Sydney Hems Elective

Trauma is the leading cause of death in those under 45 in Australia[1] and across the world. Over 1000 people are admitted to Australian hospitals injured every 24 hours and approximately 10,000 people die from traumatic injuries each year. This however does not account for all of the work of the Greater Sydney Area Helicopter Emergency Medical Service. They are a multifaceted organisation also providing a retrieval service as well as assisting in rescue from remote or difficult to access areas.

I was lucky enough to spend two weeks with Sydney HEMS, with the help of the Association of Anaesthetists of Great Britain and Ireland. The team offers a primary response trauma service which acts much in the way I am used to from taking part in shifts with London's Air Ambulance. The team are tasked by a control centre to jobs where the patient may require an anaesthetic or is life threateningly injured. Jobs that are further afield or in an environment not accessible by road are attended by one of the two helicopters that are ready 24/7. This huge variety of jobs means the doctors and paramedics have to learn and remain competent in a variety of complex skills such as winching as well as all of the medical tasks.

Aside from these primary jobs the teams retrieve patients from hospitals that are unable to meet their needs. Before coming to Sydney I had thought that these retrievals would be from distant hospitals that didn't physically have an intensive care or the specific procedural facilities the patient needed. However some retrievals carried out by the teams are from small hospitals in Sydney. On some occasions the transfers are for specific therapies but many are carried out as the hospital requires the input of the critical care paramedics and doctors and the patient needs ongoing intensive care. As the service has to cater for a huge area, covering most of New South Wales, they operate 4 different types of vehicle so they can reach all of

their patients. Patients in rural settings and distant towns are most often retrieved to Sydney by a flight nurse and pilot team traveling in a KingAir 350, a nimble aircraft capable of carrying 2 patients in monitored beds. This service provides a vital lifeline for patients living in remote communities who require specialist interventions.

There are many challenges that long distance transfer presents. When flying the cabin is pressurised but often not to sea level pressure, this means that patients may desaturate and have increased oxygen requirements. Also a very noisy environment can hinder communication and assessment, constant vibration can be uncomfortable and fatiguing for the patient particularly if they have fractures or wounds. Flying is also very nauseating for some, all of these possible complications must be monitored and addressed throughout the flight.

During my two weeks with the road and fixed wing teams I was able to assist with many aspects of the prehospital care of the patient. One skill in particular that I had previously practiced in simulation sessions but had never been a part of was the extrication of trapped patients. I was part of several major extrication efforts whilst with the road team. The most significant case involved a 70 year old pedestrian who was hit by a truck. The unfortunate gentleman had crossed the road in front of the stationary vehicle at a crossroads when it had moved forward, he was trapped under the front left wheel by his right leg which had been significantly degloved, was fractured at multiple sites and was actively haemorrhaging from the femoral artery. Removing the patient from this awful situation involved placing a tourniquet and giving analgesia and blood resuscitation under the truck, then, led by the fire brigade, the truck was lifted using pneumatic lifts and stabilising blocks. Once removed from this horrible predicament he was anaesthetised, intubated and given further blood products. On route to the major trauma centre we were met by the highway patrol police who had collected a massive transfusion pack and pursued us. These treatments together took the gentleman from the brink of death with a systolic blood pressure of 60 whilst trapped back up to 120 with no active bleeding on arrival to hospital. It was a remarkable case to be part of, seeing someone's life so clearly being saved, and this was made even better on hearing that after an above knee amputation the patient was recovering well. My extrication training was furthered by attending a training day 90km south of Sydney in Wollongong where I took part in several scenarios involving stabilising and extricating a patient from a crevasse and intubating and moving a patient from craggy rocks at the edge of the sea.

This brief report barely touches the surface of what I saw and learnt in Sydney. My experience with Sydney HEMS has furthered my desire to work in prehospital medicine and I feel extremely lucky that I was able to be a small part of the care of the patients we saw.

1 – Farrow et al., 2012 - Australian Safety and Quality Goals for Health Care – Consultation Paper, Australian Trauma Quality Improvement Program (AusTQIP), Nathan Farrow, Russell Green, Anne-Marie Baker, Mark Friend, Peter Clark and Annette Hicks. National Critical Care And Trauma Response Centre, Monash University