ELECTIVE (SSC5b) REPORT (1200 words)

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

Objective 1: To understand the pattern and aetiology of traumatic injuries, their presentations to the Emergency Department in a main trauma centre in South Africa and how this compares to my experience of trauma in the UK.

South Africa experiences a high burden of injury, with violence and traffic injuries being the commonest causes of injury. Trauma is one of the leading causes of death in South Africa. Groote Schuur Hospital (GSH) is a tertiary hospital that sees approximately 12000 patients in the trauma unit each year, of which 71.3% were males, and the commonest mechanisms of injury were assault with sharp (20.9%) or blunt objects (17%), traffic collisions (18.8%), and falls (18.4%)(1). Similarly, in London, the majority of trauma patients are male (76%). However, the overwhelming majority (71.8%) of mechanisms were blunt trauma, followed by penetrating trauma (25.8%)(2). Furthermore, I noted that in GSH, alcohol was implicated in 16.8% of road traffic collisions, whereas in the UK, alcohol was implicated in only 2% of road traffic collisions(3), likely due to strict enforcement of laws about maximum blood alcohol concentration in the UK.

The high incidence of traumatic injury in South Africa was very obvious at GSH, where the unit was regularly overburdened with patients who have suffered traumatic injuries. The commonest mechanisms of injury that I encountered during my elective were gunshot wounds, stabbings, assault, and road traffic collisions. In addition to the variety of mechanisms of injury, I found that there was a huge variety in severity within a single mechanism. For example, I had encountered a very stable patient with a gunshot wound to the chest wall that was very superficial and did not penetrate past the ribs. This patient remained fully conscious throughout their time in hospital and the bullet was removed under local anaesthetic in the unit. In contrast, another patient with gunshots to the chest and abdomen arrived with reduced GCS and required CPR and an emergency laparotomy to repair the injuries followed by admission to ICU.

Due to the high incidence of penetrating injuries, I learned a lot about vascular injuries, which I had not previously encountered as a medical student. I learned about hard and soft vascular signs and how to assess a patient with a suspected vascular injury with ABI.

Objective 2: To understand how a trauma department in South Africa is structured in comparison to the UK with regards to organisation and facilities and to understand differences in pre-hospital emergency care provision between the UK and South Africa.

The trauma department at GSH is run by senior consultant trauma surgeons, junior consultants, senior 'cutting' registrars, surgical registrars, and interns. The interns usually run the green area, diagnosing and managing the "walking wounded".

The green area, analogous to 'minors' in the UK is where the 'walking wounded' are seen. The yellow area is for more serious injuries such as road traffic collisions or community assault. The red area, or 'resuscitation' is for the most severe injuries such as gunshots to the chest or abdomen, or patients with reduced GCS who require intubation and ventilation.

As there is no dedicated emergency trauma team in the UK, minor traumatic injuries are covered by the accident and emergency department, and major trauma is covered by the relevant on-call team. I attended several trauma calls at The Royal London Hospital during my general surgery and orthopaedics rotations. The structure of the trauma call is such that a multidisciplinary team is bleeped when a major trauma patient is to be brought to hospital including a team leader, general surgeon, orthopaedic surgeon, anaesthetist, and emergency department doctor. A formal primary survey is carried out in resuscitation, usually by the on-call general surgeon, with all aspects of the survey recorded by a named scribe. The secondary survey is carried out by the on-call orthopaedic surgeon, whereas at GSH, the secondary survey is performed by the trauma doctors.

I spoke to several paramedic students at the trauma unit, who gave me insight into how advanced the scope of the paramedic service is in South Africa. Pre-hospital doctors are not common in South Africa, therefore paramedics are highly trained and well-equipped to manage patients in the pre-hospital setting. I noticed that many patients were transported to the trauma unit already intubated and with chest drains in situ. In the UK, prehospital intubation by paramedics is controversial(4) and in my personal limited experience, I have only seen done by doctors in the pre-hospital setting.

Objective 3: Global/Public Health related objective

To understand the extent of preventative measures employed for the spread of blood-borne viruses in the Trauma department and how this compares to the UK.

I was apprehensive about the possibility of sustaining a needle stick injury during my time in Cape Town due to the high prevalence of HIV (19%) and the high patient volume passing through the unit. I noticed that doctors were very cautious with handling needles at GSH, and there were many preventative measures in place such as safety cannulas and safety needles with a needle shield to encapsulate the needle once activated. I noticed that there was a very non-judgmental culture towards needlestick injuries and many doctors and students had mentioned that they had been on courses of post-exposure prophylaxis. Antiretrovirals were easily accessible and actually stored in the trauma unit to ensure prompt administration in the case of an exposure. I learnt to be mindful about sharps disposal, especially during sterile procedures, where one cannot immediately dispose of sharps so they must be placed together in a visible location and disposed of immediately after completion of the procedure.

Objective 4: Personal/professional development objective *

To improve my practical skills, A-E assessment, communication skills and management of acute presentations to the Trauma unit for preparation as a Foundation year 1 doctor in the UK.

My elective in GSH provided ample opportunities to practice my clinical skills. Doctors on the unit were very keen to supervise and teach me skills, and with continuous practice, I became proficient in performing these skills unsupervised. The environment was very conducive to developing practical skills as there was a high volume of patients attending the unit with significant injuries that required intervention.

From a practical skills point of view, I sutured multiple lacerations at various anatomical locations including the ear, eyelid, face, scalp, and extremities. I learnt several techniques to improve my suturing skills such as how to place a corner stitch, and to ensure my needle passes through the incision in two throws to avoid damaging any structures. Furthermore, I received instruction on how to insert chest drains and performed a few supervised chest drain insertions under local anaesthetic in the minor operating theatre. There was also a great opportunity to practice venupuncture, cannulation, and arterial blood gases from the femoral artery. Additionally, I was taught how to perform a FAST scan, and had multiple opportunities to practice this skill. Overall, this experience has given me more confidence in approaching practical procedures and I believe this will be valuable experience for starting my foundation programme in August. In terms of clinical skills, I had ample opportunities to perform the primary survey to assess patients both in the yellow and red areas under supervision. I was also able to appreciate clinical signs which I had not experienced previously such as surgical emphysema, peritonitic abdomens, and pulseless limbs.

I believe that efficiency is an often-neglected skill that is essential for working as a doctor. The experience of seeing patients in the green area taught me the importance of making a jobs list to ensure that I kept account of all the jobs to be done for each patient and completed them satisfactorily. Furthermore, recording pending and completed jobs for each patient on the front of their folder was a very efficient way of keeping track my jobs list. These techniques were very helpful when having to assess and manage a large volume of patients as I will have to do when on-call during my foundation training and will stay with me throughout the rest of my career.

Word count: 1200

References

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2. Gurkamal Virdi, David Miller MF and RF. Major Trauma Annual Report 2015. 2017.

3. Wloch E. Reported road casualties in Great Britain: Estimates for accidents involving illegal alcohol levels (2015). 2017.

4. Group JAW. A Critical Reassessment of Ambulance Service Airway Management in Pre-Hospital Care. 2008.