Training War-Time General Surgeons in a Peace-Time ADF

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Introduction

Until as recently as the second Gulf War, the skill sets of civilian general surgeons were readily transferrable into military surgical practice. The modern Australian Defence Force (ADF) faces an evolving issue where this is no longer the case. Civilian surgical practice has evolved rapidly, with newly qualified general surgeons possessing a skill set that is largely incongruent with the ADF's requirements. As senior surgeons retire from military service, the ADF must explore avenues to recruit suitable clinicians and ensure they are adequately trained in the technical operative skills required for military service. This 'view from the front' outlines a problem that has developed outside of the ADF's control and proposes a variety of possible solutions.

Civilian training

Training of general surgeons in Australia is governed by the Royal Australasian College of Surgeons (RACS) and delivered by General Surgeons Australia (GSA). College requirements of general surgery trainees must be met before receiving a Fellowship of the College (FRACS). These requirements include completing:

- the Generic Surgical Sciences Examination and Clinical Examination (required to enter training)
- eight six-month rotations through various surgical disciplines
- 800 'major' operative cases, being the primary operator for 335
- 100 gastroscopies and 50 colonoscopies
- prescribed courses and research
- the fellowship examination.

Through these requirements, RACS and GSA achieve their respective missions to be 'the leading advocate for surgical standards, education and professionalism in Australia and New Zealand', and 'to ensure the provision of high-quality, comprehensive General Surgical services, including emergency and planned services, to the Australian community'.

This training continuum is highly effective at meeting its self-identified mission. The result being a well-qualified general surgeon who is suitable for civilian surgical practice.

The problem

The core problem facing the ADF general surgical capability is a progressive divergence of the civilian surgical skill set from that required on deployment. While evidence shows that injury patterns have changed in modern conflicts, the basic skills required of the military surgeon remain unchanged. A military general surgeon must be capable of managing major bleeding, trauma of the head, thorax, abdomen, pelvis and limbs, and severely contaminated wounds. Furthermore, they must also manage the breadth of non-traumatic emergency surgical presentations without the aids of laparoscopic or endoscopic equipment, interventional radiology or the assistance from a range of subspecialists available in civilian tertiary centres. This is especially true when the general surgeon is deployed to a Role 2 or forward surgical facility.

In the civilian sector, the recently qualified general surgeon specialises in minimally-invasive approaches, endoscopy and surgical oncology. There is an appropriate reliance on subspecialty and multidisciplinary teams for patient management in both elective and emergency situations. Diagnostic tools have become cheaper, faster and more readily available. Surgical trainees are now accustomed to using, and often relying on, advanced diagnostic imaging, which may not be available when deployed, especially in more forward locations.

Essentially, the pool of general surgeons available for recruitment and deployment are clinically less suitable than they have ever been in history. Civilian healthcare is under constant evolution to improve outcomes and decrease morbidity. The presentation of surgical disease has also changed with earlier detection of cancers allowing less, or non-invasive, curative interventions. Medical treatment of disease has resulted in fewer patients relying on surgery for cure, peptic ulcer disease being a prime example.

Advances in civilian surgical care have resulted in the skill sets required of civilian general surgeons diverging dramatically from those required in the deployed setting.

In order to achieve its aims, RACS has actively assessed and adapted to the changing environment. The ADF must adapt accordingly. Since federation, the ADF has been able to rely on general surgeons from civilian hospitals who are clinically suitable for military service. The general surgical workforce trained in the open era is now retiring and being replaced by surgeons trained almost exclusively in a laparoscopic, minimally invasive and subspecialist environment. Unfortunately, the ADF can no longer rely on the GSA training pathway to provide suitably trained general surgeons for military service.

The ADF has traditionally understood the requirement for bespoke training to acclimatise predominantly civilian trained professionals to the military system. Accordingly, basic officer training and preparatory exercises take place prior to deployment on war-like operations. The ADF has not previously endeavoured to institute a training continuum to address technical skill deficiencies faced by the general surgeon. Historically, this has not been required as the clinical skills of recruited surgeons closely mirrored those required by the ADF on deployment. Unfortunately, a significant gap between the product of civilian surgical training and the demands of military practice has developed. In order to continue to deliver high-quality battlefield surgery to sick and injured ADF members, the ADF must develop robust mechanisms to address general surgical skills deficiencies. Lateral thinking and an innovative approach are required to achieve this aim.

Possible solutions

Six different strategies available for training general surgical specialists in the ADF are presented and summarised in Table 1.

1. Domestic courses

ADF general surgeons must complete the Early Management of Severe Trauma (EMST), known internationally as Advanced Trauma Life Support (ATLS). The Definitive Surgery Trauma Care (DSTC) course is recommended, however, not mandated. The Anatomically Based Surgical Exposures for Trauma (ABSET), known in the USA as the Acute Surgical Skills for Exposure in Trauma (ASSET), is a valuable course and new to Australia. These courses are a good starting point for developing a basic trauma surgical skill set, and the DSTC offers a valuable additional military module.

2. International courses

The Surgical Training for Austere Environments (STAE) Course is a civilian course offered by the Royal College of Surgeons that would help bridge the gap between civilian and military practice for ADF surgeons. Both the British and US military have developed specific courses for health specialists to aid in addressing the training deficiencies outlined previously. The US Emergency War Surgery Course (EWSC) and the UK Military Operational Surgery Training (MOST) are valuable courses potentially available to ADF general surgeons. It may prove worthwhile to develop relationships with these courses to increase ADF participation.

Table 1: Strategies for training health specialists in the ADF

	Training Courses	Civilian Placement	Military Activities
Domestic	EMST DSTC ABSET	College Training Programs Skill Maintenance CPD	Exercises War
International	STAE (UK Civilian) EWSC (USA Military) MOST (UK Military)	USA UK South Africa South Pacific	Deploying with allies at war

EMST = Early Management of Severe Trauma, DSTC = Definitive Surgical Trauma Care, ABSET = Anatomically-Based Surgical Exposure for Trauma, CPD = Continuous Professional Development, STAE = Surgical Training for Austere Environments, EMSC = Emergency War Surgery Course, MOST = Military Operational Surgical Training

Alternatively, the ADF may consider developing a bespoke program domestically, using these courses for inspiration. The economics of such a venture on an ADF scale would need to be considered and compared to utilising courses that already exist overseas.

3. Domestic civilian clinical placement

The domestic civilian workload is a mainstay of the current ADF model for preparing general surgeons for deployment. The ADF relies on the civilian sector to train and maintain currency in deployable general surgeons. All ADF full- and part-time specialists maintain their skills and accreditation through civilian practice and CPD programs.

The main advantage of this model is that it is widely available and carries minimal cost to the ADF. The main disadvantage, outlined above, is that the civilian sector exists to meet civilian demands, not those of the military.

4. International civilian clinical experience

ADF general surgeons would likely benefit from clinical experience in international high-volume trauma centres. Australian general trauma surgeons often aspire to work in the USA; however, recent reports and first-hand anecdotal accounts suggest that there are not enough opportunities for the USA's own military surgeons to prepare for combat in these centres.

Countries such as South Africa may offer a significant opportunity to operate on penetrating trauma cases; however, issues surrounding accreditation and personal risk to ADF members would need to be addressed.

Closer to home, there may be opportunities to engage with our near neighbours. The Pacific Islands potentially provide mutually advantageous clinical opportunities that may also have strategic benefits in keeping with the Pacific Step-Up policy. Ethical and logistical challenges would need to be addressed to ensure suitability and sustainability; however, these issues are not insurmountable.

5. Australian military activities

While war itself is the best preparation for military general surgeons, in peacetime, military exercises provide important training. Participation in exercises provides our surgeons with familiarity with field hospital equipment, the field environment and basic military skills. Important training for the hospital system and its staff during HospEx and other simulation-based activities is also achieved. However, it must be emphasised that there is limited technical clinical training of our medical specialists during these activities. The individual services have begun to address this issue. Exercise Abbeville conducted by 3HSB is designed to enhance the knowledge base of specialist clinicians. The RAAF's proposed funding model, allowing reservists to attend clinical activities to enhance their military capability and the Navy's Project HELM (Health Education Learning Matrix) to train teamwork skills, also demonstrate a willingness to address the problem we have articulated.

6. International military activities

Our deployed allies, especially the USA, are regularly reporting issues with burn-out and over deployment of their surgical specialists. Opportunities to augment their teams with ADF surgeons may present themselves. Ongoing participation in war-like operations is probably the best way to avoid the so-called 'Walker Dip', named after Surgeon Vice Admiral Alasdair Walker RN. Vice Admiral Walker described the natural tendency to forget the lessons of each conflict during peacetime, only to have to learn them again the next time around. Of significant concern is that the next generation of general surgeons may possess a skill set that is simply too far removed from that required in the deployed environment. It is feared that this cohort will be unable to learn these lessons rapidly enough to prevent catastrophic outcomes for our next cadre of wounded warriors.

Conclusion

The issues identified in this article have occurred outside the ADF's control. Despite this, the ADF must look for solutions and work towards addressing the aforementioned training deficiencies identified. Previously, the ADF has relied on individual specialists rectifying relatively small deficiencies in their skill set to complete their clinical repertoire prior to deployment. These deficiencies have become systemic and significant, and a modern, professional ADF must work towards their resolution. The ADF would never allow civilian pilots to fly fast jets having upskilled themselves in their own time and declared themselves ready to go. It is unacceptable to allow general trauma surgeons, ultimately responsible for the lives of our injured troops, to use that model in the future.

The solution may involve specific high-yield clinical placements, a portfolio of courses and/or coordinated

rotation of specialists through worthwhile military activities with training value for specialists' clinical skill development. As clinicians, we must help the ADF develop a robust training system aimed at bridging the civilian-military divide. In doing so, the ADF will be able to recruit, retain and better prepare our military general surgeons and other specialist craft groups. Consequently, the ADF will be able to provide the care that our wounded soldiers, sailors and airmen expect and deserve.

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