

WAR AND MEDICINE

THE INTER-RELATIONSHIP OF WAR AND MEDICINE – LESSONS FROM CURRENT CONFLICTS

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War leads to medical advances, and the current conflicts have been no exception. However, the relationship between war and medicine is complex. Medical issues influence public reaction to conflicts and medical (or more accurately health) policy can contribute to operational success via the ‘comprehensive approach’. The contemporary difficulty facing war and medicine is how to reconcile national responsibility for medical evacuation and treatment with the need for medical multinationality within an environment where ‘quality assurance’ will rapidly expose sub-optimal care. This article considers these issues and explores the role of a nation’s military Surgeon General in times of conflict.

As has been the case since medicine was introduced onto the battlefield, war provides an opportunity to learn, and the current conflicts have been no exception. Whilst these advances are interesting in their own right, it is other longer-term consequences of this conflict which have wider implications.

Casualties

First, casualty numbers. The size of a deployable medical service is underpinned by assumptions on illness rates (a medical staff responsibility) and battle casualty rates. When facing a known enemy with whom the nation is required to engage, which was the case during the Cold War, the battle casualty rate is, within the limits of scientific error, an accepted fact. When there is no such enemy, or rather a generic enemy, and the nation has a choice over whether or not to engage, it is theoretically possible to set an upper limit to battle casualties and accept that the armed forces will

not engage in operations where there is an expectation that the pre-determined rate will be exceeded. This was the case during the mid-1990s at the time of the Defence Cost Studies (DCS) when, as the army lead for implementation of the medical study (DCS 15), I had to address the argument of some in the Ministry of Defence (MoD) who opined that neither politicians nor the nation would accept a significant casualty rate and therefore there was additional scope for disinvesting in the armed forces medical services.¹ There are two aspects to this issue: our ability to accurately predict casualties and the preparedness of the nation to persevere in the face of heavy casualty rates.

There is a significant literature on casualty rate prediction,² but less on how effective such predictions have been ‘for real’. As General Rupert Smith was wont to say, ‘there is only one certainty in war and that is casualties, with a good plan and luck they will be the enemy’s, otherwise our own’. Added to this, the

enemy will not necessarily behave as expected – he has a vote and is unlikely to cast it to our advantage. Arguably the current campaign in Afghanistan is a good example, with an enemy initially assumed to lack capability being able to inflict, and continue to inflict, casualties on our forces. This underpins the need for an effective medical service with a degree of resilience; but how much resilience? I cannot answer this question, which is similar to the question ‘how much insurance’ – cost, organisation, assumption on Reservists, and multinational support and maximum casualty rates are all factors; in the end the answer is, in practice, in part subjective. The degree of resilience brings us to the second aspect: how do casualties, real or expected, impact on the conduct of the campaign? When does the nation determine that the casualty rate is too high? Has our approach or acceptance of casualties changed in recent decades? What does the nation believe about our current casualty rates?



The UK's Medical Emergency Response Team (MERT) transport a civilian casualty wounded in southern Afghanistan. *Photo courtesy of Susan Schulman.*

In Afghanistan we have so far sustained 182 combat deaths, whilst in Iraq the figure is 136, a total of 318 combat deaths.³ All deaths are a tragedy, but the current numbers are relatively low compared to previous operations. In a six-week period in 1982 we sustained 255 combat deaths; in Malaya during confrontation some 519; and in a single year, 1972, in Northern Ireland there were 146 uniformed deaths, ten more than the whole of the Iraq campaign.⁴ So what effect do returning coffins have on the success of a campaign?

It is sometimes said that it was returning body bags that undermined and eventually led to the loss of the Vietnam War. However, a study I read some years ago based on an analysis of US newspaper reports from the Vietnam era suggested that casualties have a two-way effect leading to a potential tri-phasic response by the public. Initially, casualties are acceptable as a result of a popular or uncontested decision to go to war, or low rates. In the next phase they are acceptable as, for a nation having initially sustained casualties, not

to continue would result in the initial lost lives being 'wasted'. Only when it becomes perceived that a campaign is 'unwinnable' do casualties contribute to a popular movement to abandon the campaign. That study did not, as far as I recall, give any clue as to what in any given set of circumstances is 'acceptable'.

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However, I believe that UK policy-makers' concern about the impact of significant casualties is unduly pessimistic, as long as the public perceive that we are fighting a winnable war and, as I explain below, they perceive that casualties are not the result of shortfalls in men or equipment. As an aside, it is interesting to consider

the reported impact of the recent incident that caused six Italian fatalities as reported in the Italian media, which led to calls for an Italian withdrawal.⁵ Does this indicate a different level of acceptance of casualties or is it simply a misunderstanding by the Italian press of the resilience of the Italian public?

However, I do detect a change both within and without the armed forces. My early experience was in Northern Ireland at a time of relatively heavy casualty rates. This early experience was followed by a period at our Training Centre where I started developing my intellectual understanding of military medical services. This brought me into contact with very senior Israeli military medical personnel and, on a number of occasions, I was struck by the consideration they gave to each Israeli death, and indeed their Surgeon General (SG) during the 1982 Peace for Galilee campaign could account for every single Israeli death, which at the time contrasted to our approach. Perhaps our approach at the time was influenced by a nation and its senior military officers who were veterans

of a World War and Korea. In this respect, it is interesting to compare and contrast two Coroner's Inquests where I gave evidence. The one that I attended during the Northern Ireland conflict in the mid-1980s was relatively superficial compared to a recent one I attended in relation to the current campaigns. Even Northern Ireland deaths that clearly involved some error passed without significant adverse external comment. In contrast, the one inquest that I have attended in person during this campaign appeared to me to be very adversarial and could almost have been a Criminal Court with the MoD as the accused. Whether this change is good or bad, I leave for debate – I suspect a bit of both. I do wonder though whether today my battalion commanding officer would be able, as he did in Belfast, to take the decision to forsake our Saracens and Pigs and opt instead for open, stripped down landrovers, in order to visibly dominate the streets – a tactic that at the time seemed to me to have been very successful.

Media attention can be corrosive as it undermines confidence of serving officers and their families

Another aspect of the change is the wider public and media attention to the ongoing management of our casualties which exceeds that given to casualties of previous conflicts, with perhaps the exception of the Falkland Islands campaign in 1982. Compare and contrast the media and political attention to the care of our casualties in Selly Oak to that which surrounded the care that our injured received in Northern Ireland in the Royal Victoria Hospital, where they were treated alongside terrorists and by hospital staff, some of whom were at least Republican sympathisers, but which passed without comment, except when there was a security breach. However, in some areas, and possibly because of the issue of the long-term care of complex casualties, media attention may usefully accelerate necessary changes to our

traditional approach towards the split between the Defence Medical Services (DMS) and NHS in how we manage those casualties that would previously have died but live with extraordinary disabilities. In other areas, such as the media concentration on mental health,⁶ it can be corrosive as it undermines confidence of serving soldiers and their families in the medical care and support available.

Impact of Medical Developments

I am not going to explore the 'how' of medical success; success it is, but let me first quantify success. In March 2005, as Director General Army Medical Service (DGAMS), I briefed the army's General Staff Board that as a consequence of developments in Israel and the US there was the potential to reduce overall mortality rates from the historic approximately 5 to 5 per cent. The latest data, currently going through a verification process,⁷ that I have is that we have reduced our mortality from that 25 per cent to approximately 16 per cent, and the Medical Research Council and the NHS are looking to us to help develop the civilian trauma services – a lesson for those who propose that we should rely to an even greater extent on reservists from the NHS. One of the mistakes I was not going to make as DGAMS, or as Surgeon General, was the one levelled against the MoD during the Post Traumatic Stress Disorder (PTSD) Group Action Trial some years ago (at which I was a witness), of being out of date in terms of medical knowledge of PTSD, known to our US and Israeli colleagues.⁸

In his judgement, the Judge did not find that the delay was such that it amounted to negligence, but it serves as a reminder that we in the uniformed medical services have a duty in civil law to keep abreast of international medical developments, and given the pace of medical developments, particularly during a major conflict, we could easily become significantly out-of-date from something as superficial as a twelve-month block on overseas travel and subsistence or withdrawal of our US liaison officers who have privileged advance access to US developments! Also, we were lucky that by 2003 we had in the

DMS a resurgent up-and coming cadre of post-DCS 15, young, high-quality Regular hospital clinicians embedded in a civilian academic culture that took and progressed the US and Israeli experience; and, as a consequence, when we started taking serious casualties we already had in place the necessary advances. Without this Regular cadre, we would have been found wanting, and this is something that needs bearing in mind as the armed forces looks for savings in any future Defence Review.

Our teams [on a CH47 Chinook] in extremis will open a chest and keep alive a casualty that will die on a Blackhawk

Another criticism levelled against the MoD in the PTSD Class Action was that we had not ensured policy was implemented in practice. Subsequently, we have introduced into the UK 'Clinical Governance', in essence Quality Assurance, and have over the last five years been working hard to introduce this into the operational environment. As part of this we have developed processes and procedures that enable us in almost real time to track the effectiveness of our medical services, to identify and correct rapidly sub-optimal performance, and to measure outcomes, including avoidable deaths. This has been acknowledged in the recently published report by the Healthcare Commission that described our trauma services as 'exemplary'.⁹ Within a national context, this is excellent, and I would argue contributes to making the conflict acceptable. As well as saving life, the investment in medical equipment and other resources has thus provided significant value, although it now sets a new, and more expensive, 'baseline' for our contingency medical forces, as arguably it does for all our contingency forces. However, consider the impact of our enhanced Quality Assurance processes on the multi-national environment in which we are now operating.

Multinational Combat Care

Within Southern Afghanistan, both medical resources and combat forces are becoming increasingly interspersed. What will be the impact of our identifying that a nation is providing sub-optimal care and that such sub-optimal care is adversely affecting our own personnel? We had a small taste of this in Christmas 2007 when we discovered that a number of our troops had been provided with blood in US facilities that had inadvertently not been subsequently tested for blood-borne diseases. Handling the issue required the resources of the DMS, of the Health Protection Agency, the NHS National Blood and Transplant and some NHS General Practitioners. It required the US to mobilise their own US-based resources to identify which UK personnel might have been affected and it involved the UK Embassy in Washington, liaison at the 3 Star level between the UK and US, and briefing of opposition spokesmen. It led to a short but very adverse media coverage which could very easily have led to an enduring campaign.¹⁰

I hasten to emphasise that I am not suggesting that US care is sub-optimal – far from it as they have led the way on the improvements to combat care – but given the impact of a single failure in the nation with the most capable medical service, consider the effect if we discover that we are being supported by a coalition partner whose medical service is less than effective. This is not a theoretical risk, as during the course of the campaigns we have had to address the clinical competencies of a number of other nations' clinicians working within our own facilities, owing to lack of experience for the role for which they were deployed. We have now put in place informal processes to address such contingencies and prevent them becoming a political or media issue, but this only addresses clinicians working within our own facilities and not other nations' facilities. I shall return to the implications, but let me continue the theme of the actual issues that bear upon current operations.

The US has sent reinforcements to Afghanistan including a significant number of Blackhawk helicopters. Their *modus operandi* is to station their Blackhawks

in such a manner that they can very rapidly, more quickly than us, respond to a major casualty incident. However, their Blackhawk is relatively small, which precludes the advanced medical procedures that we can undertake using a CH47 Chinook, a large helicopter with an on-board Consultant-led team. For example, our teams *in extremis* will open a chest and keep alive a casualty that will die on a Blackhawk. But it takes longer to launch a CH47 and exposes a high-value team. How do we mix these two very different approaches? How would we respond in the hypothetical circumstance of a Coroner asking why a UK casualty evacuated by a Blackhawk died when he would probably have lived if he had been picked up by a CH47?

Increasingly even the largest Western nations will have difficulty in providing stand-alone major medical units

In essence we are seeing the start of a major shift in doctrine. A basic principle underpinning operational medical support has been that as with logistic support, medical support, both treatment and evacuation, is a national responsibility. Starting with the first Gulf War, this principle has been progressively eroded and casualties are increasingly likely to be treated in a hospital facility of another nation. Why this change? There are a number of reasons:

- The nature of current deployment is such that the combat forces of the various nations are increasingly interspersed, or distance makes it more logical to rely on evacuation to a closer 'other nations' facility rather than being brought back to one's own.
- These military factors are synergistic with medical factors, and in particular military medical demography. Whilst national medical workforces continue to expand, the civilian requirement expands at a similar or greater pace and recruiting and retention will remain a challenge. This challenge will be even greater for those European nations who have moved away from armed forces based on conscription to ones based on volunteers.

This means that increasingly even the largest Western nations will have difficulty in providing stand-alone major medical units, and will need to look to a coalition solution. In Kandahar we now contribute to a combined Canadian-led (soon to be US-led), CAN/NL/UK hospital, whilst in Bastion the US has concluded that it should integrate its own personnel into our hospital, rather than seek to provide its own. I am aware of negotiations between other NATO nations to also develop combined medical facilities.

This need to rely on multi-national partners has coincided with the advent of Clinical Governance or Quality Assurance in the Anglo-Saxon–Nordic nations. This is relatively new in the medical area and so far has only been adopted by a small number of Western nations in their civilian medical services and hardly at all within their military, although NATO has been persuaded that there is a need to adopt a Quality Assurance process.¹¹ Thus at present only the largest, and perhaps only two of the largest, nations could deploy medical facilities that would withstand formal modern clinical scrutiny. Others have the potential to do so should they adopt our governance regimes whilst others, if unaided, will take many years to develop complete, capable, medical facilities.

This poses a dilemma, as we need the contribution of these other nations but know that they do not have systems

in place to ensure that they can provide an appropriate quality of care and, furthermore, we will identify at least a proportion of any sub-optimal care through our own processes such as the multidisciplinary post-mortem or case review at Birmingham. Probably the only way out of this dilemma is to assist with the development of those other nations' medical services, noting that without combat medical experience they cannot self-develop. This will require an investment that we have not yet properly even articulated, but the current Danish deployment to Bastion is a possible model.¹² This followed a year's individual pre-deployment preparation directed by us and a pre-deployment rehearsal in the UK to assess residual risk. They have now deployed with a UK Medical Director to oversee clinical outcome and they have subjected themselves to the quality assurance processes we have put in place for our own medical facilities. They will emerge from the experience the better and no doubt we will also have learnt from them.

We understand far too little about integrating global health challenges into foreign and security policy

Comprehensive Approach and Understanding

Let me now turn to some observations from my perspective of the health environment as it affects conflict-afflicted nations. I will illustrate some of my points using Afghanistan, although I could just as easily use examples from the Balkans, Sierra Leone or even Northern Ireland.

We understand far too little about integrating global health challenges into foreign and security policy, including using health policy as a tool of foreign policy to both prevent and resolve intra-state conflict. Indeed, there are those who consider it unethical and anti-humanitarian to even consider health as a potential tool of foreign and security policy, holding that health is a human right that should remain uncontaminated

by anything other than humanitarian considerations. These various issues are being addressed in the UK by Chatham House as part of the UK Government's initiative 'Health is Global: A UK Government Strategy'.¹³ The US Center for Strategic and International Studies is covering the same area in the United States.¹⁴

In determining our approach to reconstruction we need to recognise that the situation in the conflict and post-conflict nations varies, depending on the state of the affected nation before any conflict and the nature and duration of the conflict. Looking at the two ends and middle of the spectrum:

- We have at one extreme the situation in Western Europe at the end of the Second World War, with its pre-conflict modern health service, health personnel in place and a need simply for economic aid and infrastructure repair.
- In the middle, we have countries such as Iraq where there was in many parts a modern health service which had over fifteen years slowly deteriorated, and where the need was primarily to modernise. Part of the UK contribution to Iraq via the Department of Health was, and is, to take clinicians from Iraq to the UK in order to introduce them to modern techniques so that they could return to Iraq to raise the overall standard of medical care in that country.
- At the other end of the spectrum, we have countries such as Afghanistan where it is not health re-construction that is required, but health construction.

This poses additional issues. First, there is the debate over the priority that should be given to health compared to economic development, governance and education. I believe that this debate fails to recognise that health is an essential element of economic development, indirectly through the maintenance of a healthy workforce and directly as it is also an economic activity. It is also a vehicle for education, because the training of health workers is education in itself, and most education in such states should be

aimed at producing a practical output. It is also a means of educating females as, particularly in those nations that 'guard' their women, it is accepted that women can provide healthcare to other women.

Second, there is the debate on what is the priority within health. This is largely over the balance of investment between public health measures which promote health and benefit all, and treatment facilities that benefit fewer. But, throughout the spectrum we should always bear in mind that the end state for the conflict-afflicted nation should be to leave it with a functioning and sustainable health system. This has two implications:

- Firstly, we should avoid providing actual health care on the ground using external sources and concentrate instead on helping the conflict-affected nation to develop a sustainable health system. External sources of aid are of course essential, but should be directed at helping local people to care for themselves.
- Secondly, it might be counter-productive to immediately implement a fully modern health service in the form that we know it. For example, and regrettably, a significant proportion of those newly-trained health professionals migrate to the affluent West. We may therefore wish to consider alternative models which deliver the desired health outcomes but in a different way. An example is how China modernised its health service via the intermediate step of 'barefoot doctors'. Again, an area for debate.

This debate ought to be influenced by the wishes of the peoples of the conflict-afflicted state, particularly if we are also seeking to gain their support and confidence – but do we seek to understand and then take account of their priorities, or do we make up their minds for them? We need to consider what we do if their wishes do not accord with ours. I have, for example, frequently been told by the Afghan SG, and on two occasions by the Afghan Minister of Health himself, that a priority for his nation is a Women's Hospital in Helmand, or at least a hospital

with a separate women's wing, but for reasons that I do not fully understand this is ignored by donors who do not see it as a priority, or more appropriately, as 'their' priority.

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I also believe that there is a lack of strategic leadership in the health area. The conflict and post-conflict situation is extremely complex with the host nation government, governments of the outside states bringing security and their not always joined-up agencies, and the increasing number of NGOs, etc. Who should provide international strategic leadership in such

a situation? The legitimate government of the nation, World Health Organisation, International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, or a lead nation? Or someone else? I have posed this question to many, including most of the above organisations. All seem to agree on the need for strategic leadership, but none appear to be prepared to take on that role.

Looking at Helmand, it is in our interests to ensure an effective hospital service for the civilian casualties of war. However, Helmand is funded via the World Bank who, unlike the provinces funded by the European Commission, will not fund hospital services believing, in spite of the view of the Afghans, that primary care is the absolute priority. The World Bank does seem to have responded to the criticism of it; a World Bank paper on their proposed grant for Afghanistan for 2010–18 that I have seen allocates

\$1 million to examining the potential to fund a hospital service, out of its Afghan budget of \$123 million, and then only to quantify the issues!

Thus, whilst Afghan civilian hospital services in Helmand stagnate, with a direct impact on UK operational capacity owing to the difficulty in transferring Afghan civilians within our UK military medical facility to Afghan facilities, the coalition is developing the Afghan National Security Services hospital services, and they are moving rapidly ahead of the civilian hospital services. How does this look to the civilian population where health is consistently ranked amongst the top five priorities of the general public and where good governance should promote civil facilities in parallel with military ones? Yes, we have developed the infrastructure of the Helmand hospitals, but whilst this is an essential precursor to developing clinical practice, it is, without competently trained staff, insufficient.



Surgery at Camp Bastion Field Hospital, Afghanistan. Photo courtesy of Susan Schulman.

So who is to develop the Afghan hospital service, how is it to be achieved and who will provide the strategic leadership? In fact, in Helmand the Afghan Ministry of Health, unable to find a major donor, has been forced to look elsewhere; recently they have turned to Médecins Sans Frontières (MSF) with whom they have just signed a contract. MSF seeks to maintain a strict distance from the military, which could pose difficulties in establishing the necessary liaison required to successfully effect a transfer of casualties from our hospital at Bastion at the time of writing, these concerns appear unfounded. We also need to consider the part that the UK should provide in the (re)constructive effort in Helmand, particularly as a comprehensive medium-term approach has been costed at £15 million¹⁵ over five years and would arguably achieve a 'value for money' effect.

Who is to develop the Afghan hospital service, how is it to be achieved and who will provide the strategic leadership?

You will note that I do not refer to the role of the military in health reconstruction for the good reason that the military ought not to be involved, except in the (re)construction of a military medical service.¹⁶ Of course, in the absence of any other provider, we must at least treat any civilians injured as a consequence of our action, and an individual health professional may on occasions be under an obligation to provide life-saving care, but (for reasons that I will not expand upon) as a general principle civilian health reconstruction should be undertaken by civilians. I do however see an advocacy role for military personnel such as myself when we identify gaps in provision and I also accept that in certain circumstances at the local level, in the absence of any civilian alternative, some limited provision can be made by military medical services.

Role of the Surgeon General

I cannot finish without addressing the role of the Surgeon General during a conflict, if only as a response to media criticism of too many generals in the MoD. As would be expected, a Surgeon General provides professional leadership for the Defence Medical Services and I will not address this further, other than to state that it is arguable whether that role alone requires a 3 Star officer. The contribution that a Surgeon General should make during conflict is over and above this professional leadership role. It is to ensure that an appropriate quantum of the nation's medical resources are brought to bear on support of the conflict, to acquire international medical support, to mould the international medical environment, to identify opportunities for enhancing survival or optimising the health of our deployed forces, to proactively identify and pre-empt issues that are likely to attract adverse public or media attention, and to address significant issues that do arise. Here are examples of each:

- First, support to the current conflicts is a national effort. We currently rely on input, materiel and support from a host of national organisations and agencies, including the Health Protection Agency, National Blood and Transplant, various regulators, a number of the Royal Colleges, the Medical Research Council and various academic institutions. We also rely on tacit support from those who could cause us difficulty such as the British Medical Association. The Surgeon General's role is to ensure that these national organisations understand the military's needs, to persuade them to contribute (particularly those that are non-governmental), and focus that contribution. Less successful so far have been my attempts to harness the combined potential of other government departments in support of the Comprehensive Approach, without which it will be difficult to leverage the offers from the DH and other contributor organisations. Perhaps the new DfID White Paper presages a new approach.¹⁷
- Second, international support. I have already outlined the development

of a combined UK-US hospital in Afghanistan and the deployment of a Danish hospital squadron into our British facility in Afghanistan and, prior to putting the initiative on hold whilst we develop the UK-US facility, we had tentative agreement with another nation to do the same. With other like-minded Surgeon Generals, supported by British officers carefully placed into the NATO Command Structure, we have persuaded NATO to develop a pan-NATO form of Clinical Governance and instigate a trial of Clinical Governance in RC(S) referred to above. I have personally been working with the United States Under-Secretary of State for Health Affairs to develop the Comprehensive Approach, and he has participated in a Chatham House conference, hosted and funded an international conference on Health Development in Afghanistan in Washington and facilitated an address by me to the US Center for Strategic and International Studies.

- As a 3 Star, when visiting other nations or major medical institutions in the UK, I am exposed to the cutting edge of medical developments, as a result of which I can direct my senior advisers to explore those which may make a major difference. As a consequence, we identified very early the majority of life-enhancing developments that we have successfully deployed and our 'in' to the US is enabling us to identify and exploit early new and exciting developments such as the use of the tongue to provide sight to those blinded in conflict. It also enables us to be able to independently judge when we should not follow the US in introducing new processes or equipment.
- I have learnt that in medical and political issues prevention is far better than cure. Early in my tenure I failed to identify that helicopter evacuation would become a media issue and therefore did not have the data necessary to refute the inaccurate claims made at that time about excessive evacuation times. The claims made at the time continue to bedevil me. On the other hand,

through a variety of means I identified mild traumatic brain injury, the US blood failure, and noise as probable major issues, and put in place action in advance of them becoming public. As a consequence, we were able to demonstrate that we were aware of the issues, took them seriously, and had put action in hand. Inviting the Healthcare Commission to review the DMS, which required amending legislation, was part of the same strategy as I concluded that if there were skeletons, it was better to expose them early, and to be able to demonstrate that by initiating the

review ourselves we were committed to providing quality care.

- One cannot pre-empt everything and a SG must be as ready as possible to react. When we were criticised about treating Taliban injured next to our own,¹⁸ getting on the television quickly (the same day) and alerting those who I knew would support our position, such as the British Red Cross,¹⁹ very quickly nipped the issue in the bud and it was a two-day wonder. As I noted, I was very much slower with helicopters as a result of which it developed a life of its own.

Endnote

Winning a campaign is much more complex in the environment we find ourselves than simply providing care on the battlefield itself; and it is as important to have competent generals, including medical generals, in the UK to complement and support the successful generals in the deployed theatre. ■

Lieutenant General Louis Lillywhite is Surgeon General of the Defence Medical Services.

NOTES

- 1 *Front Line First: The Defence Cost Studies* (DCS), 1994, were a series of studies, the fifteenth of which was DCS 15. There were two subsequent reviews of DCS 15 by the House of Commons Defence Committee 1994-5 Session, *Defence Costs Study Follow-up: Defence Medical Services* (HC 102).
- 2 See for example Trevor N Dupuy, *Attrition: Forecasting Battle Casualties and Equipment Losses in Modern War* (Fairfax, VA: Hero Books, 1990).
- 3 As of 31 August 2009, see <http://www.mod.uk/NR/rdonlyres/B05C3C76-0E9A-45CF-91AF-6CC0DE0A7B7A/0/opherrick_casualtyfatality_31aug09.pdf> for Afghanistan and <http://www.mod.uk/NR/rdonlyres/7E86BD05-D4FF-4677-97AA-CCFBD0FE4E34/0/optelic_31jul09.pdf> for Iraq.
- 4 For a statistical breakdown of UK casualties since the Second World War see <<http://www.britains-smallwars.com>>. The data for Northern Ireland in 1972 includes 103 Regular Army killed, 26 UDR/R Irish and 17 RUC in addition to 223 civilians. Note that reported totals vary depending on whether non-combat deaths are included and for Northern Ireland whether terrorist deaths in mainland Great Britain or Germany are included.
- 5 Sylvia Poggioli, 'Deaths Prompt Italy To Rethink Troops In Afghanistan', *National Public Radio*, 21 September 2009.
- 6 The MoD has frequently been accused in the media and by service charities of allegedly ignoring the mental health of veterans and not taking sufficient care to prevent mental illness in serving troops. This is in spite of the MoD having won the previous 2003 PTSD Class Action, providing regular updates on mental health data, introducing initiatives such as 'third location decompression' in Cyprus, Trauma Risk Management (TRiM), funding veteran pilots in the NHS, providing a helpline and follow-up contact for demobilised Reserves and independent external peer-reviewed papers.
- 7 The MoD is currently verifying its Killed in Action (i.e. before arriving at medical facilities), Died of Wounds (i.e. after arriving at medical facilities) and Case Fatality Rates (a combined measure of death rates) in a manner that allows benchmarking against US data. To provide as close a comparison as possible requires further work to ensure that 'apples are being compared with apples', for example by understanding differences between the nations on what constitutes an operational death rather than a non-combat death.
- 8 *Multiple Claimants v the Ministry of Defence* (2003) EWHC 1134 (QB), available at <<http://www.bailii.org/ew/cases/EWHC/QB/2003/1134.html>>. The report clearly demonstrated that organisations have a duty to keep informed of developments in psychiatric understanding of matters relevant to their industry and employees. The judge concluded that the MoD, and hence other employers, had a duty of care to stay abreast of current developments in relation to work-related stress disorders. Much of the evidence by the claimants was based on US and Israeli experience.
- 9 Commission for Healthcare Audit and Inspection, *Defence Medical Services: A review of the clinical governance of the Defence Medical Services in the UK and overseas*, March 2009. It stated: 'Trauma management in military operations overseas in war zones: An area of great importance for the armed services and their dependants is how injuries in areas of conflict and in war zones, or "hostile areas", are managed. Our review found exceptional practice in this area.'
- 10 John Kay, 'Troops are Waiting in Fear', *The Sun*, 10 January 2008.
- 11 The senior medical committee in NATO is the Chiefs of Medical Services Committee (COMEDS) comprising nations' Surgeon Generals. In Autumn 2008, under 'Any Other Business', they

- accepted in principle the need for the introduction of Clinical Governance into NATO medical services and also agreed to the initiation of a trial of Clinical Governance in southern Afghanistan commencing in summer 2009. This also exemplifies the increasing utility of NATO in the medical arena as well as the benefit from co-ordinating the action of British offices in NATO who are influential in the development of doctrine at Allied Command Transformation and the concurrent implementation of the developing doctrine in Afghanistan.
- 12 The UK deploys a Medical Group to Afghanistan that includes a Regular unit to provide the framework, with either a Regular or Reservist unit to provide the clinical hospital 'core'. The Danes agreed to provide the clinical 'core' for one rotation, in essence acting as a UK Reserve unit.
- 13 Chatham House, 'Health is Global: A UK Government Strategy', 2008.
- 14 See <<http://csis.org/program/global-health-policy-center>>.
- 15 Stephanie Simmonds and Feroz Ferozuddin, 'Support to the Health Sector in Helmand Province Afghanistan', *DfID Health Resource Sector*, 30 December 2008. The authors were accompanied by a senior DH Public Health Physician.
- 16 For example, providing external support can damage local health services both directly, by taking away livelihood, or indirectly by undermining confidence in local providers; it can damage the reputation of the host nation by providing a temporary standard of care that the host nation cannot sustain; it is frequently not coherent with host nation health policy; and it can compromise NGOs.
- 17 DfID, *Eliminating World Poverty: Building our Common Future*, July 2009.
- 18 Matthew Hickley, 'British Troops on Same Ward as Taliban: Soldiers' Fury as Wounded Wake Up Next to the Enemy', *Daily Mail*, 23 January 2009.
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