TAAS Pre-Hospital Elective 2022

Eleri Clarke final year medical student – University of Nottingham

In 2021, covid-19 had made the idea of electives at my university seem incredibly unlikely. The year above me had theirs cancelled, and at the beginning of my final year we had been told that we also wouldn't be able to take any. I had been interested in the FPHC HEMS elective since early years. I have always been fascinated by pre-hospital care, and undeniably the HEMS especially, so despite not thinking I would have a chance of getting a place anyway I was disappointed that I wouldn't even be able to apply. However, in late September (about 2 weeks before the deadline to apply for the HEMS elective) we were informed that the pandemic situation had evolved to allow for optional electives this year. I scrambled to apply without any time for nerves or overthinking. Th application process involved answering 3 short written questions from FPHC, and later I was asked to attend an interview with student reps from FPHC. The interview was conducted over zoom and I was asked to expand on my initial answers to the questions in the written application, what experience I had, and what kind of things I wanted to gain from the elective if I was successful.

When I found out I had been given one of the electives I was stunned, but over the moon. I was so excited to be involved in such a hands-on elective.

I was given my elective with The Air Ambulance Service (TAAS) who operate the Warwickshire & Northamptonshire Air Ambulance and the Derbyshire, Leicestershire and Rutland Air Ambulance. TAAS has 2 helicopters and 2 critical care cars which operate over a patch spanning over 1000 square miles. I was put in touch with the elective lead, Dr Caroline Leech, an Emergency Medicine and PHEM consultant at Coventry. She arranged a vast range of experiences for me, including ambulance shifts out of Loughborough Ambulance station, days in EMAS and WMAS control, study days with TAAS, and HEMS shifts with Helimed 54 and 53.

My first day was spent at Nottingham heliport, meeting the crew, getting involved in simulations and going through some questions I'd been set. I spent the entire day trying to stay calm despite a combination of huge excitement to be there, and horrendous nerves as my finals results were

coming out the same day. Finally, towards the end of the day, the CCP who had taken me under their wing that day convinced me to open my results, and I found out I had passed. I couldn't think of a better way to find out I had passed my finals other than surrounded by buzzing helicopters!

The next day was spent at West Midlands Ambulance Service HQ in Dudley. Here, I spent the morning on the trauma desk, watching how jobs were dealt with and dispatched. I got to see jobs as they originated and watched as the paramedics in control decided how to approach them. In the afternoon I sat with the HEMS desk (adorned with miniature helicopters), watching them decide what qualified as a HEMS job, and what could be dealt with without dispatching the helicopters, which I later learned burned 5L of fuel per minute of flying. A notable job when I was on the HEMS desk was a patient who had become unresponsive on the roof of a building. The paramedics in control had got a street view of the address and were working out how responders on scene could access the patient. It was decided it was an unsuitable job for HEMS, but HART (the Hazardous Area Response Team) would attend. After this I sat on the Incident command desk (ICD). Here, they talked me through the different criteria of a major incident, and how WMAS would respond. They told me about incidents in the past and how WMAS had been affected by high profile incidents like the Manchester bombing in 2016. I learned a great deal from the paramedics at WMAS, including knowledge of CCP training pathways, what paramedics want from pre-hospital doctors and the different guidelines used by control. But most importantly, I learned never to forget to bring chocolate on shifts!

Next, I travelled to Coventry airport for the FPHC faculty meeting. The actual meeting was taking place in Birmingham, but Dr Leech and I attended virtually. It was a privilege to be involved and observe the meeting and being at Helimed 53's base gave me the opportunity to also get to know the crew at Coventry. It was also today I got to fly for the first time, albeit a jump a couple of metres off the helipad and back as part of a doctor training exercise, but I was still thrilled.

Next came my first HEMS shift with Helimed 54. It was a night shift, and the aircraft was going to stay online for about 3 hours into the shift, then the critical care car would take over for the night. About half an hour into the shift the red phone rang, and everyone jumped into action. By the end of the elective, I had heard that siren go off many times and every single time it made me jump. The job was a stabbing 12 minutes away by air. I can't describe the feeling when I got in the air for the first time. I expected to be spooked by the height or travel sick, but I couldn't take my eyes off the window. It felt just like being in a car just 1000 feet high, it was amazing. 8 minutes into the flight the mission was stood down, but I didn't mind, I'd had my first flight. The next job was just before midnight, a head injury half an hour away by road. It was the first time I had been in a vehicle on blue lights. Even though stand downs were relatively common throughout the elective I was still feeling overwhelmed by the flying and the fast cars, so I didn't mind at all.

My next shift was a day shift with Helimed 54. The red phone rang about 9am and we set off. This was the first job I would land at. We circled overhead and I observed how the whole crew is involved in navigating as well as the mission itself. Everyone was on the lookout for the scene of the accident, and then suddenly there it was, a tiny, flipped toy car and some toy emergency vehicles scattered along the road. We landed in a small park close by, bewildering some dog walkers, and trekked towards the scene. The patient had a serious injury to their arm and was in a lot of pain. The CCP took control of the scene, and it was decided the patient was to be taken by road to the nearest major trauma centre. I was able to travel with the doctor in the ambulance and watch as they sorted pain relief and mild sedation for the patient.

My next 2 shifts were night HEMS shifts. The red phone went before last light and the crew were tasked to a stabbing 20 minutes away. Again, not long into the flight we were stood down, but immediately tasked to a hanging, out of TAAS's usual patch. On the way, I was sure we would get stood down again as it was so far away. However, we did get there, and again I had the birds eye view of the scene from the aircraft before landing. It was a surreal experience. I had seen medical arrests before, but never a traumatic one and suddenly I was on scene, watching everyone working hard to restore life to this patient. I was asked to ventilate the patient after the HEMS doctor and CCP intubated them and then we travelled by road on blue lights to hospital. The long flight back to Nottingham as the sunset was beautiful, in contrast to the major job we had just attended.

One of the key differences between medical school placements and my elective was the benefit of seeing the scene first hand, a factor unique to pre-hospital. When patients arrive in the emergency department, they have normally been stabilised and are for the most part all in the same position, supine. Pre-hospital, patients can be in any way, in any place, and that gives crews so much context of their injuries, it is something so different from hospital medicine.

I quickly got used to the up down nature of HEMS. My shifts were quieter than normal (the curse of the observer) but when the jobs did come in they took not only physical energy but a lot of mental energy as well. Even the shifts were there were few jobs were exciting.

The following week I had a week of shifts with East midlands ambulance service out of Loughborough Ambulance station. I had a day and a night shift with a DCA (dual crewed ambulance) and 2 shifts with a specialist paramedic. On the first DCA shift I instantly saw the difference between HEMS and Ambulance shifts. Approximately 0.3 seconds after signing on, the crew received the first of their day of back-to-back jobs.

The rest of the day consisted of an array of jobs, including severe back pain requiring Entonox and transfer to hospital, chest pain, a patient who had been expelled from A&E for being abusive but still needed to be seen, and an attempted suicide. That day reminded me how much abuse NHS staff get, especially the ambulance service. It must take a real toll on morale. Paramedics can really have their faith in the job tested and I had so much admiration for those who carry on in their job, remaining so

happy and friendly to patients when they could have just come off an emotionally gruelling or abusive job.

The next 2 days were spent with a specialist paramedic. The role of the SP is usually to pick jobs off the stack of 999 calls and try and discharge patients who don't need hospital and find alternative routes to hospital for those who are not urgent but still need to be seen, to free up ambulances for other jobs. Inevitably, this doesn't always go to plan. I really enjoyed these jobs, I found that I learned a lot and got to see the stack from a different perspective. The first job we chose for the day was a head injury, sounded simple, just needed a few stitches and could be discharged. However, on arrival at the scene it quickly became apparent that this was a far more complex case. The patient was extremely cold and confused and the SP suspected the fall was secondary to a much more sinister cause like neutropenic sepsis, and the small laceration on their head became the least of our worries. The SP quickly called for red back up by a DCA, meaning that they couldn't be re-directed on route and arranged transfer to hospital.

The next day again ranged from very well patients to very unwell patients, my finals knowledge (which I had been neglecting since March) was tested when we arrived at the scene of a DKA and then a potential meningitis. The last day with Loughborough ambulance station was a Friday night shift. I arrived at 6pm and as usual as soon as we signed on a job was allocated. The first job we had was a palliative care job. The patient was known end of life but had deteriorated quickly and the family, unable to contact the palliative care team had understandably called an ambulance. When we arrived, it was quickly concluded that there was nothing we could really do for the patient. The crew comforted the family and called the palliative care team and they arrived soon after. They thought the patient probably had a few hours left. It was a very sad job to see, but also comforting in that the patient had all their family around them and was made comfortable. It was also an insight into how out-of hospital services roles interact and overlap.

The last case that evening was a patient who had swallowed a battery. The job was a few hours old when it was allocated to us, demonstrating the stretched Friday night service, and it was about midnight when it was allocated. We arrived and the patient was rightfully asleep, and not entirely happy with being woken up. The crew explained why they had been called and the patient agreed to come to hospital. On the way to A&E, the paramedic explained to me that this was likely to be the last job of the night, as A&E generally had wait times of 4-5 hours outside in ambulances on a Friday night. We arrived at hospital and the paramedic had been completely right, there were multiple ambulances already waiting, some had been there for hours already. Details were taken by staff in the hospital and then the wait commenced, it was now about 1:15 am. Shortly after arrival, the patient started to get agitated. This escalated and I was told to sit in the front in case the patient became aggressive. I could understand the patient's frustration, unable to be seen for hours and likely not go home until much later the next day. Eventually the paramedics were able to calm the patient down enough for them to get back to sleep until they could be seen in the morning.

Another exciting day this week was getting to spend time in East Midlands Ambulance Service EOC with Dr Leon Roberts, clinical director for EMAS. On this day, I observed the inner workings of EOC, got the opportunity to sit on CCSD – clinical communication support desk with a senior clinician, sit with the HEMS dispatcher, spend some time with call takers and sit on the ICD for EMAS. On the CCSD, I was able to observe 999 calls coming in, how they were allocated and then, if need be, listen to input from a clinician in control who could speak directly with the crews. It was amazing to see details of cases from all over the East Midlands come in, see first-hand how jobs were dealt in control and how control and crews worked together. For major cases the clinician on the desk would contact the crew and occasionally speak with patients or bystanders. I also found sitting with a call

taker very interesting. I was given the opportunity to listen to a 999 call being taken, then follow it through to how it was handled by the crews and then handed over to hospital. This was such a unique opportunity, seeing the story unfold and I really enjoyed the day.

My next day was a day shift, back on the aircraft with Helimed 54. We started off with some teaching, some of the doctors had an exam coming up so I was employed as mock student for teaching practice. I was taught how to put on different pelvic binders and how to get intraosseous access. However, these OSCE mocks were interrupted by calls. The first time we were stood down, but the second time we were given a job it was a pedestrian vs car traumatic arrest. We arrived just as a DCA was also pulling up. I could immediately see the job was a big one, in front of us we could see the patient and bystanders already doing CPR. As we approached, I also got a glimpse of the car and firstly couldn't believe the damage to the vehicle and secondly how far the patient was from the car now. I watched as the critical care crew performed bilateral thoracostomies and then proceed to get access while working around the DCA crew attaching the defibrillator. I was asked to ventilate the patient once airway access was established. While more emergency services appeared, including a voluntary doctor and many police, the crews worked on the patient for 20 minutes, before concluding they were not going to survive. It was when everyone stood back from the patient that I noticed a running arm band, similar to one that I have, and a wedding ring on their finger. I realised that it was likely they had just been out jogging and someone was waiting for them to come home or maybe just starting to wonder where they were. All of the ambulance crews gathered away from the scene to debrief using the STOP-5 method, led by one of the CCPs, while the police started to analyse the scene. After this the critical care team spoke to the bystanders who had started CPR to thank them. I really appreciated the debrief afterwards. It covered what was done, if anything else could have been done and what improvements people would have made. It gave everyone a chance to get things off their chest which I think is so important following a big job.

Soon after we got back, we received another call. A patient trapped under a tractor. The caller wasn't sure if the patient was still alive but until there was certainty, it qualified as a HEMS job. The whole flight over I was convinced we would get stood down, but we didn't and soon landed in a field in the middle of the countryside. The first surprising thing for me was that I couldn't see the tractor. Then under the trees at the edge of the field I saw a little red tractor, a bit smaller than a car, and on the back was a lawnmower. The next thing that surprised me was that I couldn't see the patient at all, until we were right next to the scene. And they were really trapped, pinned beneath the back wheel and with one leg stuck under the mower. The patient was talking and breathing but none of us could see their face. As the crews got to work on establishing access, I was tasked with retrieving the trauma kit from the specialist paramedic's car. As I crested the little hill down which this tractor had rolled onto the patient, I was met with the view which can only be described as a sea of firefighters crossing the field towards the scene. Perhaps I'm exaggerating, but this is the image my mind casts in hindsight. The fire brigade arrived on scene and spent a few minutes deciding how best to extricate the patient. The critical care team then decided we didn't have time for this, and the patient just needed to get out from under the tractor right now. Abandoning pillows and other mechanical lifts, several responders gathered around the vehicle and lifted it manually. The patient's GCS immediately dropped, and I felt a wave of panic as I thought I was going to see this patient, whom I'd just heard talking, die in front of me. But a few stressful minutes later they recovered and became more stable. Now I could see the patient's shoes, sturdy workplace boots, slashed to bits beneath the lawnmower. The patient had an open fracture of their ankle, but if it wasn't for the boots, I would guess they would have sustained a traumatic amputation of that foot. If I learned anything from that job, it's to wear the right PPE. The patient was to be conveyed by road, so I hopped in the aircraft to follow the ambulance to the MTC, as there were far too many people in the

ambulance. It was my last day shift, and it was late afternoon so I was aware that this could be my last flight on the elective and my heart was sinking a bit. We arrived back at base, and I watched the clock as it crawled towards 6.

Nottingham from above

The final week consisted of a major trauma study day and a TAAS consensus day in Derbyshire. I got to meet some of the trustees for the charity and get involved in breakout sessions discussing improvements to the charity.

My final shift with TAAS was a night shift with Dr Leech at helimed 53's base in Coventry. It was a quiet night, so we completed data collection for a survey I was involved with. I set up camp in the spookiest room in the base, with multiple resus training mannequins draped over tables around the room, but managed to get to sleep in the end. And that was it, 7 am arrived and my last shift was done. It had been the best placement I could have hoped for, and I was so sad it was over, but also felt so lucky to have been involved.

My time with TAAS has definitely solidified my dream of practicing PHEM and I will carry on doing my best to pursue that. My advice to future students would be to grab every opportunity you can, do an elective you enjoy and get as involved as possible.

I would like to thank FPHC for providing the opportunity, and everyone on the elective who went out of their way to include me as part of the crew and teach me, even on busy and intense jobs, for their patience as I attempted to navigate through the kit bags and for keeping me smiling throughout.


G-WNAS


G-RSCU
Air Ambulance