

Objective: Gain confidence in the assessment of a critically unwell patient using the ABCDE approach whilst building on skills of airway management and resuscitation.

During my Time at Groote Schuur I was involved in a resuscitation attempt on a patient who was five days post laparotomy. She was an elderly lady who deteriorated following a suspected bleed. Over the course of 20-30 minutes she began to look increasingly pale, became progressively more confused and breathless and her observations deteriorated. This resuscitation was the first one where I have taken a more active role than fetching equipment and observing and is the first in hospital arrest I have ever witnessed. Although extremely sad that it did not have a positive result, the mortality of in hospital cardiac arrests is thought to be around 80% in the UK and America, (AHA 2013) I found the experience to be a very useful learning opportunity and it will have no doubt improved my technique at bagging and chest compressions which may help me carry out more effective resuscitation in the future. The other learning points I will take away from this is how recognise the deteriorating patient and therefore when and why it is important to call for help. Chest compressions are exhausting and even if you have a two minute rest while someone else takes over, after several rounds it is difficult to keep up the consistency of compressions to ensure the highest possible standard of CPR. Resuscitation requires several people to carry out the bagging, compressions, running ABG's, putting fluids up and trying to identify the reversible causes of arrest. As a Foundation year doctor it is possible that I will be the first person to see a patient like this and acting quickly may help the patient's chances of survival. Another valuable lesson to be taken from this scenario is that if a patient has deteriorated since the last time you have seen them and you think they had been previously improving you must take the time to stop and ask why? Early identification of a deteriorating patient could mean that you are able to intervene prior to the patient arresting. In this case the first sign that something untoward was happening was that the patient began requiring oxygen and was complaining of shortness of breath.

Objective: Prevalence and mechanisms of traumatic injury in Cape Town South Africa.

From my experience in the trauma department at Groote Schuur hospital the leading causes of traumatic injury appear to be Assaults and motor vehicle accidents. The assault victims frequently appear to be young black males presenting having been stabbed or shot multiple times following a dispute, many of them with pneumothoraces requiring chest drains, some with penetrating abdominal injuries requiring emergency laparotomy. The department gets busier at certain times with a higher number of trauma calls coinciding with the weekends (alcohol related) and public holidays (largely thought to be alcohol related). A bulletin from the World health organisation (WHO 2007) confirms this to be the case with 46% of injuries being homicides, most commonly in young males aged between 15 and 29. Road traffic accidents account for 26.7% of injuries but have the highest mortality of the common injuries seen along with being the leading cause of injury in women. This pattern of homicide rates being higher than motor vehicle accidents in young males is unique to South Africa as a country outside of war, making it statistically one of the most violent places on earth.

Males ⁿ = 45 237		Females ⁿ = 14 698		Persons ⁿ = 59 935		
Rank	Cause of injury death	%	Cause of injury death	%	Cause of injury death	%
1	Homicide/interpersonal violence*	50.9	Road traffic injuries	32.6	Homicide/interpersonal violence*	46.0
2	Road traffic injuries	24.8	Homicide/interpersonal violence*	30.8	Road traffic injuries	26.7
3	Suicide/self-inflicted violence	9.3	Fire*	12.5	Suicide/self-inflicted violence	9.1
4	Fire*	5.1	Suicide/self-inflicted violence	8.6	Fire*	6.9
5	Drowning	2.4	Surgical/medical misadventure	4.3	Drowning	2.3
6	Other transport injuries	1.7	Falls	2.6	Surgical/medical misadventure	2.0
7	Falls	1.4	Drowning	2.2	Falls	1.7
8	Other unintentional injuries	1.3	Other unintentional injuries	1.7	Other transport injuries	1.7
9	Surgical/medical misadventure	1.2	Poisoning	1.7	Other unintentional injuries	1.4
10	Poisoning	0.8	Other transport injuries	1.5	Poisoning	1.1
11	Mining injuries	0.5	Suffocation and foreign bodies	0.9	Suffocation and foreign bodies	0.4
12	Suffocation and foreign bodies	0.3	Natural and environmental factors	0.4	Mining injuries	0.4
13	Natural and environmental factors	0.3	Mining injuries	0.0	Natural and environmental factors	0.3

Table 1- Showing percentage of injury deaths by cause in South Africa 2000 - from WHO (2007)

Objective: Management of Traumatic Injury and the composition of the trauma team in Groote Schuur hospital, Cape town in comparison with a major trauma centre in London, England.

In London the trauma team usually consists of a Consultant in emergency medicine, a Trauma nurse specialist, A trauma or general surgeon, a foundation year 2 doctor and an orthopaedic surgeon. The patient is brought into the department by the paramedics or HEMS doctors and handed over. After handover the patient will be assessed using the A-E approach and then taken to the CT scanner if necessary within the hour. This process is audited and attenders are recorded to ensure senior members of staff always attend to a trauma patient. In Groote Schuur due to the high incidence of trauma there is a department dedicated to trauma care that is separated from the emergency department. This along with the staffing level and volume of patients affects the composition of the team. In Cape town the trauma team is led by the Consultant trauma surgeon who runs 2 ward rounds in 12 hours and will operate should it be required but does not attend all trauma calls. There is a 'cutting Reg' or registrar who will often do the bulk of the operations and will usually be placed in resus. Junior staff (FY1 and FY2) also attend. When a trauma call arrives the cutting Reg and a junior member of staff will usually be ready to receive the patient, they will receive a handover from the paramedics and try to resuscitate the patient, calling the consultant if complex surgery is required. The most striking contrast to the UK is that there is usually only one or two doctors in attendance compared to the four or five in the UK. The seniority of these doctors is also less than the UK. In London you can expect at least one consultant to attend a trauma call. As I witnessed in Cape town there was often only one junior doctor in attendance at many trauma calls due to the registrar being busy elsewhere in the department.

Objective: Reflect on how patient care differs in a low resource, high volume trauma system including how my participation in this will aid my future practice.

The first patient that I clerked in the trauma department in Cape town was a 30 year old male who had trauma to his hand after having it trapped in a large heavy metal door. Two of his fingers were almost amputated with a third having an obvious compound fracture. I asked the patient how long they had been waiting to see a doctor and he replied "five hours". On his arrival he was handed over by the paramedics, his hand was placed in a bowl of water and his observations were taken. Because his observations were stable he was triaged as a low priority and sat in the 'green zone' where patients must wait to be seen, often for a long time while patients in both the yellow and red (resus) are assessed. There are no waiting time targets at Groote Schuur and due to the high volume of patients and low staff levels patients must be triaged based on the severity of their injuries and how stable their observations are. This means that patients are often waiting in the Green zone for many hours, sometimes with stab wounds and other injuries that would be considered serious in the UK. To begin with I found it uncomfortable that people such as this first patient had to wait so long before being seen, however after some time I came to realise that due to the staffing levels it was the only way that the department could be run effectively to prioritise those patients in need of immediate life saving care.

The Royal London hospital has a CT scanner in its emergency department and more resus beds than there are at Groote Schuur even though the amount of trauma they receive is far less than that of Groote Schuur. At Groote Schuur the only imaging in the department was a Lodox scanner (Full body X-rays) and an X-ray machine (which you often had to wait up to an hour to get a radiographer for). The CT scanner is expensive to run and because of reduced resources is used far less frequently than in the UK. Head and abdominal injuries are quick to get a CT but other injuries are often refused or delayed (certainly not within one hour). The reduced access to a CT means that the Doctors at Groote Schuur had to be far more reliant on their examination and clinical acumen than their colleagues in the UK. I feel that by having spent time watching these doctors at work and having had to examine patients myself I have grown in confidence in my assessment of trauma patients. This can only help me in my future career as good clinical skills and examinations are important throughout all specialties in medicine.

References

AHA American heart association, (2013), *Heart disease and stroke statistics- 2013 update A report from the American heart association*. American heart association journal, Available at <http://circ.ahajournals.org> [online], last accessed 01/05/14.

WHO, (2007), *Bulletin of the World Health Organization, Past issues, Volume 85: 2007, Volume 85, Number 9, September 2007, 649-73*