ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF GLASGOW

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SECTION 1 | PERSONAL AND AWARD DETAILS			
Title	Mr	**PID**	152402
Surname	Ayub	**Forename(s)**	Sulayman Musa
Scholarship/award awarded	Medical Elective Scholarship	**Amount awarded**	£1000

SECTION 2 | PROJECT/VISIT DETAILS	
Name/Title	**'See one, do one, teach one': Balancing patient care and surgical training in an emergency trauma department**
Location	Trauma unit, Chris-Hani-Baragwanath Academic Hospital. Johannesburg, South Africa.
Aims and objectives	1. To demonstrate increased competency in procedural skills. 2. To reflect upon the teaching methods displayed in the trauma unit and balance it with patient care. 3. To provide ethical points of consideration for future medical students when conducting trauma electives abroad. 4. To gain an appreciation of South African history and the recent apartheid. 5. To develop an understanding of the societal issues surrounding trauma patients. 6. To explore the nature and beauty South Africa boasts in its landscapes and wildlife
Summary *Include methodology, results and conclusions if applicable*	**Abstract** Surgical teaching techniques vary across departments and doctors must always balance the progression of their trainees with the safety of their patients. The following report analyses the teaching concept, 'see one, do one, teach one', utilised in the trauma units of Johannesburg. There are conflicting views over the suitability of this teaching technique amongst academics and a concerted effort to modify the method. The following report aims to examine its overall benefit to educators and students, and whether adaptations are required for the betterment of patient care. **Introduction** The common adage: 'see one, do one, teach one' refers to learning skills through a three-tiered approach. It reflects a traditional teaching style whereby once a skill has been observed, the student/trainee is expected to perform the procedure followed by the ability to teach it. The model developed by Halsted[1] increases the responsibility of trainees, however this concept has become less acceptable due to concerns regarding patient safety.[2,3] Technology has supported this shift in medical education; students in England practice procedures using a variety of simulations before meeting patients. Current developments include high-fidelity human patient simulation which provide an opportunity to refine a skill before providing care to the patient.[4]

Despite the advances we are accustomed to, international hospitals do not always have these facilities on hand. This is due to a variety of reasons including lack of resources, the need to train staff quickly and students arriving with differing levels of competence. These apply to trauma departments in Johannesburg and result in staff relying on the aforementioned teaching style.[5] Students conduct their electives here to experience the vast amount of trauma and become an integrated member of the surgical team. This teaching method combined with the type of emergency presentations grants students a unique opportunity to get involved with a variety of procedures.[6,7] However, ethical issues surrounding this teaching style have been raised by the medical community advocating for patient wellbeing.[8]

Despite regulatory bodies in England and South Africa encouraging teaching and training of surgical staff, they also emphasise that medical professionals must be competent in any procedure undertaken, prioritise patient safety and maintain a character of candour in patient interactions.[9,10,11] With a variety of concerns, this technique should be scrutinised according to the location it is practised, the clinical educators that utilise it and the students that learn from it. Having a strong viewpoint on another country's teaching methods without exploring every factor would be deemed ignorant. Important ethical principles must also be considered and balanced fairly with the benefits this method offers surgical departments.[12]

Aims

My 7-week clerkship was spent between the emergency trauma unit and the plastic surgery department at Chris-Hani-Baragwanath Academic Hospital (CHBAH), Soweto, South Africa. Soweto is the largest township in the country situated due west of Johannesburg. As a remnant from apartheid, much of the population live on limited resources with inadequate public infrastructure.[13]

CHBAH is the third largest hospital in the world with 3200 beds and over 350 daily emergency cases.[14] The majority of time was spent in the emergency trauma unit where I had the opportunity to develop procedural skills such as intercostal drains and central lines. I also spent time clerking new patients, treating them if necessary or referring them on to other specialities. Due to the quantity of trauma cases, this department was separated from emergency medical presentations. My time in plastics included focused teaching sessions and assisting in theatre cases.

It is vital that students travelling for electives form a variety of personal objectives for the duration of the placement. This can range from medical/surgical related goals to country specific cultural goals.[15] A variety of aims were achieved, such as enhancing my surgical capability; adapting to different medical teams and understanding the societal issues facing these patients. However, my key interest was found in observing and reflecting upon the teaching technique utilised by the doctors in the trauma unit. This passion developed whilst forming my own lesson plans to teach fellow students during the past year. Following this experience, I appreciated the value of structured teaching and the importance of adapting to both the environment and student when executing your plan.[16]

This reflection will highlight personal encounters within this teaching concept – further exploring the advantages this method holds in surgical training alongside legitimate concerns. It will also constitute additional literature beneficial to international students within similar trauma departments; providing them an opportunity to reflect upon important ethical issues and their future role in a medical team abroad.

Methods

The structure of the following reflection will be divided into each individual tier with an overall summary at the end. At each tier Johns' model of structured reflection will be utilised alongside current literature.[17] The three tiers are: see one, do one and teach one.

At each tier I will summarise my clinical experiences before focusing on reflection; I will question what I was trying to achieve and explore relevant factors associated with the tier. Following Johns' model, I will consider any external factors that may have influenced my experience; an example could include medical supply shortages. Reflecting on both internal and external factors will support my conclusion on the status of this teaching method.

Finally, the key feature of this model is critical reflection on the learning points taken from this experience as a whole. This constitutes four themes: aesthetic, personal, ethical and contextual. This allows me to challenge how I will change because of this experience and what the consequences are for surgical teaching methods. This framework suits the question because it considers a range of viewpoints on the topic, whilst also providing an opportunity to consider the impact of my actions on other people and on my own values.

Reflective Summary

From my first shift in the trauma department, doctors would directly say the phrase, 'see one, do one, teach one' and I soon realised that the doctor-student relationship within the unit was formed around this teaching culture.

See one

'See one' as a concept is common across all nations when training surgeons; patients are generally accommodating in allowing those who are learning to observe procedures. The aim of this tier is to demonstrate a procedure with a verbal explanation. Visualising the process provides a clear understanding of what is expected compared to book-learning.[18]

I observed a variety of procedures throughout my clerkship. These were classified into procedures taught to me such as femoral blood gases, and those I simply witnessed such as sternotomies. One specific procedure that was novel to me was the use of E-FAST (extended focussed assessment with sonography for trauma) as an investigation. Many trauma patients would have this undertaken at the time of presentation; it involved searching for fluid accumulation in the abdomen and ruling out pneumothoraces.[19] Doctors would take me through the procedure and explain the importance of each view. As English students, we are not experienced in interpreting ultrasound scans (USS), but through frequent observation I was trained to pick up pathologies. Initially I felt overwhelmed by the prospect of interpreting images that seemed very undefined, however an inquisitive mindset compelled me to supplement 'see one' teaching with further reading around the subject. It is rare to find doctors completing their own USS in England; this external factor motivated me towards developing this skill at a basic level in order to build on through future courses. South African doctors tend to complete USS themselves across all specialities. It challenged my viewpoint that doctors should rely on investigative reports and suggested that completing your own USS with real-time understanding of the clinical picture can aid diagnosis.

Throughout this tier there are minimal ethical concerns for patient safety, albeit there are some that warrant reflection. As an observer, I had to consider patients' autonomy in refusing a student present. Ignoring their preferences could lead to distress and uncooperativeness; these thoughts were influenced by experiencing patient-led consultations in England. However, I noticed a reversed dynamic between medical professionals and patients in South Africa whereby nurses were seen as motherly figures

and doctors were simply obeyed. No patients refused my presence and many looked perplexed that the option was presented to them. Furthermore, it was vital that all procedures were in the best interest of the patient and not completed for the purpose of student observation. A simple example involved a doctor asking a patient to momentarily hold his breath so I could artificially see a pneumothorax finding on USS. In this specific case it did not impact patient safety, but for all uses of this teaching method this concept needs to be carefully considered.

Furthermore, it was equally vital that confidentiality was maintained for all patients. This was difficult due to the open plan of the emergency unit with limited rooms available for private consultations. However, for sensitive cases such as domestic abuse we would prioritise securing a room before initiating a discussion. Many of the doctors were exemplary role models for patient interaction; through observing difficult conversations I found it was important to be an attentive listener, speak softly and treat every patient with absolute compassion.

Do one

After observing a procedure, the doctors would expect us to 'do one' as the most crucial step of the teaching style. This tier should only be initiated once competency is proven through multiple observations, clear explanation of the technique and appropriate supervision. At this stage competency should not be assumed by the supervisor or student.[20]

Through my lengthy stay I completed countless procedures and developed a competence whereby interns would refer to me. This included scrubbing down burns, facial suturing and removing a bullet. The burden of burns on the trauma department was evident during my stay. Doctors referred to the winter period as 'burns season'.[21] Due to the overwhelming caseload, we would be expected to scrub down the patients under analgesia, photograph, dress with jelonet, bandage and document before referring for senior assessment. This was a daily task I would manage independently once I was trained in order to alleviate the department's caseload. This task required emotional and physical strength and I had heartfelt sympathy for the distraught patients and relatives.

One particular incident had a profound impact on how I will develop patient rapport in the future. I picked up a child's file, the triage assessment stating bilateral lower limb burns. In the hectic motion of the day, I mentioned to the grandmother I will get my equipment ready first so I can clerk and treat together; I failed to initially prioritise the child. As I beckoned the pair into a private room, I immediately acknowledged the apprehension within the child's eyes. In such an environment it can be easy to forget the principles of compassion and empathy. I instantaneously attuned my intentions and set myself the task of building a suitable connection by asking the meaning of her name, talking about school and eventually breaking her into a laugh. The building of rapport allowed me to appreciate the ease in completing the procedure due to her cooperativeness. The outcome of such an incident without appropriate communication could lead to mistrust between the patient and the medical community for the rest of her life. Future patient interactions must be built on kindness and sensitivity without the need for patient cues to initiate this.

This aspect of the teaching technique raises the most concerns across the ethical principles.[12] Beneficence/non-maleficence dictates that medical professionals should keep patients' best interests at the forefront and prevent harm. Whilst learning, all procedures must be appropriately supervised until competence is reached. If a student is dishonest regarding their capability this can lead to serious implications for patient wellbeing. Furthermore, it is critical that international students do not view patients as procedural practice, but rather place patient health to the same priority as they would their family. This concept links closely with patient autonomy; competent adults must be provided with adequate information about the procedure, its risks, and the person's role

delivering it. Even if competency is parallel to that of doctors, students must be honest in their role. If a patient refuses treatment from a student, it is imperative that past practical experience is not over exaggerated to persuade them.[22]

Prior to my clerkship I was concerned about the issue of justice, and whether the need to be trained would take doctors away from what patients deserved. Doctors preferred the term distributive justice whereby resource allocation is based on justified reasoning creating an equitable rather than equal system.[23] This teaching method creates trainees that enhance rather than burden the local health system; they provide more resources to be distributed within a struggling department and indirectly improve the efficiency and thus fairness of care.

Teach one

At this stage it is assumed the student has now amassed enough experience to perform the procedure without supervision and guide someone else through it. Teaching someone in this manner brings the learning cycle back to the start for a student who is 'seeing one' for the first time. This tier is often neglected in literature and studies that call for change to Halsted's teaching technique omit it from their suggestions.[3,24]

I did not expect to reach this stage of the teaching technique, however medical students rotated through the trauma department fortnightly with a minimal skillset. Due to over one-hundred hours of experience coupled with tailored teaching from plastic surgeons, many of the interns requested that I guide the new students in the art of suturing.

Peer-teaching is widely utilised and benefits the teachers, students and the overwhelmed doctors.[25] Whilst teaching, it was important to refresh the essentials of suturing so that students learn in the correct manner rather than acquire bad habits; I felt confident in my ability and looked forward to applying my previous reflections within my own practice. One incident explored the importance of balancing patient safety with surgical training; the student requested that she suture a patient's lip that I was preparing for. My ethical conscience led me to question her abilities, only to discover she has never sutured before. Her attitude helped me appreciate that not all professionals will follow this hands-on teaching method with due care, furthermore I realised that trainees probably complete procedures regularly that they are not competent in, thus impacting patient safety. As emphasised for this method, supervision and tailored teaching should be utilised. Therefore, she observed the procedure and I was able to explain the important principles behind suturing lips, completing infraorbital blocks and utilising different suturing materials. Following this experience, I supervised her suturing a lacerated foot making sure to focus on each stitch and direct her if needed. My teaching was influenced by my own experiences in the unit, but further to this, wanting to create an open environment where she felt confident asking for extra assistance. This experience highlighted the positives of the teaching method whereby the student boosted her skills and confidence in a short amount of time, but also shed light on the concerning issues this method presents in an unregulated environment.

Despite the last tier being often neglected, it significantly boosts the confidence of the original trainee and provides an opportunity to recap the procedure in a structured manner. I found that teaching multiple students allowed me to appreciate what others struggled with and adapt my style to support them whilst simultaneously improving my own capabilities. This tier positively reinforces the need for medical professionals to become passionate educators and has influenced my future ambitions to be involved in supporting students with their clinical development.

Discussion

Partaking in this teaching method as both a student and a teacher has given me an insight into its future use. It has contributed to the greatest lesson in responsibility

within my education. It was evident that at times, a patient's care lay solely in my hands and that no matter how tired or hungry I was, I had a duty to fulfil. During busy periods I would sometimes notice no other doctor with me in the unit, due to multiple emergencies in resus. This teaching method gave me the confidence and the skillset required to manage those difficult situations.

The literature expresses similar findings; valid arguments are made for this teaching approach in education because it fosters a culture of mentoring and peer-assisted learning.[2] Various teaching models and studies support methods whereby students actively take part in the learning process.[26,27] This enhances their motivation to learn and encourages them to take greater responsibility for their personal development.[28] Studies have also found that trainees taught in this manner demonstrated a superior performance compared to colleagues who were trained under complete supervision.[29]

Nevertheless, as raised through my experience, it is essential that patient wellbeing is not compromised for the purpose of surgical training and that each department openly acknowledges the ethical ramifications involved. This method also relies on an individual's teaching technique correlating with a student's learning style.[30] Supervisors must be willing to develop a close relationship with the student and accordingly adapt in order to encourage asking for assistance. Spending my time in only one hospital with limited supervisors creates a limitation to my conclusions; other departments may not adapt to the same teaching culture or have the variety of surgical presentations required for trainees to achieve competency. Furthermore, I found that this teaching style is primarily suited to procedural skills and cannot be a substitute for learning surgical theory.

As a result, many studies call for an adaptation of the teaching method, placing a stronger emphasis on simulation and the use of procedural checklists.[3,24,31] This form of teaching provides an advantageous way of reducing patient safety concerns. However, low-resource trauma departments lack the infrastructure and the appropriate teaching culture required to facilitate such change. It would be preferable that a manageable recommendation be offered to such departments. From my experience, it would be beneficial for students/trainees to be provided with a structured session on the teaching method they will participate in prior to entering the emergency unit. This would encourage them to reflect upon the ethical issues involved, how to tackle them, and what steps they can take to maximise their learning potential whilst protecting patients. Further research on whether such a session changes attitudes and improves patient safety would be valuable to such departments.

To conclude, this placement has provided life-changing experiences for my future surgical career and relevant findings for future elective students. Appreciating the dynamics behind how we learn and teach creates a set of well-rounded doctors with mindsets ready to support the next generation appropriately.

References

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Learning outcomes

Detail here how the aims and objectives were met

To demonstrate increased competency in procedural skills.

I spent time the majority of my time in the emergency trauma department developing a variety of procedural skills as mentioned in my report. Further to this I also had the opportunity to spend time with the plastic surgery team who provided tailored teaching on fine surgery and suturing. Finally, I also had the opportunity to shadow land and air ambulance teams to enhance my skills within the field as well as in hospital.

To reflect upon the teaching methods displayed in the trauma unit and balance it with patient care.

I gained an appreciation for the benefits and drawbacks of the teaching style within the trauma department. This was through learning a variety of procedures such as intercostal drains, central lines, suturing and femoral ABGs.

To provide ethical points of consideration for future medical students when conducting trauma electives abroad.

I had the opportunity to reflect every evening on my actions and the actions of others within the trauma day. I could then discuss these ethical issues with my brilliant host Dr Alan Peter. This allowed me to present these reflections into a report.

To gain an appreciation of South African history, the recent apartheid and societal issues contributing to poor health.

Through taking every opportunity I could, I shadowed a GP within a township area and discussed extensively with staff and patients the ramifications of apartheid and the impacts it has to this day on healthcare. Delivering medicine in people's homes through ambulance also allowed me to realise the enormous wealth gap that existed with mansions right next to shanty towns. Simple aspects such as lack of electricity and heating led to households using equipment such as gas stoves and boiling water. This commonly led to many paediatric burns with presentations every day. Unfortunately, the apartheid museum was closed due to funding issues during my stay.

To explore the nature and beauty South Africa boasts in its landscapes and wildlife

I had the brilliant opportunity of going on two excursions during my elective. I went on a camping trip to the Drakensberg Mountains with an Austrian student for four days which held beautiful sights and scenery. I also went on a three-day safari trip with my host Dr Alan Peter who was a part-time safari ranger at the Pilanesberg National Park. Both experiences have made me want to return to South Africa to explore other aspects.

Evaluation

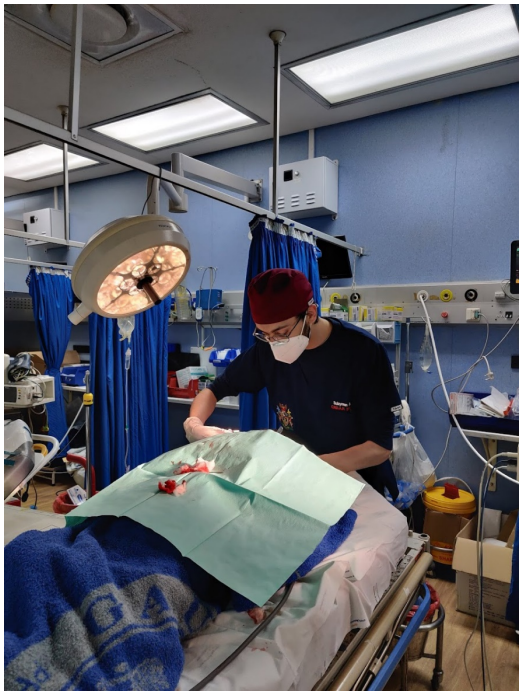
How has this scholarship/award impacted

Receiving this award and conducting this elective has benefitted me immensely:

- Supporting an elective in a surgery-based department which is what I hope to purse later on in my career.

on your clinical/NHS practice or equivalent?	• Allowed me to appreciate the responsibility the title doctor holds and the commitment one must have to their patients at all times. Giving up mid-shift is detrimental to the lives of others • It has allowed me to become a lot more confident in surgical procedures and managing patients as a whole. It has improved my clinical communication and provided an opportunity to learn how to be independent and self-sustaining in another country for two months. • Creating long-lasting friendships with other medical students across the world and doctors within South Africa. • An opportunity to reflect and present my experience and findings to others for the betterment of their elective clerkship.

SECTION 3 | IMAGES



SECTION 4 | EXPENDITURE	
Breakdown of expenditures *Please demonstrate how the scholarship/award funding was used to support your project/visit*	Hospital Costs: £500 Flights: £800 Accommodation: £500 Food: £400 Excursions: £200 Petrol and car: £800

SECTION 5| PUBLICATION	
Scholarship/award reports may be published in College News. Please tick here if you agree to your report being published.	☒ I give permission for my report to be published in College News *If your report is selected for publishing, the editor of College News will be in touch to discuss this with you.*