Medical Elective Report

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Introduction

Securing the Faculty of Pre-Hospital Emergency Medicine Facilitated Elective was both a privilege and a highlight of my final year at medical school. It gave me the opportunity to immerse myself in pre-hospital and rural emergency medicine and to observe how clinicians adapt to long travel distances, limited resources, and varied hospital provision. It has firmly consolidated my desire to pursue a career in Emergency Medicine.

My goals were to strengthen clinical skills, gain confidence in acute decision-making under time pressure, and reflect on the ethical and human aspects of emergency care. I also sought to understand better the dynamics of multidisciplinary teamwork between paramedics, advanced practitioners, and hospital services. With my background in the Community First Responder scheme and wilderness medicine, being placed in Wales felt like a natural extension of my interests, and I was very excited to get stuck in.

Placement Setting

I was primarily based at Carmarthen, Llanelli, and Ammanford ambulance stations, covering a largely rural catchment with unique logistical challenges compared to urban services. I shadowed a wide range of vehicles—including CHARU fast response cars, emergency ambulances, patient transport, and Advanced Paramedic Practitioners (APPs)—and came to appreciate how resources are deployed according to patient acuity and need.

A day spent shadowing in the ambulance control centre gave me first-hand insight into how emergency calls are received, triaged, and allocated to appropriate resources. I observed how the team liaised with other services such as the Air Ambulance, Coastguard, Police, and Fire and Rescue to coordinate responses. Having only experienced this previously from an ‘on the road’ perspective, it was invaluable to gain a deeper appreciation of the control team’s vital role behind the scenes in supporting and enabling frontline clinical care.

A highlight was visiting the Llanelli Welsh Air Ambulance base, where I observed first-hand the rapid mobilisation and teamwork required to deliver critical care by air. Seeing the team prepare and launch under time pressure gave me valuable insight into the efficiency and coordination required in this high-stakes setting.

Clinical Scenarios, Learning Points, and Reflections

Trauma and Falls

Case 1: Male, late 40s, gunshot wound (suicide, incompatible with life).

- *Learning Point:* Pre-hospital medicine is as much about supporting families as delivering clinical interventions.
- *Reflection:* The team's compassion and professionalism in devastating circumstances showed me the importance of dignity in care. Remote access with police support reinforced the adaptability required in rural emergency work.

Case 2: Female, 80s, unwitnessed fall with C2–C4 fracture.

- *Learning Point:* Falls require careful handling, as initial causes may be uncertain (e.g., trauma vs syncope).
- *Reflection:* The case highlighted the geographical impact of care delivery in Wales. APP teaching on falls and basal ganglia disease deepened my appreciation of the subtle neurological causes underlying such presentations.

Hypothermia, Airway, and Substance Misuse

Case 3: Male, 91, overnight fall, hypothermic, peri-arrest.

- *Learning Point:* Frail patients often present with overlapping issues that require pragmatic, prioritised management.
- *Reflection:* Revisiting him later in hospital and seeing him improved underscored both resilience and the value of perseverance in care. To see him so much improved highlighted how crucial timely intervention can vastly improve patient outcomes.

Case 4: Simulation training – airway (Vortex, adjuncts, suction) and intraosseous access.

• Learning Point: Frameworks such as the Vortex model help prevent fixation error and support safe, structured escalation in airway management.

• Reflection: Simulation training allowed me to practise critical procedures in a safe environment, which significantly improved my confidence and preparedness for real emergencies. Having the opportunity to learn and refine intubation skills was particularly valuable. Each scenario, designed for paramedics and PHEMS practitioners, provided real-time challenges that required me to step up and down through airway adjuncts, applying clinical reasoning at every stage while also considering practical factors such as patient positioning, environment, and injury pattern.

Case 5: Female, 42, heroin overdose with minor present.

- *Learning Point:* Substance misuse emergencies bring safeguarding considerations into sharp focus.
- *Reflection:* This case demonstrated that emergency medicine is also about ethical responsibility, particularly when children are involved. Balancing fluctuating capacity, dignity, and duty of care was a powerful learning moment.

Cardiac Arrest

Case 6: Female, 81, rural out-of-hospital cardiac arrest.

- *Learning Point:* In rural contexts, prolonged ALS is vital, and outcomes are strongly influenced by bystander CPR.
- *Reflection:* Sustained resuscitation cycles showed the physical and cognitive demands of such work. Linking this to CPR audit data highlighted how public training directly impacts survival.

Complex and Multi-Agency Scenarios

Case 7: Male, 18, suspected suicide attempt with multi-agency response.

- *Learning Point:* Major incidents demand flexibility and the use of structured frameworks such as JESSOP and IIMARCH.
- *Reflection:* Observing the Duty Commander coordinate ambulance, police, and fire services highlighted the importance of clear communication and leadership under pressure.

Case 8: Female, 22, adrenal crisis with complex comorbidities and family dynamics.

- *Learning Point:* Medical complexity is often compounded by social and cultural challenges, shaping care decisions.
- *Reflection:* This case emphasised that respecting autonomy must be balanced with safety, especially when language and family barriers complicate care.

Case 9: Male, 70s, sepsis from perforated otitis media.

- *Learning Point:* Even apparently minor conditions can deteriorate rapidly, particularly where rural access to secondary care is limited.
- *Reflection:* Assisting with cannulation and handover reinforced the value of clear, concise communication in emergencies.

Case 10: Male, 61, stroke with left-sided weakness.

- *Learning Point:* Structured pre-alerts (ATMIST) enable rapid activation of time-critical pathways.
- *Reflection:* Delivering my first pre-alert was nerve-wracking but empowering. It was a personal milestone, showing me how students can make meaningful contributions, and reinforcing the importance of coonscise and structured milestones.

Lessons and Reflections

1. Frameworks build safety under pressure. Tools such as Vortex, ATMIST, JESSOP, and IIMARCH reduced cognitive load and enhanced communication.
2. Decision-making with uncertainty is the norm. Many patients presented with incomplete histories or impaired capacity, yet decisions could not be delayed.

3. Ethics and safeguarding are inseparable from care. The heroin overdose case, in particular, highlighted the importance of safeguarding minors while respecting autonomy.
4. Teamwork underpins learning. Being able to contribute through cannulation, simulation, or pre-alerts gave me confidence and helped me feel integrated into the team.
5. Personal growth comes through challenge. Exposure to both technical skills and emotive situations strengthened my resilience and reminded me of the importance of combining clinical competence with compassion.

Conclusion

This elective has been a formative experience in rural and pre-hospital emergency medicine. It provided exposure to diverse clinical scenarios, reinforced the value of structured approaches, and strengthened my clinical skills and confidence. Most importantly, it showed me that emergency medicine is as much about humanity and communication as it is about technical intervention.

Acknowledgements

I am deeply grateful to the Welsh Ambulance Service and all the teams who welcomed me, taught me, and encouraged me to contribute. You're all great fun! This, alongside your kindness and generosity made this elective both enjoyable and has consolidated my desire to work in emergency medicine in the future! Thank you all again!

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