC embarked upon this analysis to inform our work on preceptorship. We consider that the findings are of wider value. They have particularly important implications for providers and funders of training, and for workforce planners. They are also likely to be of great interest to other stakeholders including professional bodies.

[Diversity data: paramedics - October 2023](#)

Health & Care Professions Council, 2023

This factsheet provides key EDI information for paramedics and how the demographics of this group compare to the demographics of HCPC registrants overall.

National Data Programme

Workforce, Training and Education staff can look at the [WT&E Data and Analytics Service](#) resources including the National Data Warehouse SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

Advanced practice

[Saving ambulance resources: a service evaluation of the identification of non-viable out-of-hospital cardiac arrest in London by advanced paramedic practitioners in critical care](#)

Abstract only*

British Paramedic Journal 8(4), 2024

APPCCs working within a governance framework safely saved a significant number of ambulance resources over a three-year period. Perceived benefits include 'freeing up' DCA and solo responders, allowing them to be redirected to other emergency

calls, leading to potential improvement in response times for patients waiting for an ambulance resource.

[A narrative review of the training structure, role, and safety profile of advanced critical care practitioners in adult intensive services in the United Kingdom](#)

Abstract only*

Australian Critical Care 36(1), 2023

Over the last 5 years, the UK picture of advanced practice has slowly standardised; an ACCP securely fits under the advanced clinical practitioner umbrella. The ACCP workforce has moved from a handful of early adopters, regional hubs, to a position across most critical care units now have or are developing a team of practitioners. The evidence base for the safety profile of ACCPs is evolving and shows parity in outcomes in the areas currently investigated. The ACCP role provides a vision of a multiprofessional workforce for the future of staffing of critical care services that is diverse and inclusive, not with the intention of competing with our medical colleagues.

[Assessment of advanced clinical practitioners](#)

Journal of Interprofessional Care 36(6), 2022

The insights from this study enabled lessons to be drawn for those responsible for workforce development who are key to the future development of the ACP role and to ensure high standards of interprofessional care.

[Characterising the outcomes, impacts and implementation challenges of advanced clinical practice roles in the UK: a scoping review](#)

BMJ Open 11(8), 2021

This review suggests a need for educational and role standardisation and a supported career pathway for advanced clinical practitioners (ACPs) in the UK. Future research should: (i) adopt more robust study designs, (ii) investigate the full scope

of the ACP role and (iii) include a wider range of professions and sectors.

Community and Primary Care

[Paramedic or GP consultations in primary care: prospective study comparing costs and outcomes](#)

British Journal of General Practice, 2024

We found no evidence that PGP-consultations resulted in greater improvement/deterioration in patient-reported health and wellbeing; confidence in health provision; health knowledge; or confidence in the health plan over the 30-day period. However, the PGP group reported lower confidence in health provision, poorer perceptions of practice engagement in safety promotion and more communication problems with staff immediately after the initial consultation. Patients receiving PGP-consultations reported fewer GP appointments during the 30-day period, however savings to the NHS were offset by higher use of other healthcare professionals. Conclusion: Well-designed training and supervision are needed to ensure PGPs have the right knowledge and can clearly convey health care plans to patients. While PGPs may reduce GP workload pressure, they do not necessarily reduce NHS costs.

[Understanding paramedic work in general practice in the UK: a rapid realist synthesis](#)

BMC Primary Care 25, 2024

Variability in how the paramedic role is operating and embedding into general practice across the UK affects the success of the role. These findings provide a theoretical foundation for future research to investigate various 'models of paramedic working' in different contexts.

[Factors Affecting Paramedic Personnel in the Assessment and Management of Emergency Pediatric Patients within the Prehospital Settings in the United Kingdom](#)

International Journal of Maternal and Child Health and AIDS, 2023

A paramedic's role in the United Kingdom is to primarily respond and provide emergency medical care to patients in the community. Pediatric patients form a small percentage of ambulance call-outs per year, which impacts a paramedic's confidence and competence when implementing effective healthcare protocols due to few attempts and existing opportunities to address pediatric patients' needs. There are also pre-existing gaps and barriers in pediatric emergency paramedic education and the lack of exposure to that specific patient group for emergency medical service healthcare providers in the prehospital settings when responding to pediatric medical emergencies. Further guidance and support in paramedic practice and education could be advantageous in providing effective tools and knowledge to improve pediatric emergency care in prehospital settings.

[Designing and implementing an educational framework for advanced paramedic practitioners rotating into primary care in North Wales](#) Abstract only*

Education for Primary Care 32(5), 2021

Despite the upcoming workforce changes, there is currently no standard education framework to support the development of Advanced Paramedic Practitioners in primary care. This evaluation offers insight into the educational needs of Advanced Paramedic Practitioners working in this setting and suggests an education structure that can best support their learning, whilst meeting regulatory requirements for paramedic professional development.

[Understanding the role of the paramedic in primary care: a realist review](#)

BMC Medicine 19, 2021

This review is the first to offer insight into understanding the impact paramedics may have on the international primary care workforce and shaping how they might be optimally deployed.

[Future-proofing the primary care workforce: A qualitative study of home visits by emergency care practitioners in the UK](#)

The European Journal of General Practice 17(1), 2021

Broadening the skill-mix to incorporate extended-scope practitioners such as ECPs, to deliver primary care home visiting, presents an opportunity to increase resilience in the general practice workforce.

Diversity and inclusion

[Ethnic differences in pre-hospital ambulance care in the UK: a mixed method study](#)

The Lancet 404, 2024

We identified five main barriers including delays in ambulance arrival, high costs for uninsured, language barriers, racism, and trust issues with ambulance staff. We also found that cultural and communication training for ambulance staff, and better-equipped ambulances were key facilitators for ensuring effective ambulance care.

[Ambulance service recognition of health inequalities and activities for reduction: An evidence and gap map of the published literature](#)

British Paramedic Journal 9(1), 2024

Further UK-based research exploring health inequalities of EMS patients would support ambulance service policy and intervention development to reduce health inequality in urgent and emergency care delivery.

[A scoping review exploring the confidence of healthcare professionals in assessing all skin tones](#)

British Paramedic Journal 8(2), 2023

There is a safety issue for patients with dark skin tones, as healthcare professionals lack clinical confidence in managing and treating all ethnicities equally. Tangible diversity within healthcare training is required, supported by inclusive skin tone imagery and appropriate terminology within medical literature.

[Inclusive recovery: why tackling inequalities should be central to urgent and emergency care recovery plans](#)

BMJ 380, 2023

We are now at a critical juncture. As the huge demand driven pressures the NHS has faced this winter begin to ease ever so slightly, and trusts begin the task of recovering core urgent and emergency care performance standards, this is the time to ensure recovery is both sustainable and equitable.

[“Raising the curtain on the equality theatre”: a study of recruitment to first healthcare job post-qualification in the UK National Health Service](#)

Human Resources for Health 20, 2022

The Healthcare Workforce Equity + Diversity Lens we have developed can help to ‘raise the curtain on the equality theatre’ and inform more inclusive approaches to recruitment such as contextualised recruitment or effective allyship between employers and universities.

[The challenge of diversity in the allied health professionals](#)

Royal Wolverhampton NHS Trust, 2020

Although the Allied Health Professions (AHPs) are a diverse range of professions in terms of their skill set. The workforce which makes up the professions lacks diversity.

Education and curriculum

[Evaluating the perceived impact and legacy of master's degree level research in the allied health professions: a UK-wide cross-sectional survey](#)

BMC Medical Education 24, 2024

The focus of master's degree level research was largely self-generated with the highest perceived impact on individual outcomes rather than broader clinical service and organisation influence. Formal output from master's research was low, but ongoing research engagement and activity was high suggesting master's degree training is an under-recognised source for AHP research capacity building. Future research should investigate the potential benefits of better coordinated and prioritised research at master's degree level on professional and organisational impact.

[Ambulance clinicians implementing evidence-based practice: mind the gap! Attitudes, perceptions and experiences of student paramedics](#)

British Paramedic Journal 8(3), 2023

A disparity between theoretical learning and EBP implementation was identified. EBP may not dovetail with standard operating procedure within UK ambulance Trusts, resulting in confusion among student paramedics as to the true worth of EBP.

[For when you just can't talk to 'normal' people . . . Exploring the use of informal support structures by supernumerary university paramedic students: findings from a phenomenological study](#)

British Paramedic Journal (4), 2023

While undertaking pre-hospital practice placements, supernumerary university paramedic students may not have complete access to the informal support of ambulance staff, and they may feel unable to discuss stressful feelings with friends or loved ones. However, within this study, self-moderated online

chat groups were used almost universally as a readily accessible means of peer support. Paramedic educators ideally need an awareness of how such groups are used to ensure that they represent a supportive and inclusive space for students. Further research into how university paramedic students utilise online chat groups for peer support may further reveal a potentially valuable informal support structure.

[The impact of dementia education on student paramedics' preparedness to care, knowledge, confidence and attitudes towards dementia: an analytic survey](#)

British Paramedic Journal, 2023

As paramedics are central to the emergency healthcare of people living with dementia, it is essential that the emerging paramedic workforce is equipped with the knowledge, attitudes and confidence to provide quality care for this population. We need to ensure dementia education is embedded in undergraduate curricula, and that consideration is given to the subjects, level and pedagogic approach taken to ensure positive outcomes are maximised.

[A qualitative study exploring experiences and challenges of combining clinical academic training with family life](#)

BMC Medical Education 21, 2021

Although people manage to find ways to successfully combine clinical academic roles with family life, findings highlight a need to identify ways of supporting and encouraging trainees with caring responsibilities.

Leadership, coaching and supervision

[Inequitable barriers and opportunities for leadership and professional development, identified by early-career to mid-career allied health professionals](#) Full text available with NHS OpenAthens account*

BMJ Leader 8(3), 2024

Thematic analysis (TA) generated four themes, including the barriers and opportunities for AHP leadership development and career progression. Further TA identified three overarching themes: equitable and interprofessional leadership development; an equitable and structured AHP career pathway; and having AHP leaders at a strategic and/or very senior level. These overarching themes were subsumed under the umbrella category: equity of opportunity and voice. The AHPs, who were interviewed, reported inequitable access to both career and leadership development, compared with other professions, such as nurses, doctors and pharmacists.

[Identifying effective paramedic leadership skills](#) Abstract only*

International Paramedic Practice 12(3), 2022

Leadership training is not typically given to EMS field clinicians looking to assume leadership positions. Paramedic leaders have developed the necessary skills to succeed on their own by learning on the job, developing mentor/mentee relationships, and undergoing training and education in the form of advanced degrees.

[Professional diversity in leadership – Inclusion of the smaller professions](#)

Royal Wolverhampton NHS Trust, 2022

There are 14 Allied Health Professions (AHPs) in England with approximately 170,000 AHPs working within the NHS. Physiotherapists represent the largest group of AHPs with approximately 61,000 registered with the Health and Care Professions Council, whilst Prosthetics and Orthotics represent the smallest profession with approximately 1000 registrants.

[Mentor or tormentor? A commentary on the fractured role of mentoring in paramedicine](#)

Australasian Journal of Paramedicine 18, 2021

If paramedicine is to continue its evolution as a legitimate healthcare profession, the quality of clinical mentoring must be acknowledged as a significant factor by higher education institutions, and the public and private services who employ paramedics, and nurtured accordingly.

[Who Coaches the Coaches? The Development of a Coaching Model for Experiential Learning](#)

Innovative Higher Education 46, 2021

We recommend practices for coaching that can support gains for students and faculty in experiential, project-based, interdisciplinary courses.

[The current leadership development opportunities provided for student paramedics by Higher Education Institutions: a literature review](#)

British Paramedic Journal 5(2), 2020

Current evidence, although limited, demonstrates the benefit of educational programmes in developing educational and non-educational leadership opportunities for paramedic students.

[Capitalising on the transformational opportunities of early clinical academic career training for nurses, midwives and allied health professionals](#)

BMC Medical Education 20, 2020

Stakeholders need to recognise that a cultural shift about the purposes of research training from a transactional to transformative approaches is required to facilitate the development of NMAHPS clinical academics, to enable them to contribute to innovative health and patient care.

[Do non-rotational ambulance-based placements affect the development of paramedic competencies from a student perspective? A qualitative study](#)

Paramedicine 17, 2020

Based on the findings of this research it is not possible to draw firm conclusions as to whether the non-rotation of ambulance-based placements aids or hinders undergraduate student paramedics' development of competencies.

[Evaluating a specialist education programme for nurses and allied health professionals working in older people care: A qualitative analysis of motivations and impact](#)

Nurse Education Today 97, 2020

Understanding the motivations to undertake a specialist gerontological programme and the impacts on practitioners and older people care and services will help inform the continuing professional development agenda for nurses and allied health professionals working in this field of practice.

Mental health

[Causes of stress and poor wellbeing among paramedic students in Saudi Arabia and the United Kingdom: a cross-cultural qualitative study](#)

BMC Health Services Research 23, 2023

The study revealed contributors to stress were similar in both countries. Better preparation can help to reduce the negative impacts of the possible traumatic events encountered on placements and supportive relationships, especially with proctors, can boost student wellbeing. Universities are able to address both these factors and help foster a positive environment for paramedicine students. As such, these results should help educators and policymakers when identifying and delivering interventions to support paramedic students.

[‘The WOW factors’: comparing workforce organization and well-being for doctors, nurses, midwives and paramedics in England](#)

British Medical Bulletin 141(1), 2022

Multi-level systems approaches to well-being are required that consider intersectionality and structural differences between professions; together with inter-professional national databases to facilitate monitoring.

[Joining the workforce during the COVID-19 pandemic: views of Allied Health Profession students](#)

Journal of Interprofessional Care 36(5), 2022

Although the transition from student to practitioner continues to be a stressful period, only a minority of participants reported COVID-19 as an explicit stressor.

[Wellbeing and coping of UK nurses, midwives and allied health professionals during COVID-19-a cross-sectional study](#)

PLoS One 17(9), 2022

This workforce would benefit from additional support/services to prevent further deterioration in mental health and wellbeing and optimise workforce retention.

[How does the use of humour in the UK ambulance service affect a clinician's well-being?](#)

British Paramedic Journal 6(2), 2021

This review of the literature found that many in the ambulance community view their use and expression of humour as a positive coping strategy that helps them to relieve the stresses of the job. Further research is needed to investigate any negative effects that humour has on a clinician's well-being and larger studies are needed to give a better representation of the ambulance community.

[Staff stakeholder views on the role of UK paramedics in advance care planning for patients in their last year of life](#)

Progress in Palliative Care 29(2), 2021

UK paramedics are well-placed to screen and refer patients for advance care planning. Further research is needed to explore

how this type of intervention might be developed to fit into a community-centred approach aimed at improving advance care planning.

[The health and well-being of paramedics - a professional priority](#)

Occupational Medicine 70(3), 2020

Although the focus of paramedic education in undergraduate and postgraduate programmes is appropriately clinically focused, informing and educating paramedics on self-care is essential for emergency service professionals where there is known risk of poor health outcomes linked to their vocation.

Prescribing

[The views of current and future paramedics on prescribing: a review](#) Abstract only*

Journal of Paramedic Practice 16(9), 2024

Overall, there are significant positives to paramedic independent prescribing, such as improved patient experiences, more medication options and fewer hospital admissions. However, there were concerns, which centred on the implementation process, underpinning support and increased responsibility.

[Influences on paramedic prescribing: student and prescriber perspectives](#)

British Paramedic Journal 18(2), 2023

Paramedic prescribing is rapidly expanding and evolving into new clinical areas. As such, careful consideration should be given to not only the resourcing of prescribers as individuals, but also the wider organisational and technological support and structures needed to be in place to allow paramedic prescribers to fulfil their roles and utilise their advanced practice skills.

[Barriers and facilitators to implementation of non-medical independent prescribing in primary care in the UK: a qualitative systematic review](#)

BMJ Open 12(6), 2022

A more coordinated and targeted approach is key to overcoming barriers identified in the four stages of implementation and would help ensure that IP is recognised as an effective approach to help alleviate workforce shortfalls in the UK, and around the world.

[Paramedic independent prescribing: a qualitative study of early adopters in the UK](#)

British Paramedic Journal 6(1), 2021

Paramedic prescribing is most successful in settings with a high volume of same-day presentations and urgent and emergency care. It facilitated advanced roles within multidisciplinary teams. Concerns indicate that greater consideration for support infrastructure and workforce planning is required within primary care to ensure paramedics meet the entry criteria for a prescribing role.

Role progression and development

[Training the trainers: improving the quality of education delivered to paramedics through a simulation-debrief model](#)

British Paramedic Journal 7(4), 2023

The simulation-debrief model of paramedic education represents a move away from the use of didactic teaching and 'tick box'-style assessments in previous train the trainer courses. The introduction of simulation-debrief teaching methodology has had a positive impact on paramedics' confidence in the selected clinical topics, and is seen by LDOs as an effective and valuable education method.

[Crossing the 'flaky bridge' - the initial transitory experiences of qualifying as a paramedic: a mixed-methods study](#)

British Paramedic Journal 8(1), 2023

The transition from student to NQP is an emotionally turbulent time. Navigating a changing identity seems to be at the centre of this turbulence, and this is triggered by a catalyst event such as attending a cardiac arrest. Interventions which support the NQP in navigating this change in identity, such as group supervision, may improve resilience and self-efficacy and reduce attrition.

[Looking back to inform the future: a review of published paramedicine research](#)

BMC Health Services Research 23, 2023

Included articles suggest a relatively narrow topic focus, a limited methodological focus, and observed trajectories of academic attention indicating where research pursuits and priorities are shifting. We have highlighted that the academic focus may require an alignment with aspirational and direction setting documents aimed at developing paramedicine. This review may be a snapshot of scholarly activity that reflects a young medically directed profession and systems focusing on a few high acuity conditions, with aspirations of professional autonomy contributing to the health and social well-being of communities.

[Feedback for Emergency Ambulance Staff: A National Review of Current Practice Informed by Realist Evaluation Methodology](#)

Healthcare 11(16), 2023

This study suggests that initiatives providing feedback for EMS staff are common in practice, with most UK ambulance trusts currently having examples of feedback initiatives within their footprint. EMS feedback initiatives are motivated by various factors but are challenging to implement and sustain effectively. The published literature differs from current practice in the focus and scope of EMS feedback initiatives. There is considerable opportunity to strengthen the methodological and theoretical

basis for innovations in practice in this area. This includes providing guidance on the design of interventions and robust evaluation of different feedback approaches, especially those which might be unique in meeting the challenges of the EMS setting.

[Optimising ambulance conveyance rates and staff costs by adjusting proportions of rapid-response vehicles and dual-crewed ambulances: an economic decision analytical modelling study](#) Full text available with NHS OpenAthens account*

Emergency Medicine Journal 40(1), 2023

At current overall conveyance rates, there is no benefit in increasing the relative proportions of RRVs to DCAs unless additional benefits can be realised that bring the conveyance rates down.

[Addressing the challenges facing the paramedic profession in the United Kingdom](#)

British Medical Bulletin 148(1), 2023

In the United Kingdom, the transformation of the paramedic profession over the last decade has made paramedics ideal for transference across other clinical practice settings. Educated to degree level with autonomous registration, pluripotent by design and generalist through their experiences in ambulance services, there are increasing opportunities for paramedics to work across a variety of clinical settings.

[What innovations help with the recruitment and retention of ambulance staff: a rapid evidence summary](#)

medRxiv, (pre-print, not peer-reviewed) 2022

Evidence from a UK survey suggests that factors negatively influencing paramedic recruitment include competitive job market, lack of locally trained professionals, and newly qualified professionals starting with higher debt.

[Forecasting the daily demand for emergency medical ambulances in England and Wales: a benchmark model and external validation](#)

BMC Medical Informatics 23, 2023

We provide a robust externally validated benchmark for future ambulance demand forecasting studies to improve on. Our benchmark forecasting model is high quality and usable by ambulance services. We provide a simple python framework to aid its implementation in practice. The results of this study were implemented in the South West of England.

[Assessment of advanced clinical practitioners](#)

Journal of Interprofessional Care 36(6), 2022

The insights from this study enabled lessons to be drawn for those responsible for workforce development who are key to the future development of the ACP role and to ensure high standards of interprofessional care.

[Characterising the outcomes, impacts and implementation challenges of advanced clinical practice roles in the UK: a scoping review](#)

BMJ Open 11(8), 2021

This review suggests a need for educational and role standardisation and a supported career pathway for advanced clinical practitioners (ACPs) in the UK. Future research should: (i) adopt more robust study designs, (ii) investigate the full scope of the ACP role and (iii) include a wider range of professions and sectors.
academic pathway.

[The paramedic profession: disruptive innovation and barriers to further progress](#) Abstract only*

Journal of Paramedic Practice 12(4), 2020

The steep developmental trajectory of paramedics has not been mirrored by a comparable pace of reform and modernisation in

NHS ambulance services which, in comparison, have lagged behind and also failed to adapt to significant changes in the pattern, quantity and epidemiological characteristics of patient demand.

[Relationship between labour force satisfaction, wages and retention within the UK National Health Service: a systematic review of the literature](#)

BMJ Open 10, 2020

Pay was found to influence satisfaction, which in turn affected retention. An increase in wages alone is unlikely to be sufficient to ameliorate the concerns of NHS workers.

[Developing a consolidated research framework for clinical allied health professionals practising in the UK](#)

BMC Health Services Research 20, 2020

The consolidated framework was entitled 'Shaping Better Practice Through Research: A Practitioner Framework' by stakeholders, thus emphasising its ambition to embed research activity into practice.

Secondary and tertiary care

[Scoping review of the effectiveness of 10 high-impact initiatives \(HIIs\) for recovering urgent and emergency care services](#)

BMJ Open Quality 13(3), 2024

Effective interventions were often only identifiable as components within the NHS England 10 high-impact initiative groupings. The evidence base remains limited, with substantial heterogeneity in urgent and emergency care initiatives, metrics and reporting across different studies and settings. Future research should focus on well-defined interventions while remaining sensitive to local context.

[Palliative paramedicine: Comparing clinical practice through guideline quality appraisal and qualitative content analysis](#)

Abstract only*

Palliative Medicine 36(8), 2022

It is important that ambulance services' palliative and end-of-life care guidelines are evidence-based and fit for purpose. Future research should explore the experiences and perspectives of key palliative paramedicine stakeholders.

[Widening the conversation: Paramedic involvement in interprofessional care](#)

Progress in Palliative Care 29(2), 2021

In this special issue of Progress in Palliative Care we explore the nexus between palliative care and paramedicine by presenting important initiatives being undertaken in Australia, New Zealand, the United Kingdom, and Canada to improve access to care.

Workforce perspectives and experiences

[Variation in ambulance pre-alert process and practice: cross-sectional survey of ambulance clinicians](#)

Emergency Medicine Journal 42(1), 2024

We identified variation in pre-alert processes and practices that may result in uncertainty and challenges for ambulance clinicians providing time-critical care. Guidance and training on the use of pre-alerts may promote more consistent processes and practices.

[Using an analytic auto-netnographic approach to explore the perceptions of paramedics in primary care](#)

British Paramedic Journal 9(3), 2024

Paramedics in primary care, who are generally isolated due to their geographical isolation from each other, utilise online social spaces to foster a community of practice. These forums are used

to discuss their clinical role, education and experiences, as well as to consider their place within the primary care workforce.

[Ethical issues in termination of resuscitation decision-making: an interview study with paramedics and relatives of out-of-hospital cardiac arrest non-survivors](#)

BMJ Open 14(11), 2024

Four themes were developed: preventing harm to patients, best interests, caring for the patient's family and moral distress. Paramedics conceptualised preventing harm both as saving lives and as preventing an undignified death or a life with severe brain damage. Paramedics' and relatives' views of best interests were influenced by values such as patient dignity and assumptions about age and quality of life. Paramedics expressed a duty of care towards the patient's family. Relatives conveyed the importance of clear communication and acts of care performed by the ambulance crew, underscoring the ethical commitment that paramedics had towards patients' families. Paramedics described decision-making processes that relied on clinical guidelines, rather than personal values and beliefs; this sometimes led to moral distress.

[What are ambulance personnel experiences of sexual harassment and sexual assault in the workplace? A rapid evidence review](#)

International Emergency Nursing 71, 2023

Highlights

- Female ambulance staff experienced more episodes of sexual assault and harassment.
- More sexual assault and harassment training and resources are needed for staff.
- Victims often suffered impaired job performance and moved away from frontline work.

[The RESearch PARAmedic Experience \(RESPARE\) study: a qualitative study exploring the experiences of research paramedics working in the United Kingdom](#)

British Paramedic Journal 7(4), 2023

Many research paramedics had similar experiences in terms of starting their career by delivering research for large studies, then building on this experience and the networks they create to develop their own research. There are common organisational and financial barriers to working as a research paramedic. Career progression in research beyond the research paramedic role is not well defined, but often involves building links outside of the ambulance service.

[“It's like a swan, all nice and serene on top, and paddling like hell underneath”: community first responders' practices in attending patients and contributions to rapid emergency response in rural England, United Kingdom—a qualitative interview study](#)

Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine 31, 2023

The sequential CFR practices supported ambulance services in delivering prehospital and emergency care in rural areas. CFR practices were founded on the principle of practice wisdom where CFRs constructed their practice decisions based on the patient's condition, their training, availability of equipment and medications and their scope of practice.

[Female paramedics' attitudes towards career progression in the ambulance service](#) Abstract only*

Journal of Paramedic Practice 15(6), 2023

Ninety-four women responded to the survey; six were sampled for interviews. The women varied by experience, clinical grade, age, work location and societal factors, including whether they were mothers and the number of children they had. A main overarching theme was 'social construction of women and career progression within the ambulance service'. This was informed by

three interrelated subthemes of 'caregiving lifestyle', 'perceptions of self' and 'gender stereotypes'.

Competency Frameworks

[The standards of proficiency for paramedics](#)

Health & Care Professions Council, 2023

These standards set out safe and effective practice in the professions we regulate. They are the threshold standards we consider necessary to protect members of the public.

[Macmillan Allied Health Professions Competence Framework](#)

College of Paramedics, no date

The Macmillan AHP competency framework which has been endorsed by the College of Paramedics is aligned to UKONS Acute Oncology Competence Framework and has been designed to support the development of practice and quality patient care in this important area. By utilising these shared values and competencies, alongside the colleges own existing professional standards and competencies, the framework will support paramedics working across all healthcare settings to develop their skills and knowledge to support the delivery of quality patient care to people living with cancer as well as their families.

*Help accessing articles or papers

Where a report/ journal article or resource is freely available the link has been provided. If an NHS OpenAthens account is required this has been indicated. It has also been highlighted if only the abstract is available. If you do not have an OpenAthens account you can [self-register here](#).

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