

2024 HEMS ELECTIVE REPORT:

Essex & Herts Air Ambulance



THE ROYAL
COLLEGE OF
SURGEONS
OF EDINBURGH

The Faculty of Pre Hospital Care

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For my final year medical school elective, I had the privilege of being selected for a placement with the Essex & Herts Air Ambulance (EHAAT). After a written application and an interview by the Faculty of Pre-Hospital Care (FPHC), I spent five incredible weeks with the charity which strengthened my existing interest in pre-hospital emergency medicine and allowed me to discover aspects of the career I hadn't encountered thus far.

ABOUT EHAAT Essex & Herts Air Ambulance is one of 21 air ambulance charities in the UK serving the critically ill and injured people of Essex, Hertfordshire and the surrounding areas. Its two bases – North Weald near Harlow and Earls Colne near Colchester – allow the critical care team to reach patients across the region within minutes. The charity operates helicopters and rapid response vehicles (RRVs) out of each base and provides a 24/7 service. Generally, helicopters operate in daylight hours, but they are also equipped with a Night Vision Imaging System (NVIS) which allows them to operate in darkness. At night and during adverse weather unsuitable for flying, RRVs are utilised. Tasking is from the critical care desk based in the East of England Ambulance Trust (EEAST) control room which also tasks other enhanced services provided by other air ambulance charities and by BASICS schemes. The critical care team consists of a pre-hospital care doctor and paramedic and, when flying, two pilots. At the time of writing, missions are delivered by just short of 40 doctors, 15 critical care paramedics (CCPs) and 6 pilots who are supported by a strong team of charity staff and volunteers. Doctors come from a range of backgrounds including emergency medicine, anaesthesia and intensive care medicine, and surgery. They typically spend a year in full-time training with EHAAT and then have the opportunity to come back as emeritus doctors. Critical care paramedics have extensive experience in land ambulances, services like Hazardous Area Response Teams (HART) and Tactical Response Units. They spend a longer time working for the charity and some are permanent members of staff taking on other operational roles. Pilots often have previous military experience and are highly skilled in flying the aircraft in a variety of adverse weather and other unfavourable circumstances. Apart from providing care to the critically injured and ill, EHAAT also operates comprehensive research and educational programmes under the newly founded Centre for Excellence.

CLINICAL EXPERIENCE During the elective placement, I had the opportunity to observe clinical shifts both on the helicopter and RRVs. Despite one of the charity's helicopters temporarily being unable to take an observer during my elective period and thus reducing the availability for observer shifts, my supervisor Gaynor Wareham (one of EHAAT's clinical managers and CCPs) made every effort to ensure I had enough clinical exposure. After several years of taking part in various simulation-based exercises and events, I felt that observing the real-life



HEMS response to jobs would help complete the picture. One might not realise it from the outside, but learning starts from the very beginning of each shift when the crew have a briefing of the current weather

and road conditions, crew resource management (CRM) as well as plans for commonly encountered scenarios. There is also a meticulous check of all the kit ensuring it is ready to be used. Being part of these processes allowed me to get familiar with all the equipment and integrate myself into the team.



Once a job comes through, the crew are on their way to the scene within minutes. En-route everything is done with military-style precision. If getting to the patient by air, pilots discuss their landing plans with the clinical crew while they make a preliminary plan about roles, equipment, nearest hospital that would be most appropriate for the patient (e.g. a major trauma centre/a burns centre/a cardiac centre etc.). Something I only came to appreciate once at EHAAT was the value of the visual report on the approach to scene – as the HEMS crew is often the only resource arriving by air, they

are able to assess the site of the incident from above and gather crucial information such as access/egress, any areas which may need to be closed to the public (e.g. roads), any hazardous exposure and more that might be trickier to evaluate from the ground.

When driving, the doctor expertly navigates the paramedic whose job is to transport the crew to the patient as quickly and as safely as possible. As an observer, you are in the unique position to take all of this in and begin to comprehend the dedication crews put into every job. Even though my role was not hands on, I still felt and was treated like a part of the team which definitely added to the experience.

I attended a variety of jobs across both day and night shifts. Some of the more memorable ones included a head injury following a road traffic collision (RTC) which required a pre-hospital anaesthetic (PHEA) and transfer to a major trauma centre. This was the first ever EHAAT job I attended and it was a great example of teams from across the emergency services working together to maximise the patient's chance of a favourable outcome. During my base days I had familiarised myself with the EHAAT PHEA standard operating procedure (SOP) and had also taken part in a simulation of it. Seeing it delivered to a real patient solidified my understanding of this crucial intervention that, currently in the UK, can only be performed by a doctor and is vital in patients with a head injury. As haemodynamic control is of utmost importance in traumatic brain injury, the patient also had an arterial line placed by the EHAAT doctor using ultrasound guidance. During that job, I also learnt a lot about transferring a critically injured, intubated patient over a long distance as the nearest major trauma centre was a 45-minute blue light drive away. Other jobs I observed which highlighted the importance of a critical care team for patients' survival were several cardiac arrest cases where land ambulances had requested the assistance of EHAAT. In those patients, EHAAT clinicians are able to administer specialist drugs depending on the suspected cause and duration of the cardiac arrest which are not otherwise available to ambulance crews. Arrangements can also be made for transfer to a facility which delivers, for example, extracorporeal membrane oxygenation (ECMO) for management of ongoing cardiac arrest or primary percutaneous coronary intervention (PPCI) for definitive treatment of conditions such as an

acute coronary syndrome. Further cases included a sports injury requiring procedural sedation and fracture manipulation, a workplace accident involving an HGV, a paediatric cardiac arrest and others.

Regardless of the nature of the job, clinical shifts gave me an insight into the working life of a HEMS crew and the challenges they face including the difficult decisions they need to make, challenging environments they work in and the rapidly evolving scenes they deal with.

RESEARCH, DEVELOPMENT AND EDUCATION AT EHAAT



Given the high acuity of jobs and the specialist skillset required of an effective HEMS crew, each clinical member must ensure their level of skill and knowledge is maintained appropriately. This is done in a variety of ways including simulation exercises which take part in between jobs during clinical shifts. As someone with previous experience in simulation, it was a great opportunity for me to get involved in these exercises and be exposed to a variety of scenarios as a full-

fledged member of the team in the safety of the simulation suite. Pictured is the 'kit dump' which the CCP is responsible for when preparing to deliver a PHEA alongside their doctor crew mate.

Another important aspect of learning takes place during the weekly death and disability (D&D) meetings where jobs from the previous few weeks are discussed in great detail with the aim of breaking down the mission into components and learning from each one of those. During D&D discussions I was able to appreciate the challenges posed by various human and environmental factors and the crew's mechanism of dealing with them. Usually, the D&D would be led by one of EHAAT's governance leads and the crews whose jobs are being discussed start by giving an overview of the job, but also of what kind of shift they had had up to that point, what the weather was like, whether there were any particular circumstances that day (e.g. training, aircraft maintenance etc) and then the team moves onto discussing the particulars of the response to the job, the reasoning behind each decision and the lessons learnt. For me, these were highly informative and I was very grateful to the team for allowing me to ask questions and take part in the discussion.

Furthermore, EHAAT organises regular clinical governance days (CGDs) where a topic of concern in HEMS is delved into not only by staff but also by external speakers with relevant experience. I was lucky that there was a CGD happening while I was at EHAAT and the topic was major incidents. Presenters included responders to the 2017 London Bridge and Westminster attacks, senior decision makers involved in the aftermath of the Manchester arena attacks and more. Despite the heavy nature of the topics, the day was filled with lots of great learning and sharing which shed a light on a topic I had not covered a great amount. I would encourage students and trainees interested in PHEM to seek out opportunities to attend CGDs as they are an integral part of learning and are offered by most (if not all) air ambulance charities. Particularly for EHAAT, registration happens through the clinical area portal of the website.

As well as delivering excellent patient care, EHAAT greatly values research, development, education and community engagement which have been an even more central part of the organisation since the inception of the Centre for Excellence in 2023. During the elective, I received a warm welcome from staff at the Centre who spoke passionately of their work and future plans including the new EHAAT community CPR project aimed at providing vital basic life support to school pupils – a gap in the curriculum which desperately needs addressing. I also undertook a research project around EHAAT's response to cardiac arrests - one of the Centre's main areas of focus. I worked with cardiac arrest lead and CCP Adam Pitcairn to characterise the service's response to cardiac arrest patients and draw conclusions about its improvement and onward trajectory. I was able to utilise research skills from my previous degree as well as existing knowledge from medical school and build upon them through this project. It also gave me an insight into how prehospital care research differs from the more traditional forms of research I had been previously exposed to.

One of the Centre for excellence initiatives I was lucky to attend was the Prehospital Care Course – an intensive, week-long training course designed specifically for EHAAT's new intake of pre-hospital care doctors and CCPs. I had the opportunity to sit in on various lectures and take part in workshops. The week concluded with a 'day at work' exercise which challenged my existing ideas and knowledge of simulation and brought a whole new meaning to the term. The team's thorough preparation and brilliant



execution enabled the candidates to fully immerse themselves into the role of a HEMS crew member in preparation for their upcoming assignments with the charity. For us as volunteers, it was eye-opening and extremely valuable to be part of this course and start to see ourselves as future prehospital emergency medicine practitioners.

In conclusion, my elective at EHAAT provided a well-rounded overview of a career in prehospital emergency medicine and all the opportunities and challenges that come with it. I would like to thank the FPHC for the trust in me to undertake this placement and most of all, I am grateful to each and every member of the EHAAT crew, charity staff and volunteers who I worked with during my elective who were all extremely welcoming – thank you, my experience wouldn't have been the same if it wasn't for your generosity and kindness!