EHAAT FPHC-Facilitated Elective 2022

Intro:

Curtesy of the Faculty of Prehospital Care, I was given the career-defining opportunity to be a transient part of the Essex & Herts Air Ambulance Team for four immersive weeks over July and August 2022.

EHAAT is one of four HEMS providers in the region covering the expansive East of England. Tasked on average six times a day with the call signs Helimed or Medic (Rapid Response Vehicle), 07 and 55. In the summer, the helicopter flies from dawn to dusk, with the critical care cares taking over coverage at twilight, ensuring a 24/7 critical care service. From road traffic collisions to equestrian accidents, cardiac arrests to mental health crisis, the variety of taskings attended by the service is as vast as it is varied.

To give an insight into my experience of prehospital practice, I have expanded on jobs and I found most interesting, from either a clinical or operational perspective.

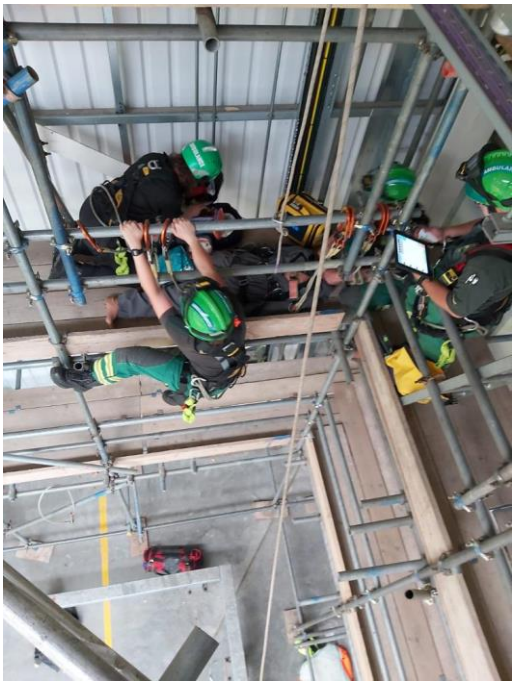
Learning to Fly:

Imposter syndrome manifests particularly acute-on-chronically when you find yourself sporting a flight-suit some 7 years prematurely, presenting as a curious cocktail of euphoria and anticipation. I had asked a CCP colleague for some sage advice before starting. His response, 'The 8th Law of Samurai'. Which, I learned, is to never lose your beginner's spirit. Which, fortunately, was all I had to offer! My trepidation was rooted in resentment of my own lack of experience, feeling that I would be more a hinderance than help to the team. In hindsight, this was quite the opposite. I had something to contribute a clinical team of two with eyes-in and hands-on understandable struggle to do consistently; maintain oversight of the scene.

Interoperability: PHEM beyond HEMS

Over the course of 4 weeks, I made it a priority to understanding the operating practices of the emergency services I have not yet had a chance to work with, all of whom converge with HEMS at the pre-hospital interface. I divided non-flight days between time with the Hazardous Area Response Team (HART), Special Operations Response Team (SORT) and the East of England Ambulance Control.

My time with HART was a particular highlight. Quite literally. I spent the 12h shift as a transient member of the team, partaking in some working at height training, checking the Incident Response Unit and taking the Polaris within for a test-drive. This 6X6 off-road vehicle is one of the most versatile pieces of equipment in HART's arsenal, capable of reaching uniting crews with patients isolated on difficult terrain. The team's willingness to discuss and demonstrate the rationale for choosing a particular extrication device from their vast repertoire was invaluable. For example, the basket stretcher's compatibility with the Polaris' and most winch systems, to inflatable lifting chairs for fallen bariatric patients. Given my prior climbing experience, I had the opportunity to undertake some working at height technical skills and simulation training. I quickly acquired a new appreciation for the logistical challenges of managing a spontaneous subarachnoid haemorrhage and polytrauma patient on a narrow platform with minimal kit. I began to appreciate the importance of the hierarchy of controls in practice; the provision of safety systems allowing for the hazard (height) to be temporised, facilitating safer clinician operating conditions. The opportunity to practice prehospital clinical decision-making in such an environment was a cognitive challenge from all angles, emphasising of the importance of perfecting core clinical skills before you have to execute them in novel and dynamic environments!



The day was punctuated by a tasking of a different nature than I expected. HART are a highly skilled specialist unit capable of navigating the hazards of most inner cordons, yet their skills are utilised on a daily basis by ambulance crews for the management of medically entrapped bariatric patients. An uncommon reason for prolonged on-scene times, HART teams provide extrication expertise on crew request for this challenging patient group, ensuring their access to definitive care is expedited. During my shift, we were called to one such scene whereby HART offered logistical support to ensure safe access and egress for the patient in a confined house, and another where they operated jointly with the fire service to expedite the extrication of a ROSC patient. The latter was a masterclass of JESIP's joint

operating principals in action. As a HEMS crew we had the pleasure of working with the same teams on complex jobs from an extrication on vac splint from a tower block flat to unstable cars plunged into ditches.

Scene Complexity:

When we arrived on scene, the ambulance and fire service scene commanders promptly co-located, identified themselves and provided an update on the scene from each of their service's perspectives. The plan was co-ordinated between all three services, with HEMS tasked with assessing the patient themselves in prior to extrication, the pace of which would be guided by clinical need, FRS would continue removing the window frame and providing structural support for extrication and the ambulance service was to continue leading the post-ROSC care phase. Notable hazards and risks expressed were that of patient harm, posed by the current 'threatened' airway and suboptimal position for effective airway management, the clinical limitations of working in confined space and risk to team of physical injury during the extrication phase. The commanders reconvened 5 minutes later to provide updates; an important phase in driving the scene forwards. We attempted to identify any 'scene anchors' that may unduly prolong on-scene time once the patient was extricated, and mitigated these.

For example, calling top cover for advice on the threatened airway early, pre-alerting the receiving hospital, clearing the egress route from the window to the ambulance doors and taking a collateral history from the family. This effectively ensured that time from extrication to scene departure was dramatically reduced. Debrief was a staple after such jobs, fostering candid and constructive discussions around ways in which the job was successful and could be improved. This job offered a point of discussion around the logistical difficulties of ramping the head of the stretcher whilst the patient was still on a scoop. Optimal patient positioning was unachievable in a timely or pragmatic fashion, necessitating a rapid risk-benefit decision to either, stay on scene to begin a lengthy scoop removal process or, immediately proceed to hospital with the patient still supine. This was an instance whereby a clinical decision had to be made by HEMS without a consensus, in the interest of patient's safety. The manner in which this was done, both contemporaneously on scene and rationalised in debrief for the benefit of all, ensured an open constructive discussion around the topic from all services. I believe this is the basis of fostering positive interactions at the PHEM interface, and is the basis of the Civility Saves Lives Campaign.

Life on Land: The Air-Base

Base-days offered a welcome opportunity to integrate into the day-to-day working of the service and get to know its incredible people. Between jobs, I used my down-time to work on my project surrounding the services' introduction of prehospital blood products in March 2019; a potentially life-saving advancement. Spearheaded by Laurie Phillipson, who kindly supervised, the retrospective analysis explores whether there was any difference in on-scene times before and after the introduction of pre-hospital packed red-blood cells and Lyoplas.

Given my partiality to simulation-based training, the crew generously allowed me to partake and lead some simulations on base. These were based around the duty crew's learning outcomes for the shift, featuring paediatric rapid sequence inductions (RSI) to resuscitative hysterotomy procedures. Deliberate practice and drilling of technical skills are well established techniques to improve performance under pressure, but even as we practiced, it did not occur to me just how soon those skills would be called upon. Within days of the resuscitative hysterotomy sim, the claxon sounded and the radio transmitted '29YO, 34 weeks pregnant, seizure'. Like clockwork, the crew reverted to their unique idiosyncratic automatisms in the 3 minutes before take-off. Some grab a quick drink, run for a comfort break, check a

map, grab glasses, or… wrestle with the unruly helmet fastening that remained the bane of my shift. As we loaded onto the aircraft, rotors running, the downdraft replaced by constant radio transition drowning out all thought, I glanced around the team around me aircraft and felt certain we were doing the same thing. Mental rehearsal. The indications, contraindications, time frames, equipment list, bags to bring to scene, the layers traversed by a skilfully wielded scalpel, all freshly forthcoming. Was this an availability heuristic? Yes. Was this cognitive catastrophisation? Perhaps. But in this information poor, time pressured environment, it is good practice to prepare for the worst and hope for the best. So, for that pensive 12-minute flight, one might say we were all singing off the same HEMs sheet.

For me, appeal of prehospital care lies in its breadth. Sound clinical knowledge is irrefutably important, but there are a wealth of other skills that distinguish a PHEM practitioner from those that operate solely between four walls. Appreciating the wealth of experience seated around me in the ops room, I spent time with our well-travelled pilots to delve into the world of aviation logistics. Unlike medicine, it was much harder to boil down to the ABCs! However, an appreciation of radio etiquette, mapping land and air transfer times to our nearest hospitals allowed me to think critically about these variables during the flight phase.

A non-clinical skill I was keen to hone was that of reading the wreckage, or scene. Traditionally, this has been the specialty of our paramedic colleagues, who are often the first on scene and last to leave. Having attended RTCs of various scale and composition, I made a mental note to attempt to 'read the scene' for myself. What I failed to appreciate, was that we were the only party with a sweeping birds-eye view from above.

Clinically, I was kept on my toes with weekly 'Death & Disability' reviews whereby we reviewed the most cases of the last week for critical analysis. Listening to experts in their field critically analyse cases in pursuit of improving patient care was an education in and of itself. One particular job I attended was volunteered by the crew for review, notable for the unforeseen interaction of suboptimal patient factors, human factors and technical skills.

Practice Changing Patients:

Most clinicians can recall with disarming clarity the handful of patients, amongst the thousands of fleeting interactions that punctuate a career, that have left a mark on their practice. Prior to starting with EHAAT I had mentally prepared myself as best I could for those jobs I felt might live rent-free in my mind for some time after the fact. I had accounted for my known triggers, and was very impressed by the EHAAT induction on mental resilience on my first day. I predicted these would be traumatising psychologically by

tragic or traumatic circumstance or visually by the story the surrounding scene betrays. I was therefore wholly unprepared when two seemingly mundane jobs took me off-guard.

Six Take Aways:

1. **Pouring the Tea:**
   A brew is the gateway to difficult conversations: Pour the tea and worries seem to follow-suit.
2. **Snacks are the Strongest Currency:**
   My leg bag was reliably stocked with stash PRN Maoams Stripes. These were a welcome lift following debriefs outside ED with crews, or anti-hypoglycaemics for those marathon shifts where the claxon just kept on sounding.
3. **The PHEM-archetype Myth:**
   There is no 'PHEM-type' we have all heard ascribed to the flight suit-clad. There is, instead, both a need and desire for diversity of thinking and life experience, and the teams I worked with were testimony to the merits of this mantra. This is how glass-ceilings of gold-standard practice are broken and transcended.
4. **Self-Care:**
   There is a special kind of discomfort reserved for trying to defer the urgent need to void mid- 45-minute land transfer along a pot-hole riddled road on blue lights. When the claxon sounds, make sure you have optimised your own physiology before departing!
5. **The Art of Masterful Inactivity:**
   Sometimes, doing nothing is the most powerful (psudo)intervention. Any team with an advanced skill set faces an undercurrent of subliminal pressure to perform the interventions they have in their repertoire. We attended countless jobs whereby deploying such skills, to that particular *patient,* at that particular *time* in that particular *place* would have been detrimental to the patient, as only two of those circumstances were optimal. Just because you can doesn't mean you should.
6. **A Change is as Good As a Rest:**
   The adage holds true. I found the final sprint of the medical school marathon had been more wearing than I cared to admit. It is easy to lose sight of why you started, but a taste of the dream was just the remedy. I left ready to face whatever the next few years has in store!

Acknowledgements:

I am indebted to EHAAT for their warm welcome, wit and wisdom, whether imparted by the clinical crew imparted over caffeine-mediated debriefs or aviation intel from the pilots in the ops room. I will not forget your patience, nor the willing reception of my refractory enthusiasm and curiosity. It was a privilege to share the skies with you all and hope one day to do so again with the experience to match the enthusiasm!

Rachel Kiernan-O'Donnell

Final Year Medical Student, University of Liverpool

BSc(Hons) Urgent & Emergency Care, University of Plymouth

General Secretary of Student and Junior Doctor Group, Faculty of Prehospital Care