

Case report

Insights into the role of military advanced practitioners (APs) on exercise with the British Army Training Unit Kenya

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Abstract

Literature reflecting the UK civilian and military healthcare experience indicates the potential advantages of integrating the advanced practitioner (AP) role within contemporary Defence operations. The UK Defence Medical Services (DMS) has facilitated the training of a limited number of emergency medicine APs, although existing research does not delineate their operational responsibilities, particularly their contributions to deployed pre-hospital emergency care (PHEC). This paper offers insights into the experiences of four APs deployed to the British Army Training Unit Kenya (BATUK) during Exercise HARAKA SPEAR from February 2024 to March 2024. It highlights their potential utility for remote medevac operations within the UK DMS.

Key Message

This article:

- Investigates the contemporary duties of UK military Advanced Practitioners (APs) in their role as pre-hospital practitioners.
- Provides insights into the employability prospects of military APs for pre-hospital duties.
- Showcases the military AP contribution to military exercises.

Introduction

International healthcare has increasingly adopted advanced roles for non-medical professionals, such as advanced practitioners (APs), who have proven beneficial in both primary and secondary care settings.¹ These roles enhance the skill mix within teams, provide workforce resilience, and offer a clear clinical development pathway, encouraging professionals to stay in clinical-facing roles. In the UK, the NHS has seen tangible benefits from AP roles, contributing to strategic workforce solutions. Similarly, the UK Defence Medical Services (DMS) has integrated a small number of APs to improve the flexibility and effectiveness of medical care in diverse and challenging environments.

This paper aims to present the practical contributions and impact of the APs during Exercise HARAKA SPEAR, a UK military exercise in Kenya. Specifically, it highlights the APs' extended

scope of practice, including their advanced clinical reasoning and decision-making abilities, which provided enhanced care capabilities compared to standard practitioners. By examining these contributions, this paper offers valuable insights into the role of UK military APs in the context of pre-hospital emergency care. The paper begins by outlining the context of forward aeromedical evacuation in Kenya, followed by an exploration of the role of APs. It then presents clinical cases treated during the exercise, leading into a discussion section with recommendations and a conclusion with final thoughts.

British Army Training Unit Kenya (BATUK) Forward Aeromedical Evacuation (Fwd AE)

Fwd AE in BATUK plays a pivotal role in the delivery of level 5 pre-hospital emergency care (PHEC) and the medical evacuation of casualties on a continuous basis. This critical service is maintained through a rotation of a level 5 PHEC practitioner. Table 1 shows the UK DMS PHEC levels, which were designed to complement the NHS Skills for Health framework, which uses broad definitions to outline career pathways across various roles. A level 5 PHEC practitioner for Fwd AE in BATUK can be either a paramedic or emergency medicine nurse specialist who works in PHEC, each deployed for a 4-month period. Their area of responsibility extended across exercise areas, main supply routes, and adventurous training locations in Kenya. This ensured

comprehensive medical support for BATUK permanent staff, their dependents, exercising troops, and eligible civilians.

During the period from February through to March 2024, BATUK opportunistically benefited from the presence of four emergency medicine-trained APs, two were nurse advanced clinical practitioners (ACPs), one was a paramedic ACP, and one was an emergency nurse practitioner. Military APs currently remain as designated level 5 PHEC practitioners, due to a combination of factors, including their lack of defined level 6 PHEC competencies and their hospital-based emergency medicine experience. Nonetheless, their AP-acquired knowledge, skills, experience and behaviours (KSEB) provide an arguably enhanced scope of practice and clinical reasoning skills that could map to PHEC level 6 care.

Civilian and Military APs

Advanced Practice is an evolving level of clinical practice in UK and international healthcare, resulting in the creation of novel roles for nursing and allied healthcare professionals. Healthcare professionals achieving emergency medicine AP credentials are trained to work autonomously and within multi-disciplinary teams, developing diagnostic skills and KSEB to operate beyond their previous scopes of practice. These practitioners have Master's level educational awards underpinning their clinical practice.

The APs who were assigned to BATUK have undergone an Advanced Practice training pathway tailored to their operational duties within the Role 3 or hospital setting. Notably, prior to undertaking the AP role, they will have received supplementary training to work as a PHEC level 5 provider for operational pre-hospital deployments. Therefore, it could be contended that their expanded skill sets derived from emergency medicine theoretically surpass the requirements of a PHEC level 5 designation. Nevertheless, it is acknowledged that APs with backgrounds in emergency medicine may still lack the precise KSEB necessary to attain level 6 PHEC interventional competencies due to these remaining unclear and not being defined in doctrine.

The UK College of Paramedics has published a framework outlining a range of advanced practitioner roles working within in-hospital and pre-hospital settings. Their development was partly in response to recommendations within Major Trauma Care England and Trauma Who Cares.³ While these AP roles are generally ambulance profession-based, there is an increasing number of nurses delivering PHEC within enhanced Emergency Medical Services (EMS). The DMS differs from the NHS, facilitating a 50:50 split between nursing and paramedic personnel in the delivery of a level 5 PHEC scope of practice.

The governance underpinning enhanced EMS, or enhanced PHEC, supports the delivery of a range of 'advanced' skills.

Table 1. Defence PHEC levels of capability.²

Specialist PHEC "PHEM"	Level 8¹	Consultant with regular PHEM practice, FIMC and MERT Cse pass
	Level 7	Registrar, post-national PHEM training, with regular PHEM practice, FIMC and MERT Cse pass
Vocational Provider "Cap-Badged Medic"	Level 6²	MO or advanced PHEC practitioner (PHEC nurse or paramedic) with appropriate PHEC training, current PHEC practice, up to date L6 skills and competencies, DiplIMC and MERT Cse pass
	Level 5³	MO with BATLS/MPHEC. PHEC nurse or paramedic with current PHEC practice, up to date L5 skills and competencies and BATLS/MPHEC
	Level 4	Defence Medic/MA/CMT1/RAF Medic with up to date skills workbook and BATLS
Non-Vocational Provider	Level 3	Patrol Medics, Advanced Team Medics
	Level 2	Section Medics, Remote Team Medics
	Level 1	All Service Personnel on completion of Phase 1 Trg

¹ Or GPs with equivalent skills, qualifications and experience

² All EM consultants, PHEM trainee not fulfilling all requirements for L7 practice and some GPs.

³ Will often require MERT course for role

These skills can include front-of-neck access, thoracostomies, ketamine sedation, advanced drug delivery (magnesium, inotropes, intranasal analgesia), the ability to act as a suitably qualified assistant in the delivery of pre-hospital emergency anaesthesia (PHEA) and advanced decision-making. In some pre-hospital services, APs can extend their skill set to include the use of paralytic agents in conjunction with sedation to maintain anaesthesia in patients intubated during cardiac arrest, the use of ultrasound and delivery of blood products when a doctor is not present.⁴ These pre-hospital roles and scopes of practices differ and depend on a blend of local standard operating procedures and academic training. Emergency medicine-based military APs do not currently utilise these skills within their scope of PHEC practice.

The literature suggests that those APs trained in critical care are associated with decreased patient mortality.^{5, 6} In the US and Canada, the establishment of advanced paramedics is reported to have led to a 20% lower mortality rate for patients compared to the UK ambulance service paramedic model, which does not ordinarily include those trained in AP.

APs in the global healthcare workforce differ in their evolution from the UK in terms of autonomy and scope of practice. In the southern hemisphere, in countries such as New Zealand, Australia, and South Africa, paramedics and nurses provide autonomously delivered pre-hospital critical care with an even broader scope of practice. This includes advanced airway management with intubation and delivery of PHEA, a procedure that in the UK is only delivered by a pre-hospital physician. In Australia, the Mobile Intensive Care Ambulance (MICA) paramedics have a range of extended critical care skills, including PHEA. MICA paramedics are predominately dispatched to major trauma following an intensive training program; this role is associated with successful outcomes in respect to MICA-trained paramedic delivered PHEA.⁵ This southern hemisphere approach might more accurately reflect the needs of UK Defence on operations and collective training environments, which are predominantly located in austere locations.

One of the key advantages of integrating APs within DMS is their ability to add resilience and support any existing multi-disciplinary medical team, particularly in critical areas of austere operations. It is important to emphasise that the role of the AP is to complement and enhance the existing capabilities of a team that includes specialist doctors rather than replace them.¹ In military exercises, APs could enhance the capabilities of remote treatment facilities, especially in prolonged field care, transferring critically ill patients, and supporting Level 8 Medical Emergency Response Teams (MERT). By providing advanced clinical skills, APs help ensure timely and effective care in remote environments, bridging gaps such as timely access to skilled healthcare that might arise during extended field operations

with small medical coverage. Their autonomy in making clinical decisions further strengthens the team's ability to deliver time-critical interventions. Additionally, the structured career path offered to APs contributes to workforce resilience by attracting and retaining skilled nurses and paramedics within the DMS.

Injuries treated during Exercise HARAKA SPEAR and the role of APs

The deployment of APs for the below cases has provided an opportunity to examine an APs' extended scope of practice. Compared to a standard level 5 PHEC nurse or paramedic, an AP in the UK can independently prescribe medications, perform focused clinical assessments, and quickly diagnose acute presentations for more immediate and effective patient care in critical situations. The treatment of musculoskeletal injuries, diagnostic skills, undertaking minor injury assessments, prescribing medications, and clinical decision-making presents a multifaceted approach to enhancing PHEC capabilities during this exercise period.

Minor injury assessment

Musculoskeletal injuries accounted for nearly half of the patient presentations during the exercise, including three cases of Ottawa's positive ankle injuries. The APs utilised their experience from the Emergency Department and specialised training in minor injuries assessment and demonstrated a higher level of expertise compared to a standard level 5 nurse or paramedic not trained in this area. This advanced knowledge allowed for more accurate and efficient assessments, resulting in better-informed treatment decisions, including de-escalation where appropriate. This last point is valuable in remote, resource-finite environments. All three patients received timely analgesia, inclusive of ketamine. In addition, an air-cast boot was applied for effective splintage and analgesia. Three patients presented with a dislocated shoulder. One patient directly benefited from having their spontaneously dislocated anterior shoulder relocated by an AP. The skill required to attempt the relocation of a shoulder in the field is not a routine competency for a PHEC level 5 provider. The second patient's shoulder had been relocated prior to the arrival of the Fwd AE practitioner by a Medical Officer (MO) who witnessed the incident. The third patient's shoulder was not relocated on scene by the AP as it had dislocated following blunt trauma and the patient was later confirmed to have a humeral head fracture. These musculoskeletal injuries further emphasise the competence of APs in managing orthopaedic emergencies efficiently. Their ability to perform relocation procedures demonstrates a high level of proficiency and confidence in managing complex injuries outside their scope of practice as PHEC level 5 providers.

APs with experience in minor injury management excel in conducting thorough clinical assessments of musculoskeletal injuries to determine the appropriate course of action, whether

Table 2. Clinical cases

POI time	M/F	Adult or child	Presentation	Disposal	MEDs (pre FWD AE)	Meds (FWD AE)	Prescribed or PGD	Treatment outcome and AP value
			Incident / Injury	Admission	Type/Amount	Type/Amount		
13:10	F	Child	?Malaria	Admission	PR Paracetamol Antibiotics	Nil	N/A	Routine transfer. Admitted and discharged after 24hrs
18:29	M	Adult	Crush, laceration	Admission	Ketamine 42.5mg TXA 1g Co-amoxiclav 1.2g Normal saline 1L Paracetamol 1g Ondansetron 4mg Penthrox x2	Nil	N/A	AP utilised minor injury assessment skills, leading to an accurate diagnosis and appropriate pain management, resulting in the patient being stabilised for minor surgery and aeromedical evacuation to the UK.
18:30	M	Adult	Collapse	Admission	Paracetamol 1g Ceftriaxone 2g Glucose 10% 500ml Saline 1.5L Ondansetron 4mg	Nil	N/A	AP performed a thorough physical assessment, which allowed for the de-escalation of care and stabilisation of the patient for aeromedical evacuation.
06:30	M	Adult	Non-traumatic chest pain	Admission	Nil	Aspirin 300mg Ondansetron 5mg	Patient group directive	AP reviewed utilising physical assessment skills. ECG taken and reviewed Admitted and Aeromed UK
14:59	M	Adult	Perianal abscess with sepsis	Admission	Di-hydrocodone 60mg PO	N/A	N/A	Routine transfer. AP monitored the patient's condition.
20:30	M	Adult	?Fractured NOF	Admission	Paracetamol x2 Penthrox Ondansetron Glucose 10% Morphine 20mg	N/A	N/A	Nil routine transfer X-ray no fracture, soft tissue injury
11:00	M	Adult	Anaphylaxis	Admission	Adrenaline 300mcg x4 doses Naproxen Clindamycin 1500ml normal saline	N/A	N/A	AP reviewed utilising physical assessment skills. Observation and bloods, discharged
19:48	M	Adult	Fractured ankle	Admission	Fentanyl 800mcg Lozenge x2 doses, Penthrox x2 doses	Morphine, Paracetamol Ondansetron Ketamine 20mg	Prescribed	AP effectively utilised minor injury assessment skills and prescribed Penthrox, eliminating the need for a PGD, ensuring effective pain management and proper stabilisation for orthopaedic review
14:00	M	Adult	Dislocated shoulder	Review in fracture clinic	Nil	Penthrox Morphine Paracetamol	Prescribed	AP performed shoulder relocation using minor injury assessment skills, facilitating the patient's referral to an outpatient clinic without the need for further invasive treatment
22:34	M	Adult	Ankle inversion	Admission	Penthrox x2	Penthrox Morphine Paracetamol	Prescribed	AP prescribed Penthrox for pain management, enabling patient extraction from the ground, and utilised minor injury assessment skills

POI time	M/F	Adult or child	Presentation	Disposal	MEDs (pre FWD AE)	Meds (FWD AE)	Prescribed or PGD	Treatment outcome and AP value
			Incident / Injury	Admission	Type/Amount	Type/Amount		
22:25	M	Adult	Collapse ?cause	Admission	Nil	Aspirin 300mg	Patient group directive	AP ensured stable transfer by conducting a thorough assessment, ensuring no escalation in care was needed
11:45	M	Adult	Dislocated shoulder	Review in fracture clinic	Nil	Nil	N/A	AP examined the joint and made a timely referral to an outpatient fracture clinic, ensuring appropriate follow-up care
16:00	M	Adult	Dislocated shoulder	Admission	Penthrox x2 Paracetamol 1g Ibuprofen 400mg	Morphine 10mg, Ondansetron 4mg Ketamine 10mg	Patient group directive	AP assessed the joint and, due to concerns about a fracture, chose not to attempt relocation. AP used telemedicine to consult with a second on-call AP, ensuring the patient received the safest possible care. The patient had a confirmed humeral head fracture and was aeromed back to the UK.

immediate treatment or referral to a higher level of care. This approach ensures that patients receive patient-centred, timely interventions, minimising unnecessary admissions to medical facilities. Two cases avoided admission and were referred to the local outpatient fracture clinics. In instances where referral to a clinic is deemed necessary instead of admission, APs demonstrate their ability to recognise the level of care required for each patient. By effectively triaging cases and facilitating appropriate referrals, APs contribute to efficient resource utilisation and patient-centred care delivery.

Non-medical prescribing

Three of the APs hold Non-Medical Prescribing (NMP) qualifications, which is an integral element of their Master's program. This qualification empowers them to autonomously diagnose conditions and prescribe medications within their scope of practice, enhancing their ability to provide comprehensive and timely care to patients in the field. The emergency nurse practitioner, who did not hold an NMP qualification, required the use of patient group directions (PGD) to administer medication. A PGD is a pre-written directive to give certain medication, which is signed by a supervising MO. The APs reported that having the ability to prescribe medication was recognised as a core skill for achieving autonomous practice and set them apart from their previous role as nurses or paramedics. It was felt that prescribing offers flexibility over a "restrictive" PGD and was a requirement for a military AP. It was considered safer in terms of medicine management, providing assurance that medication could be tailored to patient needs, as not all patients' needs fit neatly into PGDs. At the time, low-dose methoxyflurane (Penthrox) did not

have a PGD for a level 5 PHEC provider and was not cleared to be used in the aviation environment. APs prescribed Penthrox as an analgesic for two patients, either to facilitate procedural analgesia for shoulder relocation or as part of a multi-modal pain management approach prior to emplaning, capabilities that a standard level 5 practitioner would not currently have.

The ability of APs to diagnose and prescribe medications like Penthrox, a medication familiar in their UK practice, highlights their competency, particularly in managing acute pain during emergencies, an area in which patients have reported unsatisfactory care.⁷ This capability not only improves patient comfort but also reflects the APs' ability to make clinical decisions independently without relying on a PGD.

Clinical Decision-Making

APs, with additional training in clinical decision-making, were crucial in handling several medical emergencies, including a witnessed collapse and anaphylaxis. Their advanced clinical expertise allowed them to swiftly assess these situations and implement the appropriate interventions, ensuring timely and effective patient care. In some respects, they de-escalated care through effective, emotionally intelligent engagement with the on-scene medical teams. Autonomy in the context of APs encompasses the capacity to make independent decisions regarding patient care and to assume overall responsibility for their care planning. This includes the ability to diagnose medical conditions, develop treatment plans, and prescribe medications within their scope of practice.

Discussion

Overall, these cases have highlighted APs' diverse roles and responsibilities beyond standard PHEC level 5 practitioners. Although a small case series, they all illustrate the APs' potential to positively impact patient care in remote environments. Through their advanced clinical skills, critical decision-making experience, and patient-centred approach, APs can enhance the quality and effectiveness of PHEC in remote settings.

In reference to military AP roles, previous literature has highlighted a significant gap in research concerning the employment and scope of practice of a UK military advanced practice despite a number of APs already trained.^{1,8} Royal et al (2020)⁸ reviewed the deployment of military nurse practitioners within a pre-hospital treatment team during a military exercise. The pre-hospital treatment team is a small, flexible team that has a clinical lead that can prescribe medication, either deploying general practice MOs or military nurse practitioners. The role was assessed against the four pillars of advanced practice (leadership, clinical practice, quality improvement and research). Notably, the paper mentions the impact of clinical decision-making and experiential evidence of a competent military nurse. From a clinical perspective, military nurse practitioners were reported to add value in primary and pre-hospital care for patients presenting in the field with a range of clinical presentations. The paper notes that the role is continuing to evolve, and the authors recommend the use of telemedicine to further enhance the capabilities of lone military nurse practitioners by providing support and empowerment through reach-back (support via virtual means when deployed in remote areas).

Internationally, little evidence relates directly to APs in military pre-hospital settings. However, military nurse practitioners with different levels of advanced skills are currently being utilised in military treatment centres, such as Role 1 and Role 2. An observational study, of US military nurse practitioners (n=50) deployed to Afghanistan and Iraq in 2010, was conducted by Lewis et al (2012).⁹ The study demonstrated that military nurse practitioners, used within the Role 1, provided an uplift in capability, as the role is considered flexible and dynamic. The nurse practitioner role was shown to enhance the effect of care given at Role 1 through an up-skilled workforce resulting in timely access to care in different geographical and austere settings. During their study of deployed APs, Lewis et al⁹ found that advanced clinical skills and decision-making positively impacted patient care. Furthermore, those nurses used their autonomous skill sets to maintain a 'busy workload', thereby enabling patients to be seen without undue delays in the absence of a doctor. The primary advantage for 'up-skilled' military clinicians is to provide injured soldiers with the most timely and skilled care, which can be delivered as close to the point of wounding as possible¹⁰ and also positively influence the operational patient care pathway.

Recommendations

The findings suggest that introducing APs into the PHEC speciality will increase the capabilities of remote operations and exercises. The paper has demonstrated that nurses and paramedics are increasingly expanding their scope of practice, particularly in the Emergency and PHEC settings. This experience should be capitalised on by formally introducing APs for military PHEC. With ongoing contingency operations, these roles provide a depth of knowledge and experience while creating greater flexibility, resilience, and improved patient safety for deployed teams. APs are autonomous in practice in these roles, which will undoubtedly prove a valuable and dynamic asset while providing a clinical career pathway for nurses and paramedics wishing to develop their scope of practice in remote medevac.

An AP qualified in prescribing offers flexibility for deployed operations. APs that prescribe can access medications outside of the constraints of PGDs, providing patients with timely access to medication. For example, enabling earlier administration of analgesia or antibiotics. In the context of Kenya, where access to advanced medical resources may be limited in certain regions, the provision of minor injury courses underpinned with clinical experience holds particular significance. This approach would equip healthcare providers with the skills and knowledge necessary to effectively assess and manage minor injuries, improving the accessibility and timely access to treatments in the field.

It is recommended that PHEC APs undergo a blended approach to military training underpinned by a national curriculum and clinical exposure. Training should include NMP, musculoskeletal injury management and critical care experience with an enhanced UK-based EMS provider. Noting this small case series, critical care presentations may be the exception in the deployed environment, and efforts should be made to mitigate skill fade following deployment.¹¹

Conclusion

The integration of upskilled nurses and paramedics as APs into military PHEC presents an avenue for enhancing both the quality of patient care and career progression opportunities within the medical field of remote medevac. Working alongside MOs, APs can support positive outcomes and add resilience to teams, acting as a force multiplier for PHEC Level 3-5 practitioners. Training and investment in the development of APs are critical not only for the professional advancement of these practitioners but also for strengthening the overall resilience and readiness of military medical teams for remote medevac. Acknowledging the short period covering HAKA SPEAR, this paper has demonstrated that APs are a valuable addition to the military medical team, capable of significantly improving patient outcomes during military operations and exercises.

Authors' contribution statement

This paper was researched, written and coordinated by EP. RS assisted with further research and formatting. SG reviewed the paper and provided significant feedback to ensure the paper had application for a PHEC audience. All authors reviewed and approved the final version of the manuscript.

Conflict of interest

The authors declare no conflicts of interest.

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References

1. Paxman ED, Lamb D, Indlay S. Is there a role for an advanced practitioner in UK military prehospital care? *BMJ Military Health*. 2021;169(4):370–372. doi: 10.1136/bmjilitary-2021-001781
2. Thompson M, et al., Defining capabilities in deployed UK military prehospital emergency care. *BMJ Military Health*. 2024;170(2):150–154. doi: 10.1136/military-2022-002159
3. NCEPOD. *Trauma: Who Cares?* 2007 [cited 2019 Apr]; Available from: <https://www.ncepod.org.uk/2007t.html>
4. von Vopelius-Feldt J, Bengler J. Who does what in prehospital critical care? An analysis of competencies of paramedics, critical care paramedics and prehospital physicians. *Emergency Medicine Journal*. 2013;31(12):1009–1013. doi 10.1136/emered-2013-202895
5. Hughes G. Critiquing Critical Care Paramedics. *Emergency Medicine Journal*. 2011;28(8):642.
6. Jashapar A. *Clinical Innovation in pre-hospital care: An introduction to Critical Care Paramedics in the United Kingdom*. London: The Economic and Social Research Council, 2011.
7. Häske D, et al. Prevalence of prehospital pain and pain assessment difference between patients and paramedics: a prospective cross-sectional observational study. *Scientific Reports*. 2024;14(1): 5613.
8. Royal PM, Smith MB. A UK Military nurse practitioner on Exercise SAIF SAREEA 3: the first Overseas deployment. *BMJ Military Health*. 2020;166(6):425–428.
9. Lewis PC, Stewart D, Brown W. Deployment experiences of Army nurse practitioners. *Military Medicine*. 2012;177(8):889–893.
10. Blaz, D.A., J. Woodson, and S. Sheehy, The emerging role of combat nursing: the ultimate emergency nursing challenge. *Journal of Emergency Nursing*. 2013;39(6):602–609.
11. Johnston AM. Deskillling and return to practice on low-tempo contingency operations. *Journal of the Royal Army Medical Corps*. 2019;165(5), 310–311. <https://doi.org/10.1136/jramc-2019-001162>