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Changes in surgical training opportunities in Britain and South Africa



HIGHLIGHTS

- The British senior surgical SHO trainee has been reduced from primary operator to assistant over the last twenty years.
- South Africa consistently offers a higher proportion of emergency general surgery including exposure to trauma surgery.
- South Africa offers more opportunity for the senior SHO trainee to act as primary operator, especially for major procedures.
- Trauma patients are generally young and fit and therefore may be more suitable for training operations.
- Re-introduction of minor operation training lists and return to a surgical team firm structure may improve trainee experience.

A B S T R A C T

Keywords:

General surgery
Education
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Emergencies
Wounds and injuries

Introduction: There have been substantial changes in the provision of surgical services and in surgical training over the last twenty years. Consultants now have a much greater role in delivery of care, but concerns have been raised over surgical trainees' lack of experience, particularly with trauma and emergency cases.

Methods: The logbooks of surgical trainees undertaking 6 month posts during 1992–3 and 2009–12 in both the United Kingdom (UK) and South Africa (RSA) were analysed.

Results: There was a 50% reduction in total hours worked between the UK posts in 1992–3 and 2011–12. The trainee post in RSA 2009–10 completed 15% more hours than the equivalent UK trainee post. Elective cases predominated in both UK posts (70–83%) whilst in RSA the number of trauma cases was substantial (21–26%). The UK 2011/12 trainee was rarely the primary operator (30%) compared with all other training periods (72–82%). This was due to a combination of relatively less minor and more major elective surgical cases in the recent UK post compared with the historical UK post or either RSA post.

Conclusion: RSA has consistently offered more exposure to emergency, and especially trauma, surgery than the UK as well as more opportunity to act as primary operator. Re-introduction of “minor operations” lists for junior surgical trainees, acceptance of the importance for trainees to act as the primary operator, maintenance of the traditional “firm” structure and support for trainees who wish to spend a period of time abroad may help to improve clinical training and experience for UK surgical trainees.

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1. Introduction

The European Working Time Directive (EWTD) and Modernising Medical Careers have caused concern amongst surgical trainees and trainers regarding the opportunity for development of surgical experience and competence within a reasonable timeframe [1,2]. If the equivalent of five years of 80-h work weeks (over 19,000 h) including 2753 h (14%) as operating surgeon were previously required during surgical training, it begs the question: how many years of 48 h weeks are likely to be required? Trainees and trainers have voiced concerns over the lack of experience, particularly with trauma and emergency cases [3–6].

Historically, surgical trainees looking to expand their emergency surgical experience have spent a period of time working

abroad, particularly in countries such as the Republic of South Africa (RSA) where there is a different mix of surgical pathology both traumatic, in keeping with the high rate of interpersonal violence and emergency general surgery. Such posts offer the chance to gain greater operative experience at an earlier career stage and to practice more autonomously than in the UK [7–9].

We therefore wished to compare the operative training experience gained at senior SHO level in each country and at each time period.

2. Methods

Three individual surgical training logbooks covering four

different 6 month periods were analysed. Each period was lifted from the authors' personal records. This included two from 1992/3 (RH) and two from 2009 to 12 (MG & JC) with a contrasting post in South Africa and the UK for each of these two periods of time. The analysis involved categorisation of every operation in each logbook by at least two authors independently and then corroboration of the numbers within each category. Operations were categorised by three differing variables:

1. Case type: Emergency – Trauma, Emergency – Non Trauma or Elective
2. Trainee role: Assistant (A) Performed under supervision (PA) Performed unsupervised (P) or Teaching/Supervisor (S)
3. Operative Complexity: Minor or Major

Minor procedures were defined as those taking less than 30 min, not breaching deep fascia or requiring little technical skill.

A descriptive statistical analysis was undertaken.

3. Results and discussion

3.1. Working hours

The minimum number of hours worked in each post was calculated, assuming a 9 h working day, out-of-hours rota as shown in Table 1 and two weeks annual leave per post. This conservative estimate reveals a 15% reduction in total hours between current on-call and partial-shift systems (RSA 2009/10 compared with UK 2011/12) and 50% reduction in total hours between UK 1992/3 and UK 2009/10.

3.2. Case volume

The absolute number of cases in the 1992–3 posts compared with those of 2009–12 is substantially higher irrespective of country as shown in Table 2: 430 (UK 1992) and 266 (RSA 1993), compared with 189 (UK 2011/12) and 180 (RSA 2009/10).

3.3. Case mix

Emergency surgery is an important part of general surgery training for a junior trainee. Elective surgery comprised 83% of UK cases in 1992–3 and 70% in 2011/12 compared with 45% of RSA cases in 1993 and 25% in 2009/10. The RSA posts had a higher proportion of trauma cases (21% in 1993, 26% in 2009/10) compared with the negligible number of cases in the UK (Fig. 1).

Table 2
Procedures per post.

	UK 1992/3	RSA 1993	UK 2011/12	RSA 2009/10
Total procedures	430	266	189	180
Trauma (E)	1	56	2	47
Non-Trauma (E)	73	90	54	88
Elective	356	120	133	45
Assisting	122	54	133	33
Supervised	50	17	54	29
Unsupervised	258	186	2	108
Teaching	0	9	0	10
Minor	343	132	64	69
Major	87	134	125	111

3.4. Trainee role

The last twenty years have seen a major change in the role of a surgical trainee in the UK. In 1992 the junior trainee was the primary operator in 72% of cases compared with 30% in 2011/12 (Fig. 2). However, in RSA, the trainee's role has remained fairly constant (80–82%).

When the recent UK trainee did act as the primary operator (Fig. 2) it was rarely (4% cases) without direct supervision. In contrast, trainees in the other periods were given the opportunity to develop confidence without a supervisor scrubbed, but available if required: 84% in UK 1992, 92% in RSA 1993, 81% in RSA 2009/10. The proportion of supervised operations undertaken during the RSA training periods increased from 8% to 20% between 1993 and 2009/10.

In RSA, trainees had the opportunity to teach a more junior colleague in (3% in 1993 and 6% in 2009/10) whilst this never occurred in the UK. These were predominantly simple procedures such as incision and drainage, wound debridement and excision of small skin lesions.

3.5. Case complexity

This change in trainee role may in part be explained by case complexity. Minor operations comprised 80% of UK cases in the 1992/3 post compared with 34% of cases in 2011–12 (Fig. 3). This

Table 1
Details of the four training posts.

Location	North east thames UK	Gauteng RSA	Cwm Taf UK	Mpumalanga RSA
Time period	1992/3	1993	2011/12	2009/10
Type of Hospital	DGH	City Hospital	DGH	Rural referral hospital
Training stage	SHO3	Junior Registrar	CT2	Senior Medical Officer
On-call commitment	1 in 2 (on call rota)	1 in 4 (on call rota)	Days/Weekends - 1 in 7 (partial shift) Nights - 1 in 14 (partial shift)	1 in 7 (on call rota)
Minimum hours by rota	2556	1818	1281	1502
Number of General Surgery Consultants in Hospital	4	8	10	3
Specialties covered on-call	General Vascular Urology	General Vascular Urology Thoracic Head & Neck	General Vascular Urology	General Orthopaedic Urology Vascular Neurosurgery ENT Thoracic ITU

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