Elective (SSC5b) 2017 Report

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Learning Objectives

Objective 1

To understand the pattern and burden of Traumatic injuries and presentations to the Emergency Department in a main trauma centre in South Africa and how this compares to the UK and other more economically developed countries.

Trauma, relating to penetrating or blunt mechanical injury, statistics in South Africa are staggering and increasing. With over 60,000 trauma related deaths a year, many have labelled Trauma as one of South Africas main epidemics. In 2000, it was estimated that 12% of deaths in S.Africa were injury related. Compared with global rates, the injury related mortality rate is 6x higher and road traffic injury rates are double. There are over 1200 deaths a month on South Africa's roads with PVAs (pedestrian vehicle accidents) accounting for over half of road related fatalities in comparison to MVAs (motor vehicle accidents). MVAs and PVAs account for 25% of trauma related deaths. Homicide figures are 8x the global rates and account for around a third of trauma related deaths - there were 18,673 murders in 12 months between March 2015 and 2016. The Western Cape has the second highest murder rate in S. Africa at 52 per 100,000 of the population. In the UK, the homicide rate is 10 per million per annum (600 per year), which equates to around 35x below the rates in South Africa.

It is difficult to appreciate how staggering raw statistics like these above are, however after a single shift in the C14 Trauma unit at Groote Schuur Hospital (GSH), it became apparent. In 4 weeks of Emergency Medicine and 6 weeks in Anaesthetics in Medical School in London I had not seen a single stab or gunshot wound. On my first shift I saw 8 patients with penetrating gun shots and over 15 with stabbing injuries.

For every trauma related death there are many trauma related injuries. It is estimated 40% of emergency admissions to hospitals in S. Africa are trauma related with over 3.5 million patients seeking care for trauma related injuries. Trauma itself is a product of many personal and societal factors including unemployment, poverty, drugs, alcohol, policing standards and the widespread practice of community assault. Community assault was a concept I had not previously encountered. What is essentially vigilantism is widespread in S.Africa and many of the patients I saw were victims of this. Whilst gunshots and stabbings are rare in the UK, community assaults are non existent.

Objective 2

To understand how a Trauma department in South Africa functions in comparison to the UK in terms of streamlining, organisation and facilities and to understand differences in pre-hospital emergency care provision between the UK and South Africa.

Groote Schuur Hospital (GSH) is one of two tertiary referral centres for Trauma in Cape Town therefore in addition to receiving trauma patients primarily it also accepts many referrals from other hospitals and day clinics which lack access to CT scanners. One primary difference between GSH and hospitals in the UK is the splitting of traumatic and medical emergencies into two separate departments. The newer district hospitals such as Khayelitsha and Mitchells Plain lack such streamlining and have tended towards Emergency departments similar to the UK. Within the trauma unit at GSH patients are organised into 3 regions - Green, Yellow and Red (Resuscitation) which were staffed by 2 Medical Officers / Registrars, an intern (occasionally), one or two elective students with 5th year UCT students in the evenings and weekends sometimes. These staffing levels differs significantly from, the UK and becomes polarised in resuscitation situations. In GSH a red patient would be received by a single registrar with help from sisters and students however in the UK for critically ill resuscitation patients the ambulance or HEMS (helicopter emergency medical services) would pre alert the department of an inbound patient. The department would then prepare for their arrival with the necessary equipment and staff which would include an Anaesthetic trainee, emergency medicine physicians, nurses and surgical specialties if necessary. In some very severe HEMS cases, patients might be transferred direct to CT before arrival in the resuscitation department. Furthermore, the quality of CPR I observed in GSH appeared poor in comparison to the UK. There is no 2222 related call system which in the UK provides resuscitation officers, staff members to document, keep time, anaesthetic trainees to manage the airway and sisters. Unfortunately at GSH, CPR situations really highlighted the staffing shortages. Added to this, trauma patients have reversible causes of cardiac arrest, are young and lacking medical problems and could often have good resuscitation outcomes.

The facilities at GSH were dated and the department was often under stocked. I felt much time each shift was searching for necessary equipment. Much like in the UK there were bureaucratic issues which often slowed patient care - for example waiting for a folder and sticker for patients to allow them to have blood tests and further imaging investigations. On the other hand, the quality of the doctors in the department was incredible

and it was a privilege to observe and learn from them. They cover many roles, work with time pressures and patient volumes which we don't see in the UK, demonstrating incredible levels of practical skill.

Pre-hospital care provision in S. Africa has a private and public component which differs from the UK and the quality of paramedics was variable. We often had paramedic students training in the department who spoke of the skill level they are hoping to achieve including emergency surgical airways which would not be performed by paramedics in the UK other than pre hospital anaesthetists as part of HEMS team.

Objective 3

To understand differences in the structure of the South African health care system and the NHS and to appreciate how this is influenced by poverty.

Statistics South Africa defines poverty in 3 categories; i) Food poverty line (people can't afford food that meets the basic calorie needs), ii) Lower bound poverty line and iii) Upper bound poverty line. 27 million people (52% of the population) live below the upper bound on less than R779 per person per month (£47). Of these 18.6 million (36%) live below the lower bound on less than R501 per person per month (£30). 10.7 million (20.5%) live below the food poverty line on less than R335 per person per month (£20) and are therefore going hungry. These are extreme levels of poverty in a country with a phenomenal rich poor divide that is evident only by driving 10 minutes around Cape Town. These extreme levels of poverty influence accessing healthcare and healthcare provisions and poverty itself has been widely associated with poor health outcomes.

The UK and South Africa both have governmental and private heath institutions however the government institutions are reportedly chronically understaffed and under resourced. In light of this, the wealthiest members of the South African population have private health insurance (medical aid) at great cost - around 18 million people (33% of the population) creating a two tiered health system divided along the socioeconomic line of poverty.

In 2013 the Total Health Expenditure in S. Africa was 8.9% of its GDP of which 48.4% was government funded to deliver services for around 70% of the population. The majority (51.6%) of the Total Health Expenditure was funded by 83 private medical aid schemes for the subset of population with medical aid. In the UK the spend was 9.1% of which 84% was public government funded. These statistics highlight the funding disparity between the public systems in the UK and SA. Further evidence of funding differences is highlighted by the fact that the UK has 2.8 practicing physicians per 1000 population compared with 0.7 physicians per 1000 population in S.Africa.

On the ground the structures of the public healthcare systems in SA and the UK are similar with primary healthcare facilities, district hospitals and specialised tertiary centres for advanced diagnostic procedures and treatments.

Objective 4

To integrate into a team of healthcare professionals and contribute efficiently in a department where resources may be lacking compared to the UK. To improve my clinical skills including practical skills, clerking patients, communication skills and management of acute presentations to the Trauma unit / Emergency department for preparation as a Foundation year 1 doctor in the UK.

I was excited at the prospect of an elective in Trauma at GSH as I knew my skill level would be tested and constantly improved. I was initially taken aback at the sheer volume and type of trauma, lack of sedation and analgesia in use and that patients waited for well over 8 hours to be seen in some cases without any complaints. I was also initially surprised at the paternalistic nature of medical practice in the department due to the conditions in which the staff had to work. Ultimately though, this elective resulted in my best placement during my 5 years of medical school. There were between 7 and 10 elective students in the department during my 6 weeks at GSH and we divided up the week into 14 shifts which we were expected to cover. Day shifts were 8am to 6pm and nights from 6pm to 8am. As the weeks went by and the shifts came and went I grew in confidence with regards to my practical skills including suturing, ICDs, airway management, taking bloods and cannulation, femoral stabs and ABGs as well as identifying critically ill patients. I was able to clerk patients in the green and yellow areas of the department, formulating investigation and management plans to present to the registrars for approval and confirmation. I was also encouraged to present patients at the post shift ward rounds. Overall this was a very rewarding, yet intense elective with incredible learning opportunities from some very skilled clinicians and if I had the chance to I would repeat it again.