



**JOINT SERVICES
COMMAND AND STAFF COLLEGE**

DEFENCE RESEARCH PAPER

by

Lt Col Paul A Cain RAMC

**ADVANCED COMMAND AND
STAFF COURSE**

NUMBER 10

SEP 06 - JUL 07

‘Beyond the wounded soldier’

In what ways should the British Military Medical Services contribute to operations during complex emergencies?

DISCLAIMER - The views expressed in this paper are entirely and solely those of the Author and do not necessarily represent those of the UK Ministry of Defence, any other department of Her Britannic Majesty’s Government of the United Kingdom. Further, such views should not be considered as constituting an official endorsement of factual accuracy, opinion, conclusion or recommendation of the UK Ministry of Defence or any other department of Her Britannic Majesty’s Government of the United Kingdom.

Word Count: 11991

ABSTRACT

British military doctrine currently fails to assign a role to the DMS beyond the treatment of wounded servicemen. Despite this there appears to be a need to become engaged with the health sector during the reconstruction of countries affected by complex emergencies. A review of research papers highlighted three areas of concern; the treatment of civilians through hospital care; problematic relationships with humanitarian agencies over impartiality, neutrality and consent; involvement with development. When the security situation is poor the military medical services must be prepared to deliver direct care. At other times the most valuable contributions are through co-ordination with humanitarian agencies and development initiatives in partnership with the government of the involved nations.

INTRODUCTION

In Wilfred Owen's war the 'batter of the guns' resulted in the 'shatter of flying muscles' of the soldiers and men like Captain Noel Chavasse, VC, tended to them in makeshift dressing stations dug into the trenches.¹ Then, as now, the primary role of the Defence Medical Services (DMS) was the treatment of wounded servicemen but there has been considerable change in the nature of conflict since the First World War. Today's battlefield has been characterised by Smith as one that exists amongst the people, and it is a battlefield that is as much conceptual as it is physical, where militaries must adapt to a new paradigm.² The strategic outcome cannot be achieved simply by defeating of the enemy on the battlefield, and militaries must in addition look to establishing the conditions that will prevail over the will of the people. Disappointingly British doctrine for Peace Support Operations devotes only a single sentence to the role of DMS in this endeavour. This is despite the repeated observation that a key constituent of a nation or society that must be addressed in any comprehensive plan is health.³ Medical doctrine adds little merely noting the requirement for civil-military co-ordination.⁴ Clearly the DMS must continue to care for wounded servicemen to the highest possible standards but it is also an era that presents both an opportunity and a challenge that extends beyond this conventional role into capacity building and ultimately conflict resolution.

This new challenge will be explored by initially considering how conflict and the way society understands security has changed since the end of the Cold War as well as looking forward to determine whether these changes are enduring. The idea of human security has particular implications for military forces in that it alters both the reason for intervening and the endstate. Equally the health agenda has been increasingly promoted by organisations such as the United Nations (UN) and it is now regarded as a key component of future development.⁵ These two themes are interconnected as the health of populations will be adversely affected during complex emergencies in which the British military intervenes. In delivering healthcare to this population the military has certain responsibilities under international law but there may be substantial benefit in going beyond basic obligations in order to improve stability. It is not, however, simply a matter of the military resolving the problem; they do not have the capacity and nor are their ends necessarily the same as other actors such as the government of the nation involved or

¹ Captain Noel Chavasse is one of only three men awarded the VC and Bar, two of them were doctors serving in the British Army.

² Smith R, *The Utility of Force* (London: Penguin Books, 2006), p.1-26.

³ Joint Doctrine and Concepts Centre, *The Military Contribution to Peace Support Operations*, JWP3-50 (Shrivenham: JDCC, 2004).

⁴ Joint Doctrine and Concepts Centre, *Joint Medical Doctrine*, JWP4-03 (Shrivenham: JDCC, n.d.).

⁵ Millenium development Goals [online]. Available from: <http://www.un.org/millenniumgoals> [Accessed on 13 May 2007].

humanitarian organisations. In reality no one organisation, military or civilian, can meet all the demands all of the time.

In the particular case of the DMS it will be argued that this additional demand should be met by much greater engagement with the restoration of the health sector in order to improve the health of populations affected by conflict. Ultimately this will help deliver a successful endstate as this constitutes a significant component of a properly functioning post conflict society. In truth the DMS have already widened their role. The extent to which this is happening, the degree of success and the implications will be established through a systematic review of the healthcare related literature. Comparison with the experience of other military medical forces and the tension experienced with humanitarian agencies will also be considered before establishing the way forward - a combination of a limited amount of direct patient care and greater involvement in development. Both of these will need responses which require co-ordination with others. In the final chapter a new conceptual model is proposed that draws together these strands in a more coherent way than currently exists.

Health is the common denominator that strongly links the DMS with the humanitarian system but the term 'humanitarian' means different things to different people and in order to establish a baseline for discussion two definitions are used. The term 'humanitarian organisations' is used to include all those International Organisations (IO), Other Government Departments (OGD) and Non-governmental Agencies (NGO) who broadly ascribe to the principles set out in the Code of Conduct established by the International Committee of the Red Cross.⁶ It is accepted that this is a diverse group but it is a starting point. The role of the military is described as humanitarian assistance and encompasses 'support provided to humanitarian and development agencies, in an insecure environment, by a deployed force whose primary mission is not the provision of humanitarian aid'.⁷ This paper will not consider the role of the military or the DMS in the relief of humanitarian disasters in times of peace as their use in these circumstances is well covered by JWP3-52 and the recently updated "Oslo Guidelines".⁸

CHANGING NATURE OF WAR

The principles of sovereignty, equality between states and non-intervention of one state in the internal affairs of another state, date back to 1648 and the Treaty of Westphalia. These

⁶ The Sphere Project, Humanitarian Charter and Minimum Standards in Disaster Response (Geneva: The Sphere Project, 2004), p.315-24.

⁷ Joint Doctrine and Concepts Centre, *JWP 3-50*, op. cit., p.G-4.

⁸ Office for the Commissioner of Humanitarian Affairs, *Guidelines on the Use of Military and Civil Defence Assets in Disaster Relief - "Oslo Guidelines"* (New York, UN, 2006), p.9.

principles have helped govern the way states behave for centuries and it is not until the fall of the Berlin Wall in 1989 and the later formal announcement of Presidents Bush and Yeltsin of the end of the Cold War that there was any real change. Until this time the relationship between the two superpowers dominated world politics and the focus of the military element of hard power had been each other. Even when they did intervene in other countries, it amounted to war by proxy in which each sought to support nations sympathetic to their own cause. Human rights and any humanitarian agenda of the time were subordinate to this purpose and the inaction of the UN Security Council was a graphic illustration of this. The split in the P5, along cold war lines saw the repeated veto of resolutions that might have led to humanitarian intervention.

After the end of the Cold War the last decade of the 20th century saw considerable expansion of UN intervention. The first half of the 1990s was characterised by intervention under Chapter VI of the UN Charter; of unarmed or lightly armed troops involved only in observation and peacekeeping. Military forces, in the main, provided security, although there were exceptions such as the British intervention in Rwanda, and support to the humanitarian agencies in the delivery of aid. The difficulties encountered in these situations limited success and brought about a shift away from purely delivering humanitarian relief towards conflict resolution and post conflict reconstruction. With it came an increased willingness to use force, under Chapter VII, and to involve organisations outside the UN, including NATO. It is not that the humanitarian response was ignored; rather it was to be addressed through development and the transformation of dysfunctional societies into stable peaceful states.⁹

This increased demand for peace settlements was met by the excess capacity of the now redundant military deterrent forces.¹⁰ Although this simple and somewhat mechanistic explanation has its place it does not fully explain the move towards intervention on humanitarian grounds; after all, the types of crisis for which interventions were made - civil war, dictatorship, state collapse and famine - are common throughout history. One of the essential features of this new type of crisis was that elements previously considered in isolation were now seen in combination. This was termed a 'complex emergency' and defined as:

'a humanitarian crisis in a country, region or society where there is total or considerable breakdown of authority resulting from internal or external conflict and which requires an international response that goes beyond the mandate or capacity of any single agency and/or the ongoing United Nations country program'.¹¹

⁹ Duffield M, *Global Governance and the New Wars* (London: Zed Books, 2001), p.11-2

¹⁰ Baylis J, Wirtz J, Gray CS and Cohen E, *Strategy in the Contemporary World* (Oxford: Oxford University Press, 2007), p.314.

¹¹ OCHA, *Civil-military Relationship in Complex Emergencies* (New York: UN, 2004), p.5.

These complex emergencies were typically characterized by violence and loss of life, displacement of people and widespread damage to societies and economies and infrastructure. Common to all these are a humanitarian disaster on which the members of the Security Council could agree action once freed of their Cold War political prejudices. It was not only the Security Council that responded to events as extensive media coverage of events such as the Serbian and Rwandan massacres served only to increase public pressure on outside governments to act.¹²

The Westphalian notion of state security was being weakened and in its place a new concept of security was being proposed, one that concerned 'people's sovereignty rather than the sovereign's sovereignty'.¹³ This was termed human security and at its heart was the concept that peace was much more than the absence of war.¹⁴ The Human Development Report subdivided human security into seven categories of security; economic, food, health, environmental, personal, community and political.¹⁵ Health had now become one aspect of security that needed to be addressed if wider security issues were to be resolved. The traditional view of security remained valid but the challenge of a new idea inevitably caused tension and there was a need to reconcile these two approaches. That mechanism was delivered with the findings of the international Commission on Intervention and State Sovereignty's (ICISS) report on the 'Responsibility to Protect'.¹⁶ The basic principle is that the primary responsibility of a state is the protection of its people and where a population is suffering serious harm and the state is unwilling or unable to prevent it, the principle of non-intervention gives way to the international 'Responsibility to Protect'.

Two particular principles relevant to the health and security debate stand out from the report, the first being that the objective is the protection of a population, not the defeat of a state. Clearly this is a complex task but one in which health, ill health and healthcare have a bearing. The Geneva Convention already contains provision for the maintenance of hospital and medical services in an occupied country, but the responsibility to protect implies more than just maintenance. There is a requirement to deliver a higher standard than currently exists and therefore there needs to be much greater emphasis on the capability to manage the health of a population. This does not necessarily mean that the DMS must be able to deliver the required healthcare but they must be capable of ensuring that it happens in conjunction with other agencies. This leads directly to the second principle of interest; there must be maximum possible coordination with humanitarian organizations and in this area, the record to date, has not been good.

¹² Roberts A, *Humanitarian Action in War* (Oxford: Oxford University Press, 1996), p.16.

¹³ Annan K, 'Two Concepts of Sovereignty', *The Economist*, 352, (18 Sep 1999), p.49-50.

¹⁴ Donini A, Minear L, Smillie I, van Baarda T and Welch AC, *Mapping the Security Environment: Understanding the Perceptions of Local Communities, Peace Support Operations and Assistance Agencies* (Medford: Feinstein International Famine Center, 2005), p.20.

¹⁵ UN, *Human Development Report* (New York: UN, 1994).

¹⁶ ICISS, *The Responsibility to Protect* (Ottawa: International Development Research Centre, 2001)

The humanitarian community had grown used to the military delivering security and logistical support, but then both the military and the UN were also using the term humanitarian, and were using it to mean something different. Seybolt terms this military humanitarian approach as 'not humanitarian in character but it can be humanitarian in nature'.¹⁷ Tensions between the two approaches, humanitarian and military, were obvious with both sides criticising each others' effectiveness. Humanitarian organisations, while respecting the security and logistics capability of the military heavily criticised their competence in the areas of technical appropriateness, inflexible approach and high cost.¹⁸ The military view of the diversity and seemingly unplanned humanitarian efforts is perhaps best summarised by the rather unhelpfully titled article, 'Herding Cats, Overcoming Obstacles in Civil-Military Operations'.¹⁹

At the heart of this difficulty was something much more fundamental than operational differences. British doctrine articulates the issue as the problematic relationship between consent, the use of force and impartiality. Many humanitarians believed that their principles of neutrality, impartiality and independence were inviolate. Whilst both sides understood the concept of neutrality the same was not true of the interconnected principles of impartiality and independence. The military were impartial with respect to the mandate and may be partial in their actions against one party or the other in order to resolve the situation. Humanitarian organisations applied the term in respect of the absolute humanitarian needs of those they sought to assist and delivered relief to those in greatest need regardless of their political allegiance. Impartiality is therefore highly subjective.²⁰ The independence of humanitarian organisations can also be a problem for the military who are focused on the endstate of a mission and cannot understand why all those involved do not necessarily have the same approach or endstate in mind. The ability to apply these principles freely leads to the concept of humanitarian space and is central to many humanitarian agencies perceived ability to deliver assistance. It is both a geographical and psychological space in which the operating principles of neutrality and impartiality are respected and a clear distinction is made with the military.²¹

The situation in Afghanistan particularly, has brought the issue into the public arena initially with Colin Powell's speech in October 2001 when he referred to NGOs as a 'force multiplier' and an 'important part of our combat team' and then again in 2004 when Andrew Natsios, head of the

¹⁷ Seybolt T, *Humanitarian Military Intervention: The Conditions for Success and Failure* (Oxford: Oxford University Press, 2007), p.259.

¹⁸ Slim H, 'The Stretcher and the Drum: Civil-Military Relations in Peace Support Operations', in Ginifer, Jeremy (ed.), *Beyond the Emergency: Development within UN Peace Missions* (Portland: Frank Cass, 1997), p.123-40.

¹⁹ Eisenhower JH and Marks E, 'Herding Cats; Overcoming Obstacles in Civil-Military Operations', *Joint Forces Quarterly*, Summer 1999, p.86-90.

²⁰ Joint Doctrine and Concepts Centre, *JWP 3-50*, op. cit., p.B-5.

²¹ OSHA, *Guidelines on the Use of Military and Civil Defence Assets to Support United Nations Humanitarian Activities in Complex Emergencies* (New York: UN, 2003), p.3. out of 21

US Agency for International Development (USAID), said, 'In both Iraq and Afghanistan, USAID has stood on the front lines of the most important battles in the new war'.²² Médecins sans Frontières (MSF) saw this as a direct challenge to their impartiality and repeatedly denounced the coalition's attempts to deliver humanitarian aid that furthered their political aims by attaching conditions such as the supply of information about the Taliban and Al-Qaeda.²³ Weiss argued that 'the sun has set on humanitarian intervention because of the obsession with Afghanistan, Iraq and terrorism post 9/11 meant that strategic considerations would trump humanitarian concerns'.²⁴ Nations would, in future, be more concerned with their own security rather than that of others.

This argument is countered by the suggestion that there is a trend for less stability rather than more in the world and in fact nations will have to continue to consider humanitarian issues. Competition is likely to increase for access to energy supplies at the same time as the availability is set to decrease.²⁵ Global warming threatens to alter patterns of access to water, raise sea levels and create greater extremes of weather. Agriculture will change, and with that access to food, and this will be compounded by greater urbanisation with those areas most challenged by population growth likely to suffer the worst.²⁶ Either way there will be potential for competition over resources and therefore want and instability. In developing countries medical and societal change may help prolong life but in truth medical advances have primarily benefited the West. Rather it is the fact that high birth rates cause the most profound effect and the growing population in developing countries continues to put pressure on all aspects of the infrastructure, including health systems.

There does seem to be broad agreement in western literature concerning the trends outlined above but particularly telling is the exposure these to non-western opinions.²⁷ There was general agreement with the key themes but one that stood out as important in non-western thinking was the growing disparity between the rich and the poor. Global inequality may therefore become a more common source of conflict. Poorer regions will become the focus for attention with poverty and poor health being inextricably linked. These threats to human security may only be part of the picture but they do point to the need for the British military to have the capability to deliver humanitarian assistance.

²²Ariana Afghanistan News [online]. Available from: <http://www.ariana.com/ariana/eariana.nsf/allPrintDocs/08CFD686AAA8F86887256F5A004FD42A?OpenDocument> [Accessed on 21 May 2007].

²³ News from Afghanistan [online]. Available from: <http://www.doctorswithoutborders.org/news/afghanistan.cfm> [Accessed on 21 May 2007].

²⁴ Weiss T, *Humanitarian Intervention* (Cambridge: Polity Press, 2007), p.55.

²⁵ Darley J and Skrebowski C, 'Heading for Peak' [online]. Available from: <http://www.energybulletin.net/5266.html> [Accessed on 2 Mar 2007].

²⁶ UN Report on the Urbanisation of the Population [online]. Available from: http://www.un.org/esa/population/publications/WUP2005/2005WUP_FS1.pdf [Accessed on 2 Mar 2007].

²⁷ Development Concepts and Doctrine Centre, *The DCDC Strategic Trends Program 2007-2036* (Shrivenham: Development Concepts and Doctrine Centre, 2007), p.74-6.

If the stabilising factors were stronger than those causing destabilisation a reduction in the amount of conflict in the world might be expected and this, on the face of it, appears to be so. The Human Security Centre reported that there was a 40% drop in violent conflict and an 80% drop in genocide since the end of the Cold War but this comes at the cost of a fourfold increase in the number of peacekeeping and peacemaking operations that are involved in intra-state wars.²⁸ Broader definitions that consider pre-conflict tensions suggest that there has actually been a 25% increase in the amount of global conflicts each decade since the end of the Second World War.²⁹ Any reduction in conflict has therefore come about through the greater commitment of troops paradoxically suggesting an expanding, rather than contracting, role for militaries and their medical services. Any discernible future trends hint at greater conflict, greater threat to human security and greater humanitarian consequences that must be addressed. Inter-state warfare remains a possibility but intra-state warfare is more likely and it is this that we must prepare for in the form of Peace Support Operations.

WAR, HEALTH AND HEALTHCARE

Since 1945 global battle deaths (including civilians) have been decreasing but once the major Cold War conflicts with high death rates are removed the picture is one of persistent diverse small scale conflicts with no discernable trend in battle deaths.³⁰ One trend that is clear, however, is that the proportion of deaths due to intra-state conflicts has risen to account for 93% of all battle deaths.³¹ It is also true to say that the proportion of civilian deaths directly resulting from fighting has risen when compared with those of the military.

The direct deaths, though, only represent the tip of the iceberg with war related disease killing and disabling far more than weaponinjuries. In the Democratic Republic of Congo (1998-2001) battle deaths amounted to 145,000 whilst the total war deaths were in excess of 2.5 million.³² A similar picture was seen in Iraq where the excess deaths were calculated to be 654,965 in the forty months after the 2003 invasion, 2.5 times the expected death rate for that country. This loss of life is tragic and places an increasing burden on the healthcare system. This is compounded by increased ill health in the population as for every battle death in a conflict an additional four years of healthy life is lost, resulting a further burden on the healthcare system.³³

²⁸ Human Security Centre, *Human Security Report 2005* (New York: Oxford university Press, 2005), p.1-11.

²⁹ Heidelberg Institute for International Conflict Research, *Conflict Barometer 2006*, (Heidelberg: HIICR, 2006), p.1.

³⁰ Lacina B and Gleditsch NP, 'Monitoring Trends in Global Combat: A New Dataset of Battle Deaths', *European Journal of Population*, 21(2-3), 2005, p.155.

³¹ *ibid.*, p.157.

³² *ibid.*, p.159.

³³ Ghobarah H, Huth P and Russett B, 'The Postwar Public Health Effects of Civil Conflict', *Social Science and Medicine*, 59, (2004), p.869-884.

The deaths and injuries attributed to conflict are challenging enough for a developed country's health system but often these conflicts take place in the poorest parts of the planet. Even if a country were stable and wealthy before a war the financial costs, disruption of trade and infrastructure damage are likely to make the challenge insurmountable.

Given the enormous death toll accepted as part of conflict it is perhaps surprising that good population health enjoys a particular position in society. The basic entitlement to health is enshrined in the Constitution of the World Health Organisation (WHO) which state that 'the enjoyment of the highest standard of health is one of the fundamental rights of every human being', defining it as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'.³⁴ Whilst this definition tends to maximise the status of health it does not necessarily establish the grounds for its essential quality. Daniels argued that health was a special case because without it individuals are limited in their ability to take advantage of the full range of opportunities available to them in society.³⁵ Later he expanded this theory arguing that that there was a "moral importance of meeting healthcare needs"; clearly without healthcare an individual would be prevented from acting as a fully functioning citizen.³⁶ An expansion of this view of health is one of health as an investment, as without it illness will lower productivity of the workforce and consequently reduce GNP.³⁷ In elevating health to this level the imperative to meet healthcare needs is more compelling.

The right of access to healthcare is held in equally high esteem. Under Article 25 of the Universal Declaration of Human Rights everyone has the right to:

'a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services...motherhood and childhood are entitled to special care and assistance'.³⁸

It is sobering to contrast the cost of a basic health service package of just \$12 a person per year to meet the minimum health requirements with the amount spent on conflict.³⁹

There is, though, only limited evidence that a healthcare system is the main determinant of a healthy population and given the broad definition of health it can be inferred that there is a need

³⁴ WHO, *Constitution of the World Health Organisation*, (WHO: Geneva, 1946).

³⁵ Daniels N, *Just Health Care*, (New York: Cambridge University Press, 1985).

³⁶ Daniels N, 'Justice, Health and Health Care', *American Journal of Bioethics*, 1(2), 2001, p.3-15.

³⁷ Green A, *An introduction to Health Planning in Developing Countries* (Oxford: Oxford University Press, 1999), p.8.

³⁸ Universal Declaration of Human Rights [online]. Available from: <http://www.un.org/Overview/rights.html> [Accessed on 2 Mar 2007].

³⁹ UNDP, *Human Development Report 2000* (New York: Oxford University Prss, 2000), p.9.

for the equally broad set of interventions. In 1978 the Alma-Ata declaration articulated a new model for healthcare in which health needs are met by a combination of health and social institutions, such as education and sanitation.⁴⁰ This public health driven multi-sectoral approach attempts to address the wider causes of ill health and in doing so seems to place limits on the value of purely medical intervention; for the military the implication might be that there is, in fact, no real role for their medical services outside treating their own forces.

This is far from the truth as the situation in a complex emergency is somewhat removed from the steady state. In a complex emergencies health systems are likely to only function in a limited way and the burden of disease has already been shown to be high. In this instance the health system will require external support to deal with the current crisis, to return to its previous state and ultimately to develop greater capacity. Given that improving health outcomes is dependent on making progress in many areas including economic growth, education, water, social exclusion and gender equality any sector strategy must assess the linkages with health.⁴¹ The military medical system is well placed to discern the link between needs and disease in the community and communicate it up the chain of command in order to assist in the co-ordination of other military effort, such as engineering and logistics. Others, including the UN, other IOs, OGDs and NGOs are almost certain to have a role to play but their input is likely to be curtailed or stopped entirely if the security situation deteriorates during the conflict phase of any crisis.

Two main themes run through the discussion so far. One relates to the changing nature of security and how developments in thinking about human security and the responsibility to protect leads to the requirement to intervene on behalf of the individual. The second concerns the demands to protect health and healthcare as a basic moral duty in the face of increasing demand. If intervention is to occur, then by implication it must be accompanied by the protection, or even enhancement, of health and in certain circumstances only the military medical services can undertake this. Without this there would be a risk that adequate stability would never be achieved. Taken together these two themes suggest that the ability to care for civilians in conflict and the immediate post-conflict environment should be valuable in helping the United Kingdom achieve its objectives.

FOREIGN AND SECURITY POLICY

The Defence White Paper, *Delivering Security in a Changing World*, suggested that the UK would be heavily involved in conflict prevention and stabilisation and that the Defence Vision would

⁴⁰ WHO, *Primary Health Care Alma-Ata 1978, Health for all Series No1* (WHO: Geneva, 1978).

⁴¹ DfID, *From Commitment to Action: Health* (London: DfID, 2005), p.1.

be one of 'A force for good in the world'.⁴² It is difficult to imagine being a 'force for good' and not being concerned with health issues but this is not explicitly included. The incorporation of the humanitarian and rescue tasks into European security policy through the adoption of the Petersburg Tasks in 1992 has increased awareness but they must be met from existing forces.⁴³ It has therefore had little practical effect. Defence policy does have clear links with the United Kingdom's international priorities published by the Foreign and Commonwealth Office (FCO) of which 'promoting sustainable development and poverty reduction underpinned by human rights, democracy, good governance' is one.⁴⁴ By including human rights it also comes close to considering health but again it does not explicitly cover the issue. Health is not ignored entirely as it has been recognised at a strategic level that there is a need to increase the emphasis on investment strengthening the delivery of basic health measures to increase stability. However it is difficult to find tangible proof that this is happening.⁴⁵

The perception is one of health receiving little attention at the FCO or the Ministry of Defence. The Department of Health concentrates principally on provision of healthcare in the UK and has only been involved in the international dimensions of health to a limited extent.⁴⁶ Also there has been no real evidence of conceptual thought about the relationship between health, foreign policy and security policy. Health most certainly contributes to human security and ill health may be a real threat but it is not the central focus of analysis. Lee K and McInnes suggest that this results from the tendency in foreign policy and security studies to place health as low politics and within the domestic realm, whereas it has greater prominence within development studies and is treated as a core goal of social and economic development efforts.⁴⁷

NATO's Comprehensive Political Guidance does make a link with development, suggesting that 'Peace, security and development are more interconnected than ever'.⁴⁸ NATO also points to the increasing significance of stabilisation operations but extends this into the need for military support to post-conflict reconstruction efforts. Whilst again not referring specifically to health, the role of the UN and non-governmental organisations is acknowledged, as is the need for close

⁴² Ministry of Defence, *Delivering Security in a Changing World, Cm 6041-I* (London: The Stationary Office, 2003), p.11.

⁴³ Petersburg Declaration [online]. Available from: <http://www.weu.int/documents/920619peten.pdf> [Accessed 21 May 2007].

⁴⁴ The UK's International Priorities [online]. Available from: <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029393465> [Accessed 23 Feb 2007].

⁴⁵ Strategy Unit, *Investing in Prevention. An International Strategy to Manage Risks of Instability and Improve Crisis Response* (London: Strategy Unit, 2005), p.81

⁴⁶ Rushton S and McInnes C, *UK Policy and Global Health Challenges: Security, Development and Infectious Disease* (Chatam Royal Institute of International Affairs, 2006), p.2.

⁴⁷ Lee K and McInnes C, *Health, Foreign Policy and Security* (London: The Nuffield Trust, 2003), p.44.

⁴⁸ Comprehensive Political Guidance [online]. <http://www.nato.int/docu/basicxt/b061129e.htm> [Accessed 23 Feb 2007].

cooperation and coordination, among all elements of the international response. Importantly, NATO notes that there is a need to support stabilisation and reconstruction efforts in all phases of a crisis even when conditions in the theatre of operations prevent other actors carrying out their tasks.

International Organisations, including the UN and the WHO have perhaps been at the forefront of acknowledging the link between healthcare and democracy. The Millennium Project makes the powerful statement that, 'the health system as a core social institution, part of the very fabric of social and civic life, has enormous potential to contribute to democratic development'.⁴⁹ Despite this it is not possible to make an absolute linear connection between health and security in policy although there is sufficient evidence of intent to make the deduction that it must be properly considered in meeting policy.

The healthcare component of any UK security response will fall primarily to the DMS. In the Defence Costs Study, *Front Line First*, published in 1994, two out of the three military hospitals were closed with the aim of concentrating defence medical resources on the care of the wounded. This seemed reasonable but also contained in the report was a general shift of manpower away from support services, including the medical services, to the combat units. As a result the DMS was left undermanned with their capability to care for the wounded soldier severely impaired.⁵⁰ They have never fully recovered from this and in having to ensure the primary task of delivering medical support to soldiers, sailors and airmen on operations there has been little spare capacity to develop new doctrine or capabilities. To meet these new challenges von Bertele suggests that care will normally be delivered to civilians in partnership with the indigenous medical system and NGOs in a way that will lead to restoration of self-sufficiency.⁵¹ This is not an insignificant task and the Executive Committee of the Army Board have realised that although capacity building is presently conducted from within current resources it may be too important to continue with this approach.⁵² Resources are always constrained and if the DMS is to develop along these lines it must be absolutely clear about what is effective and what is not. The next chapter examines this question.

⁴⁹ Rosenfield et al, *Who's got the Power? Transforming Health Systems for Women and Children* (London: Earthscan Publications, 2005), p.11.

⁵⁰ Defence Committee, *The Strategic Defence Review: Defence Medical Services, Seventh Report* (London: The Stationary Office, 1999), p.v.

⁵¹ von Bertele M, 'Medical Support to Civilian Populations on Deployed Military Operations: the UK Approach', *ADF Health*, 7, 200, p.57.

⁵² Executive Committee of the Army Board, *Towards an Army 2025*, 24 Nov 06.

SYSTEMATIC REVIEW OF RESEARCH

In order to better quantify the extent and effectiveness of recent British military medical involvement in the health sector of those countries involved in conflict an analysis of peer reviewed journals was undertaken. Papers were identified through a search of the electronic Medline database accessed through the National Library of Medicine and using the search terms 'humanitarian', 'British', 'navy', 'army' and 'air force'.⁵³ The search was limited to conflicts involving the British military and papers published after 1989, as this had already been identified as the beginning of an era in which military operations changed. The Journal of the Royal Army Medical Corps was found to be the most commonly used publication and that was further hand searched. Arguably this might generate bias by excluding other journals from hand searching but given that most contemporary conflict takes place within the sphere of influence of the Army the degree of bias is likely to be small. Systematic review methodology, modified for the presence of quantitative research, was used to narrow the dataset.⁵⁴ The final inclusion criteria were primary source unduplicated research undertaken into medical effects during conflict; purely humanitarian activities were excluded as were review articles.

Post operational reports might also have provided an insight into activities but they tended to mainly deal with process rather than measure the effectiveness of an intervention. To a lesser extent this is also true of the current generation of DMS research and one general finding is that there is a need to improve the understanding of effectiveness and not accept measurements of the quantity of interventions as a surrogate for measures of effectiveness.

Action	Findings
Afghanistan - Bricknell.⁵⁵	
ISAF IX, under the command of HQ ARRC, increased engagement of the Afghan health sector, including the Afghan National Security Forces (ANSF). This consisted of liaison and situational awareness, facilitation of resources, training and mentoring, and direct patient care.	Intervention focused on development with extensive use of WHO and ICRC training materials. Funding is through the World Bank, EU and USAID with service delivery contracted to NGOs and facilitation between stakeholders by the military. The treatment of Afghan nationals by military medical personnel has been controversial as it compromised 'humanitarian space'. Improved ANSF medical support enhanced SSR.
Iraq - Heller.⁵⁶	
2% of the total admissions and 19% of those to ITU in 202 Field Hospital during the first four weeks of Op	There was unplanned use of resources needed for the mission. Additional equipment and trained manpower

⁵³ PubMed [online]. Available from: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed> [Accessed on 29 Nov 2006].

⁵⁴ For a full description of the methodology see; Khan KS, Riet G, Glanville J, Sowden AJ and Kleijnen J, *Undertaking Systematic Reviews of Research on Effectiveness: CRD's Guidance for those Carrying out or Commissioning Reviews* (York: NHS Centre for Reviews and Dissemination, 2001).

⁵⁵ Bricknell M, *International Approaches to Medical Support on NATO operations in Afghanistan, presentation to the Combat Casualty Care Conference*, 8 Mar 2007, London, p1-14. Accepted for publication in the *J R Army Med Corps*.

⁵⁶ Heller D, 'Child Patients in a Field Hospital During the 2003 Gulf Conflict' *J R Army Med Corps*, 151, 2004, p.41-3.

TELIC were local children. 14% of operations were conducted on children.	for the treatment of children was required. Co-ordination of evacuation with the ICRC prevented overly long inpatient stays. Local health services were unable to cope with the complexities of definitive care.
Iraq - Ryan et al.⁵⁷	
Early needs assessment highlighted a failing maternity system and UK based civilians deployed to Iraq to deliver training in the management of obstetric emergencies at a British military hospital. Links with a charity allowed the delivery of telemedicine equipment.	Initial courses identified candidates for instructor training which was delivered on subsequent courses. Sustainable changes were made to maternal healthcare in southern Iraq. Telemedicine further enhanced medical relief and encouraged development.
Iraq - Rew et al.⁵⁸	
After the combat phase patients were almost entirely composed of Iraqi nationals who were unable to secure local hospital admission. Further evacuation of these patients was initially not possible as local facilities were inadequate and thus the military hospital had to act in a base hospital capacity for these patients.	Paediatric anaesthetic equipment was lacking and whilst local sourcing was possible it removed it from the local market. Specialist teams (burns and plastics) contributed to the treatment of civilians as local facilities were unable to treat burns. A Czech military hospital was set up in Basrah to treat Iraqi patients.
Sierra Leone - Fraser.⁵⁹	
Medical support that was beyond the stated mission was provided to the Sierra Leone Army (SLA) medical services.	There was success in the immediate treatment of disease but this was hampered by cultural differences. Assistance in restructuring the SLA medical services was needed but was beyond the resources of the unit as it had not deployed with that intent.
Bosnia - Kenward et al.⁶⁰	
52.1% of casualties admitted to the A&E department in a military facility were Bosnian, compared with 43.8% who were military. Patients under 13 were treated despite a policy not to treat those under 13.	The impact on the wider population was questioned as dependency on military facilities was created. There was an unresourced requirement to treat children that potentially compromised the mission of the facility.
Kosovo - Hodgetts et al.⁶¹	
During deployment of a military A&E team 21.5% of patients seen were from the local population. The University Hospital of Prestina Emergency Department was remodelled along UK lines.	Military driven development project supported by DfID and using MSF pharmaceutical guidance. Training was delivered by military staff in conjunction with NGO staff.
Kosovo - Parker.⁶²	
59% of surgical operations conducted over an 8 month period were for local people.	Military weapons caused increasing numbers of civilian casualties compared with earlier conflicts. Breakdown of the local health services resulted in patients attending military facilities.
Rwanda - Hawley.⁶³	
The deployment of British Contingent (BRITCON) to United Nations Force in Rwanda (UNAMIR) included a medical element which reported the successful humanitarian nature of the mission. The military	Despite the 'humanitarian' nature of the mission there were political aspects to the aim of managing the movement of populations. Co-ordination with the 118 NGO agencies was complex and there was reluctance

⁵⁷ Ryan JM, MacNab C, Mathieson A and McCabe N, 'MOET in Iraq: enabling Iraqi doctors to develop a teaching model for obstetric emergencies and trauma', *The Obstetrician & Gynaecologist*, 6(4), 2004, p.227-31.

⁵⁸ Rew DA, Clasper J and Kerr G, 'Surgical Workload From An Integrated UK Field Hospital During The 2003 Gulf Conflict', *J R Army Med Corps*, 150, 2004, p.99-106.

⁵⁹ Fraser N, 'An RMO in Sierra Leone', *J R Army Med Corps*, 146(3), 2000, p.253-5.

⁶⁰ Kenward G, Jain TN and Nicholson K, 'Mission creep: an analysis of accident and emergency room activity in a military facility in Bosnia-Herzegovina', *J R Army Med Corps*, 150, 2004, p.20-3.

⁶¹ Hodgetts TJ, Kenward G and Masud S, 'Lessons from the first operational deployment of emergency medicine', *J R Army Med Corps*, 146, 2000, p.134-42.

⁶² Parker P, 'Kosovo 1999 - a surgical template for modern conflict', *J R Army Med Corps*, 146(3), 2000, p.199-203

⁶³ Hawley A, 'Rwanda 1994: a study of medical support in military humanitarian operations', *J R Army Med Corps*, 143(2), 1997, p.75-82.

response was principally concerned with the initial disaster response and delivered 95,453 vaccinations and 132,605 treatments.	of some NGOs to accept military humanitarianism. The decision to treat or not and the use of contextually appropriate therapies raised ethical concerns.
Bosnia - Thornton et al.⁶⁴	
Needs assessment suggested that primary healthcare in rural communities was the most pressing requirement. WHO primary care packs were funded by the ODA and were used to treat 1587 patients in 3 clinics over a 6 month period.	Military conducted much of the data gathering on behalf of the WHO. Co-ordination with MSF defined pharmaceutical needs. Whilst this was said to be impartial the ODA money was committed in time for the elections and there was therefore a political dimension.
Iraq - Miller et al.⁶⁵	
Service medical teams were involved in the screening and reception of displaced Kurds in the first UN Camp in Iraq in 1991. 12,000 displaced persons entered the camp in the first 10 days; 19.5% were under 5 years of age and a quarter had a significant medical problem.	Rapid deployment enabled early determination of the medical extent of the disaster to be undertaken. A high degree of cooperation between military and civilian medical and relief teams was reported.

Table 1. Outcome of British military medical intervention in conflicts 1989-2006.

Table 1 presents an extraction of the key findings from the studies identified. Analysis of the findings suggests that these can be grouped under three main categories, the direct treatment of civilians, relationships with humanitarian organisations and health system regeneration and capacity building. Each of these is considered below. The conceptual model that follows depicts the role of the military medical services and their relationship with other actors, throughout a complex emergency, and is heavily shaped by this analysis which, in turn, has been guided by the earlier chapters.

The British military appears to be poorly placed to deliver direct care to increasing numbers of civilian wounded and sick caused by weapons and the inability of their own health system to care for them. Nowhere is this more apparent than in the treatment of sick children. Two papers highlighted this requirement and Kenward et al specifically noted that this was against policy.⁶⁶ Further treatment was often undertaken without adequate equipment or properly trained personnel although the use of reserve personnel did provide additional skills. In summary the impression is one of *ad hoc* rather than planned care. Given the requirements of the Geneva Convention this is perhaps a surprising finding but medical rules of engagement define the population that is entitled to treatment and are likely to change depending on the resources deployed during any particular phase of an operation.⁶⁷ Even then any treatment is likely to be restricted to life or limb threatening conditions. The logic behind this practice is that once admitted, it becomes difficult to return patients to their own system, either because it simply does not have the capacity or because the

⁶⁴ Thornton R, Cordell RF, Edmonds KE. 'Humanitarian aid operations in Republica Srpska during Operation Resolute 2', *J R Army Med Corps*, 143(3),1997, p.141-5.

⁶⁵ Miller AR and Kershaw CR, 'Initial medical reception, intervention and survey work in combined military and civilian humanitarian aid: operation "Safe Haven", northern Iraq 1991', *Medicine and War*, 9(1), 1993, p.24-32.

⁶⁶ Kenward G, Jain TN and Nicholson K, op. cit., p.20.

⁶⁷ HodgettsT, Mozumder A, Mahoney P and McLennan J, Defence Medical Services Support to Civilians on Operations, (Birmingham: DMETA, 2005), p.21.

treatment regime is more advanced than is available locally. In addition, limiting the requirement to treat civilian patients reduces the equipment and logistic burden and enables facilities to be tailored to the military's most pressing need, the treatment of battle casualties. Given the changing emphasis of military operations this no longer seems to be an adequate response and this deduction is reinforced by the experience of the coalition forces in southern Iraq having to deploy an additional field hospital to meet the demand from civilian patients.⁶⁸

This policy leads to conflicting demands; to do as much as clinically possible for civilian patients and at the same time recognising that it is not possible to treat everyone. It also poses ethical challenges for clinicians who have to hand over patients to local facilities that do not meet the same clinical standards as their own military facilities and may not have the resources for continued treatment.⁶⁹ This increases the importance of working with humanitarian organisations that may have a better understanding of local infrastructure and practice and may be better placed to meet the demand. The greatest challenge to that is the security situation, in that humanitarian organisations may not always be able to operate freely. MSF are widely regarded as one of the most determined of the humanitarian agencies and had operated in Afghanistan since 1980. However the killing of five of their staff in 2004 following the death of thirty other humanitarian workers in the two previous years caused them to withdraw stating that 'humanitarian assistance is only possible when armed actors respect the safety of humanitarian workers'.⁷⁰ Clearly it is nearly impossible for humanitarian agencies to operate during actual war fighting but the difficulty of ensuring their security in modern conflict has meant that they are unable to operate where they are needed for increasingly longer periods of time. This gap needs to be filled and the DMS must improve its capacity to care for civilians if the aims of post conflict recovery are to be met.

This will certainly come at a cost in equipment and personnel and these will need to be reconfigured to meet the altered spectrum of clinical cases. But this will need more than simply deploying with additional medical equipment and different specialists. Evidence from the US Army Medical Services operating in Afghanistan suggests that there is a deeper systemic problem with the western model of healthcare when applied to an indigenous population. After measuring their own effectiveness they concluded that 73% of patients received treatment that was not necessary, unlikely to cure them or was merely supportive.⁷¹ Clearly there is a need to deliver treatment that is appropriate to the situation. Hawley also discusses this in the context of the treatment of tuberculosis. In that instance the decision was made not to treat as it would not have been possible to complete the course and cure the illness due to the duration of the mission but this

⁶⁸ Chmátal P, Bohonk M, Dobiáková M, Haek R and Černohous M, 'A Humanitarian Mission in Southern Iraq - Utilization of the 7th Field Hospital of the Army of the Czech Republic', *Mil Med*, 170(6), 2005, p.473-5.

⁶⁹ von Bertele M, op. cit., p.58.

⁷⁰ News from Afghanistan [online]. Accessed from <http://www.doctorswithoutborders.org/news/afghanistan.cfm> [Accessed on 29 Nov 2006].

⁷¹ Beitler AL, Junnila JL and Meyer JH, 'Humanitarian assistance in Afghanistan: a prospective evaluation of clinical effectiveness', *Mil Med*, 171(9), 2006, p.889-93.

seemingly rational decision has a wider ramification. Medical staff are highly skilled and tend to consider the needs of the individual first and may find the concept of being powerless to act troubling. Staff must be appropriately trained with respect to the context of the mission. This is clear in NATO doctrine and this has recently been reinforced by a review of DMS performance on operations.⁷²

A further problem inherent in the western practice of healthcare is the credence given to hospital based healthcare, and in particular to surgical treatment. This is very apparent in the studies which, apart from the early 1990's, are heavily weighted towards hospital care and the appropriateness of this has frequently been questioned by the humanitarian community. The Sphere Project, an alliance of over 400 organisations in 80 countries, recently updated their authoritative handbook 'Minimum Standards in Disaster Response' in which they suggest that 'referral services and hospital-based care, while important, have a smaller public health impact than primary healthcare interventions'.⁷³ This contention is supported by the experience of a 2005 deployment of a US Army hospital to the earthquake in Pakistan, where more than 20,000 patients were treated. Ninety percent were primary care visits and it was concluded that the wrong type of unit was deployed.⁷⁴ Primary care assets will always deploy to care for troops but as Fraser discovered in Sierra Leone anything beyond this must be considered in the planning before deployment.⁷⁵ Ideally, primary care resources would then be employed on the basis of a public health needs assessment of the affected population. However military capability in this area is currently weak and there needs to be greater emphasis on this in training.⁷⁶ Despite these concerns DMS research continues to focus on hospital care.⁷⁷ This remains a critical gap.

Fortunately not all the incentives for this task are negative as the recruitment and retention of military medical staff has been shown to be positively influenced by involvement in humanitarian tasks.⁷⁸ Whilst this alone does not justify increasing the capability to treat civilians the increased recruitment would be welcome in an undermanned DMS and better retention may help defray costs. Changes in equipment might also be relatively inexpensive as the increased numbers of civilian patients will be compensated for by a reduction in the number of military patients.

⁷² Hodgetts T, Mozumder A, Mahoney P and McLennan J, op. cit., p.80-1.

⁷³ The Sphere Project, op. cit., p.255.

⁷⁴ Fernald, JP and Clawson EA, 'The Mobile Army Surgical Hospital Humanitarian Assistance Mission in Pakistan: The Primary Care Experience', *Mil Med*, 172(5), 2007, p.471-7.

⁷⁵ Fraser, op. cit., p.255.

⁷⁶ Mozumder AK, 'Public Health and Military Humanitarian Assistance: An examination of its effectiveness in complex humanitarian emergencies. Could this be improved?' (Royal Society for Apothecaries, 2004).

⁷⁷ Hodgetts T, Mozumder A, Mahoney P and McLennan J, op. cit., p.9.

⁷⁸ Drifmeyer J, Llewellyn C and Tarantino D, 'Humanitarian service and recruitment and retention of uniformed services medical personnel', *Mil Med*, 169(5), 2004, p.358-60.

Another major incentive for treating civilian patients comes under the category of winning 'hearts and minds' and programs that treat sick and injured civilians generate a popular image of the military, both in the country of operations and at home. They may be justified on these grounds alone but there has been little in the way of real analysis of such programs. One comprehensive review of the use of military medicine to win hearts and minds in Vietnam identified several lessons suggesting how it might be done better in the future. Whilst it concluded that there was a role in for military medical action in supporting campaign objectives it was equivocal about the value of direct treatment of patients.⁷⁹ Despite this, the need to deliver some direct care will remain and the DMS must carefully prioritise its responses focusing on the conflict phase when it is compelled to act, and co-ordinating with others when the security situation improves.

There are two principal groups that the military must interface with. The first group are those belonging to the humanitarian system and they will be considered in detail in the next section. The second group comprise of those belonging to the administrative system of the nation in which the military are operating and will be considered in the context of development and capacity building. The basis of the difficult relationship between the humanitarian agencies and the military as a whole has already been described but the evidence collected does not fully support this assertion, at least in the particular case of the DMS. Some problems were encountered and resolved but most authors indicated that a good deal of co-operation occurred in delivering aid. Three potential explanations for this are considered.

Firstly, there is great heterogeneity amongst the humanitarian organisations. These range from large international organisations that are part of the UN or are substantial organisations in their own right, like the International Committee of the Red Cross (ICRC), to much smaller national organisations. They have also been growing rapidly in numbers with the 'humanitarian footprint' almost doubling in the last ten years.⁸⁰ In the main they have a very flat management structure with the bulk of their personnel operating in field support as intervention is a very practical business that relies heavily on the 'hands on' delivery of relief to those in need. Albeit the military structure is more hierarchical, humanitarian field workers are more likely to interface with those elements of the military that are also working directly with the affected population and they have an equally pragmatic approach. In effect they share the humanitarian space but when faced with the immediacy of a tragic life threatening problem they are able, even if only briefly, to work together to resolve it. But if co-operation arises from proximity where does the tension originate? In part the answer may be found in Kennedy's acclaimed 'The Dark Side of Virtue' in which he describes a

⁷⁹ Wilensky RJ, *Military Medicine to Win Hearts and Minds* (Lubbock: Texas Tech University Press, 2004), p.131-44.

⁸⁰ Weiss T, op. cit., p.148.

'fault line between activists and policy makers'.⁸¹ The policy makers sit on the other side of the dividing line from the practitioners, more removed from the day to day needs of the deprived, and the tension described in the first chapter is a reflection of this.

The second explanation lies in the fact that despite stating the opposite in many cases politics dictates the practicalities of humanitarian action and not all espouse the same view on neutrality and impartiality. The Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP) found that 'major humanitarian donors, strategic decisions by all permanent members of the UN Security Council, and local obstruction, discrimination and favouritism by governments and armed groups mean that humanitarian action continues to be skewed'.⁸² Bricknell's findings that much of the NGO funding in Afghanistan is through bilateral or multilateral aid suggests that humanitarian intervention is being dictated by government policy goals as well as need. The association between humanitarian assistance and policy couples the humanitarian approach to the attainment of peace and stability in a mechanism known as integration or coherence.⁸³ This has caused internal difficulties in the humanitarian system but, given that the military acts on the same policy guidelines as part of a comprehensive approach, improved co-operation is perhaps unsurprising. With integration being relatively new, and the politics of the humanitarian/military relationship dating back to at least the Cold War, some of the commentary about their supposedly poor relationship could be attributed to out of date reports of humanitarian attitudes.

The final reason that may account for the relationship being better than expected is that health and ill health represent a special case, although this does not necessarily explain why two parties with a fundamental disagreement should be able to act in concert. This difference can be overcome by altruism, a person's impulse to care about others. It is usually expressed towards those a person identifies with, but extended altruism is more connected to conceptions of 'universal compassion'.⁸⁴ This extended altruism goes beyond traditional group identities and both challenges and extends the boundaries of healthcare. Its embodiment in IOs such as the WHO and humanitarian organisations like MSF, seems obvious but it is also a characteristic of the medical community in general and this helps transcend human differences.⁸⁵ The ability to work together on medical issues has given rise to the term 'technical space' implying an area similar in concept to humanitarian space but one in which there is room for parts of the military to work alongside humanitarian organisations.⁸⁶

⁸¹ Kennedy D, *The Dark Side of Virtue* (Oxford: Princeton University Press, 2005), p.343.

⁸² ALNAP, Review of Humanitarian Action, (London: Overseas Development Institute, 2006), p.5.

⁸³ Duffield M, Macrae J and Curtis D, 'Politics and Humanitarian Aid', *Disasters*, 25(4), 2001, p.271.

⁸⁴ Kavolis V, *Moralizing Cultures* (Lanham: University Press of America, 1993), p.viii.

⁸⁵ MacQueen G and Santa-Barbara J, 'Peace building through health', *BMJ*, 321, 2000, p.294.

⁸⁶ Manenti A, *Health as a Potential Contribution to Peace* (Geneva: World Health Organization, 2001), p.2.

The relationship between the humanitarian community and the military medical community may be better than that with the military in general, but there is little room for complacency. As recently as 2005 Hawley found that a lack of understanding and trust still existed between the two groups.⁸⁷ The myriad of actors with different principles and agendas mean that co-operation, never mind integration or coherence, will be difficult but vital if effectiveness is to be improved. The Inter-Agency Standing Committee Working Group (IASC) suggest that if this cannot be achieved because of different goals then the default will be merely co-existence.⁸⁸ Whilst this should at least avoid duplication of effort and missed opportunities it is an inadequate outcome as in truth those who are in need deserve the efforts focused on them rather than on who will deliver aid. They are far less concerned about who provides aid and more about what is provided.⁸⁹ The military medical services must not bow to humanitarian pressure, neither is more right than the other, they are just different. They must, however, seek a coherent approach with those who share the goals, whilst respecting the values of those who do not, in the hope that at least overlap can be avoided.

The final area of interest is health system regeneration and capacity building. NATO doctrine states that 'medical support must meet standards acceptable to both the participating nations and the receiving country' and treatment must be 'as far as possible equivalent to the normal peacetime standards of the receiving country'.⁹⁰ Clearly the healthcare demands in a failing state in the throes of conflict are massive and the DMS could not hope to meet all the needs, and even if they could the result is likely to be the growth of a culture of dependency as Kenward rightly identified.⁹¹ More appropriate clinical care along with better co-ordination with humanitarian agencies would go some way towards meeting these demands but even so the only way that this could be achieved is the regeneration of indigenous health sector capacity.

The critical path in this endeavour is the process of development as without it regeneration cannot start in a coherent way but like clinical care the dangers inherent in conflict mean that agencies who normally undertake this work are prevented from doing so. This is possibly the area where the DMS can add the most value. Ryan described a clear path from the identification during the combat phase of an obstetric need through to the delivery of training that resulted in sustainable improvement to that part of the health sector in Southern Iraq.⁹² Hodgetts described a

⁸⁷ Hawley A, 'Civilian-Military relationships in Humanitarian Emergencies' (University of Cambridge, 2005).

⁸⁸ IASC, Civil-Military relationships in complex emergencies [online] Available from: [http://www.reliefweb.int/rw/lib.nsf/db900SID/DPAL-62GCWL/\\$FILE/ocha-civmil-28jun.pdf?OpenElement](http://www.reliefweb.int/rw/lib.nsf/db900SID/DPAL-62GCWL/$FILE/ocha-civmil-28jun.pdf?OpenElement) [Accessed 23 Feb 2007].

⁸⁹ Donini A, Minear L, Smillie I, van Baarda T and Welch AC, op. cit., p.53.

⁹⁰ MC 326/2, NATO's Principles and Policies of Operational Medical Support, dated 7 Apr 04.

⁹¹ Kenward G, Jain TN and Nicholson K, op. cit., p.23.

⁹² Ryan JM, MacNab C, Mathieson A and McCabe N, op. cit., p.228.

similar project that resulted in enhancement of the Accident and Emergency system in Kosovo.⁹³ In both these cases a relatively small effort on the part of the military and others resulted in a much larger health benefit for the population. The same conclusions have been drawn from the study of the US Army Medical Services who identified that it would be more effective to shift from short term patient care to longer term capacity building and development.⁹⁴ In practice this can do more than improve the health of the population; secondary effects on security can be demonstrated. Two studies showed the value of developing the medical care for the indigenous forces and in the case of Afghanistan this directly contributed to the Security Sector Reform that was part of the Commander's intent by improving the morale and commitment of the ANSF.⁹⁵ Over time it also reduced the need to treat the ANSF in British facilities allowing a reduction in the deployed medical footprint.

This approach is attractive but it does have dangers since the wrong development projects can be just as inappropriate as the wrong type of clinical care. Past experience suggests that there is more work to do in this area as host nation representatives have in the past been passive participants with little say in the nature of the healthcare projects undertaken.⁹⁶

It is another aspect of Bricknell's paper that gives the better insight into the most effective way forward in this field for the DMS.⁹⁷ In working with the health ministries of Afghanistan we start to see a convergence of approaches that may add up to more than the sum of the parts. Development aid is often bilateral and has been used as an instrument of foreign policy with conditions attached to its receipt, unlike humanitarian aid. This conditionality has in the past been targeted at encouraging economic reform, promoting democracy, securing conflict resolution and improving security but recently this has been seen to be failing and has been superseded by an era of 'post-conditionality'.⁹⁸ What distinguishes this from earlier provision of aid is a move towards multi-agency partnerships based on shared commitments and mutual agreements with the recipient government. These have been shown to be successful in improving service delivery.⁹⁹ With ownership of the development agenda the government becomes the hub around which others must co-ordinate and this implies a reduction in authority for the military and less autonomy for

⁹³ Hodgetts TJ, Kenward G and Masud S, op. cit., p.142.

⁹⁴ Drifmeyer JE and Llewellyn CH, *Measuring the Effectiveness of Department of Defense Humanitarian Effectiveness* (Bethesda: Centre for Disaster and Humanitarian Assistance Medicine, 2003), p.29.

⁹⁵ Bricknell M, op. cit., p.8-9.

⁹⁶ Drifmeyer JE and Llewellyn CH, *Host Nation Participants Perspectives on Military Medical Humanitarian Assistance* (Bethesda: Centre for Disaster and Humanitarian Assistance Medicine, 2003), p.1.

⁹⁷ Bricknell M, op. cit., p.9-11.

⁹⁸ Frerks G, *The use of Peace Conditionalities in Conflict and Post-conflict Settings* (The Hague: Clingendael, 2006), p.5-8.

⁹⁹ DfID, *Partnerships for Poverty Reduction: Rethinking Conditionality, a UK Policy Paper* (London: DfID, 2005), p.iii.

humanitarian agencies. This may not be a bad thing as many of the participants in health related relief work believe that their efforts are more effective than do the recipients ¹⁰⁰

What post-conditional partnerships do offer is a mechanism by which the military medical services may interface with humanitarian agencies. The government is now an intermediary whose own health policy agenda and objectives become the basis for negotiation rather than the sticking points of impartiality, neutrality and independence described above. In practice this has worked extremely well. By late October 2003 the health orientated 'Basrah Province NGO Co-ordinating Committee' had been established in Southern Iraq consisting of local Iraqi, military, IO and NGO personnel. It met weekly, and working to Iraqi priorities considered the establishment of health information systems, co-ordination of rehabilitation efforts through mapping areas of interest and the rationalisation of pharmaceutical supply.¹⁰¹ What is more by following the guidance published by the Department for International Development (DfID) it was able to access some of the £4.6 billion in development funding available from them.¹⁰² The use of this money for 'Quick Impact Projects' demonstrates how the Comprehensive Approach and coherence are bringing results even though the military and DfID differ in philosophy.

At the start of this paper it was noted that JWP 3-50 failed to find a role beyond healthcare for the military medical services. It does, though, state that an endstate is sought with 'a degree of stability at which disengagement can occur without risk of a return to a crisis in the short term or the point at which a number of criteria have been satisfied that indicate that long-term stability is self-sustaining'.¹⁰³ Clearly the medical services could contribute to achieving the endstate with appropriate clinical care and effective co-ordination with humanitarian organisations but most of all by ensuring that they are involved in the development of the health sector early in the conflict. This is modelled in the next chapter.

THE CONCEPTUAL MODEL

Recovery from complex emergencies and natural disasters occurs in phases which begin with the immediate basic needs of the population being met followed by a recovery phase that aims to return the area to its pre-disaster state, or better. Typically the phases are divided into relief, rehabilitation, reconstruction and development. The temporal relationship between these responses was considered by Kirkby et al who found that the reality of the disasters was one in which all the responses are initiated at the start of the disaster as uncoordinated humanitarian aid

¹⁰⁰ Rubin M, Heuvelmans JH, Tomic-Cica A, Birnbaum ML, 'Health-related relief in the former Yugoslavia: needs, demands, and supplies', *Prehospital Disaster Med*, 15(2), 2000, p.1-11.

¹⁰¹ Hodgetts T, Mozumder A, Mahoney P and McLennan J, op. cit., p.45.

¹⁰² DfID, Quick Impact Projects: a Handbook for the Military (London: DfID, n.d.).

¹⁰³ Joint Doctrine and Concepts Centre, *JWP 3-50*, op. cit., p.2-8.

flows rapidly into the area. They then take time to build in effectiveness.¹⁰⁴ This is far from ideal as there is a large amount of spending early in the cycle that quickly brings relief but also creates dependency as was described above. In addition, situational awareness is likely to be poor early in the crisis and the rehabilitation and reconstruction efforts may well be misdirected as a result. Development initiatives will have to compete for funds with rehabilitation and reconstruction projects. These can generate better and more immediate publicity and consequently are likely to be able to secure the greater proportion of available funds. To overcome these shortcomings an ideal recovery cycle would be one in which relief started immediately concurrent with development, allowing immediate needs to be met whilst planning started for future responses. Efforts in the rehabilitation and reconstruction phases could then be more efficiently geared towards rebuilding health sector capacity.

Whilst this research was primarily conducted in relation to natural disasters it is just as applicable to complex emergencies as the conditions are fundamentally the same, although two differences merit further exploration. Firstly complex emergencies tend to have a greater detrimental effect on national institutions, such as the health sector, than natural disasters as they tend to be prolonged.¹⁰⁵ Because of the greater degree of damage the time taken to recover is often longer and the requirement for development is correspondingly greater. The second difference is that the conflict associated with a complex emergency presents a greater threat to the humanitarian space than do the conditions found in other disasters. The effect of this second difference is to generate a period of time when any relief response will be limited and the start of rehabilitation and reconstruction may be delayed. As a result of this the model proposed by Kirkby et al as the ideal response to natural disasters arguably better fits the conditions found in a complex emergency. In order to develop a conceptual model that describes the medical response, and the role of the military in that, it is necessary to merge the findings from the above studies with Kirkby's own work. To achieve this, those responsible for recovery efforts are shown overlaid on the type of effort that contributes to the recovery cycle. This is shown at Figure 1.

¹⁰⁴ Kirkby SJ, O'Keefe P, Frerks G, Kliet T and Convery I, 'A disaster continuum', *Disasters*, 19(4), 1996, p.362-7.

¹⁰⁵ Albala-Bertrand JM, 'Responses to complex humanitarian emergencies and natural disasters: an analytical comparison', *Third World Quarterly*, 21(2), 2000, p.215-27.

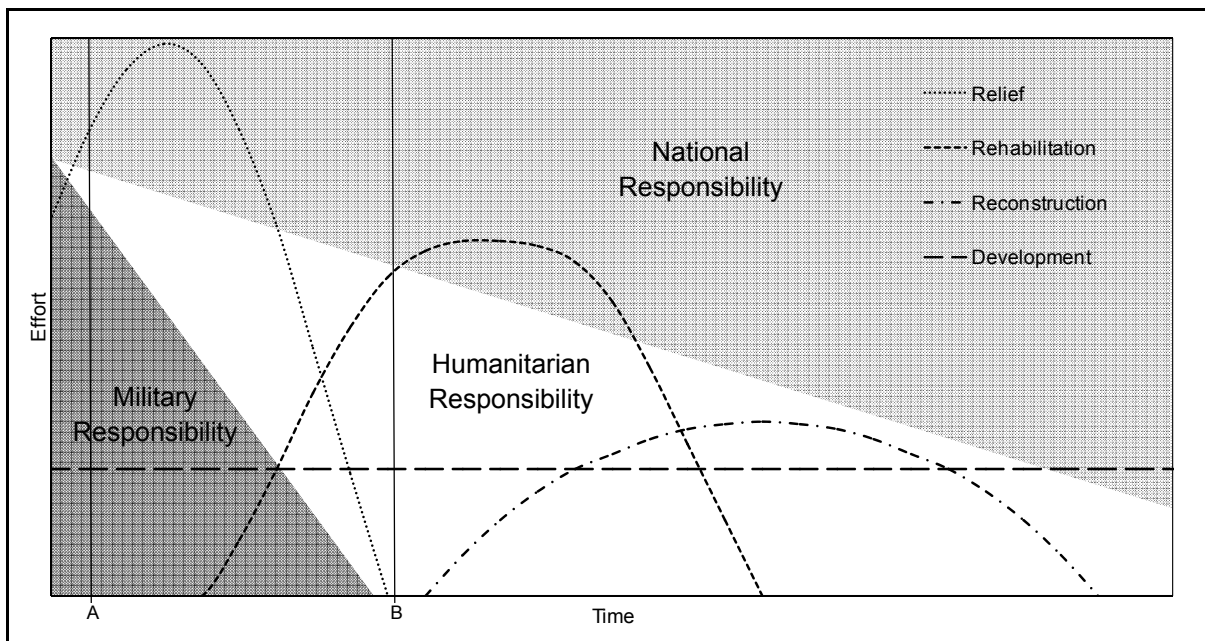


Figure 1. The recovery cycle in complex emergencies.

The change in effort required for each of the types of response are shown by the dashed lines indicating that relief, rehabilitation and reconstruction start and end at different points in time and rise to peak at different levels. A key feature is that development is initiated immediately and continues on throughout the whole process. The shaded areas of the figure show the relative efforts expended by the military (dark shading), humanitarian (no shading) and the affected nation (light shading). The use of the model is best illustrated by selecting a point in time, A, early in the conflict when the security situation remains poor. Both relief and development effort are needed and the response is primarily from the military and the nation with very little from the humanitarian system. Later in the campaign (point B), with the security situation resolved, rehabilitation has started and reconstruction is about to, but in this case the effort has shifted from the military to the humanitarian system in conjunction with the affected nation. By altering the size of the shaded areas different circumstances can be represented. If the affected nation has poor health sector capacity and is only capable of very limited response the lighter shaded area can be reduced or if they fail to develop the necessary capacity over time the slope of the boundary between national and humanitarian effort can be flattened. If the campaign is less successful and security remains poor, as it has done in Iraq, the base of the darker shaded triangle representing the military response may need to be extended further along the x axis depicting an increased need for the military to be involved in rehabilitation and reconstruction.

The model also makes very clear the need for co-operation. At any one time co-operation is needed between two or all three of the groups as well as the sub-groups that constitute these larger groupings. There is also greater clarity about co-ordination over time. In the case of the military there is a time when all recovery activity will cease. This will need to be considered from

the outset with all efforts geared towards sustainable context specific interventions that can be taken forward by the nation or humanitarian organisations. In that way the endstate will be attained.

CONCLUSION

On the 12th January 2007 in a speech entitled 'Our Nations Future - Defence' the Prime Minister, Tony Blair, concluded:

'In truth, this is a hearts and minds battle as much as a military one. Reconstruction and reconciliation, development and governance are every bit as crucial in Iraq or Afghanistan as military might'.¹⁰⁶

Three years earlier an outbreak of measles had threatened the lives of the malnourished children living in Southern Iraq. The military medical services were able to react at a time when security remained problematic and the humanitarian system supplied large quantities of vaccine that neither the military nor the Iraqi government possessed. Several weeks later the recently restored Iraqi health Ministry announced its monitoring had detected few new cases and the outbreak was all but over.¹⁰⁷ This co-ordinated response is a powerful tool.

In the complex emergencies that make up today's wars, and future wars, the need to deliver stability in order to allow disengagement without a return to crisis, will remain. Unchecked injury and disease in the population will prevent this from happening and whilst the provision of proper healthcare may not prevent conflict, it will certainly contribute to its resolution. Today's 'hearts and minds' initiatives may be simple in concept but they are vastly more sophisticated in outlook. They are as much about the population of a nation, and the generations to come, as they are about individuals. They are based on evidence of best practice and strive for effectiveness, making best use of available resources.

It will always be ethically difficult to disregard those suffering and the British military must endeavour to deliver medical care to sick and injured civilians alongside wounded servicemen. It is right to do so, and it could be done better but capacity is small and the problem vast. Even so a change in emphasis from surgical treatment in hospitals to public health and primary care initiatives would improve the response. When the security situation is poor the military medical services may be the only organisation that can achieve this but as the situation improves others

¹⁰⁶ Prime Minister's Speech 12 January 2007, Our Nations Future – Defence [online]. Available from: <http://www.number10.gov.uk/output/Page10735.asp> [Accessed 23 Feb 2007].

¹⁰⁷ UK Medical Group Post Operational Report - Op TELIC 3, 5 May 2004.

will be able to bring their skills to bear. In the case of the humanitarian organisations they are likely to be better able to meet the needs of the population; co-ordination is vital but coherence and integration would be better. For this to happen the military must work with those who feel that this is not a threat to their independence, impartiality or neutrality, and respect those who feel the opposite is true. But the real challenge, and perhaps the greatest prize, lies in the field of development. The DMS must engage with this early as without it recovery will be slow and disjointed. If they manage this they will leave behind a revitalised health sector that helps guard the health and security of all. Surely that is a worthy pursuit.

REFERENCES

Books

ALNAP, Review of Humanitarian Action, (London: Overseas Development Institute, 2006).

Baylis J, Wirtz J, Gray CS and Cohen E, *Strategy in the Contemporary World* (Oxford: Oxford University Press, 2007).

Daniels N, *Just Health Care*, (New York: Cambridge University Press, 1985).

DfID, *From Commitment to Action: Health* (London: DfID, 2005).

DfID, *Partnerships for Poverty Reduction: Rethinking Conditionality, a UK Policy Paper* (London: DfID, 2005).

DfID, *Quick Impact Projects: a Handbook for the Military* (London: DfID, n.d.).

Donini A, Minear L, Smillie I, van Baarda T and Welch AC, *Mapping the Security Environment: Understanding the Perceptions of Local Communities, Peace Support Operations and Assistance Agencies* (Medford: Feinstein International Famine Center, 2005).

Drifmeyer JE and Llewellyn CH, *Host Nation Participants Perspectives on Military Medical Humanitarian Assistance* (Bethesda: Centre for Disaster and Humanitarian Assistance Medicine, 2003).

Drifmeyer JE and Llewellyn CH, *Measuring the Effectiveness of Department of Defense Humanitarian Effectiveness* (Bethesda: Centre for Disaster and Humanitarian Assistance Medicine, 2003).

Duffield M, *Global Governance and the New Wars* (London: Zed Books, 2001).

Frerks G, *The use of Peace Conditionalities in Conflict and Post-conflict Settings* (The Hague: Clingendael, 2006).

Hodgetts T, Mozumder A, Mahoney P and McLennan J, *Defence Medical Services Support to Civilians on Operations*, (Birmingham: DMETA, 2005).

Ginifer, J, *Beyond the Emergency: Development within UN Peace Missions* (Portland: Frank Cass, 1997).

Green A, *An introduction to Health Planning in Developing Countries* (Oxford: Oxford University Press, 1999).

Heidelberg Institute for International Conflict Research, *Conflict Barometer 2006*, (Heidelberg: HIICR, 2006).

Human Security Centre, *Human Security Report 2005* (New York: Oxford university Press, 2005).

ICISS, *The Responsibility to Protect* (Ottawa: International Development Research Centre, 2001).

Kavolis V, *Moralizing Cultures* (Lanham: University Press of America, 1993).

Kennedy D, *The Dark Side of Virtue* (Oxford: Princeton University Press, 2005).

Khan KS, Riet G, Glanville J, Sowden AJ and Kleijnen J, *Undertaking Systematic Reviews of Research on Effectiveness: CRD's Guidance for those Carrying out or Commissioning Reviews* (York: NHS Centre for Reviews and Dissemination, 2001).

Manenti A, *Health as a Potential Contribution to Peace* (Geneva: World Health Organization, 2001).

OCHA, *Civil-military Relationship in Complex Emergencies* (New York: UN, 2004).

OSHA, *Guidelines on the Use of Military and Civil Defence Assets to Support United Nations Humanitarian Activities in Complex Emergencies* (New York: UN, 2003).

Office for the Commissioner of Humanitarian Affairs, *Guidelines on the Use of Military and Civil Defence Assets in Disaster Relief - "Oslo Guidelines"* (New York, UN, 2006).

Roberts A, *Humanitarian Action in War* (Oxford: Oxford University Press, 1996).

Rosenfield et al, *Who's got the Power? Transforming Health Systems for Women and Children* (London: Earthscan Publications, 2005).

Rushton S and McInnes C, *UK Policy and Global Health Challenges: Security, Development and Infectious Disease* (Chatam Royal Institute of International Affairs, 2006).

Seybolt T, *Humanitarian Military Intervention: The Conditions for Success and Failure* (Oxford: Oxford University Press, 2007).

Strategy Unit, *Investing in Prevention. An International Strategy to Manage Risks of Instability and Improve Crisis Response* (London: Strategy Unit, 2005).

The Sphere Project, *Humanitarian Charter and Minimum Standards in Disaster Response* (Geneva: The Sphere Project, 2004).

UN, *Human Development Report* (New York: UN, 1994).

UNDP, *Human Development Report 2000* (New York: Oxford University Press, 2000).

Von Clausewitz C, *On War*, (Princeton, Princeton University Press, 1976).

Weiss T, *Humanitarian Intervention* (Cambridge: Polity Press, 2007), p.55.

Wilensky RJ, *Military Medicine to Win Hearts and Minds* (Lubbock: Texas Tech University Press, 2004).

WHO, *Constitution of the World Health Organisation*, (WHO: Geneva, 1946).

WHO, *Primary Health Care Alma-Ata 1978, Health for all Series No1* (WHO: Geneva, 1978).

Papers

Albala-Bertrand JM, 'Responses to complex humanitarian emergencies and natural disasters: an analytical comparison', *Third World Quarterly*, 21(2), 2000, p.215-27.

Beitler AL, Junnila JL and Meyer JH, 'Humanitarian assistance in Afghanistan: a prospective evaluation of clinical effectiveness', *Mil Med*, 171(9), 2006, p.889-93.

Chmátal P, Bohonk M, Dobiáková M, Haek R and Černohous M, 'A Humanitarian Mission in Southern Iraq - Utilization of the 7th Field Hospital of the Army of the Czech Republic', *Mil Med*, 170(6), 2005, p.473-5.

Daniels N, 'Justice, Health and Health Care', *American Journal of Bioethics*, 1(2), 2001, p.3-15.

- Drifmeyer J, Llewellyn C and Tarantino D, 'Humanitarian service and recruitment and retention of uniformed services medical personnel', *Mil Med*, 169(5), 2004, p.358-60.
- Duffield M, Macrae J and Curtis D, 'Politics and Humanitarian Aid', *Disasters*, 25(4), 2001, p.269-74.
- Eisenhour JH and Marks E, 'Herding Cats; Overcoming Obstacles in Civil-Military Operations', *Joint Forces Quarterly*, Summer 1999, p.86-90.
- Fernald, JP and Clawson EA, 'The Mobile Army Surgical Hospital Humanitarian Assistance Mission in Pakistan: The Primary Care Experience', *Mil Med*, 172(5), 2007, p.471-7.
- Fraser N, 'An RMO in Sierra Leone', *J R Army Med Corps*, 146(3), 2000, p.253-5.
- Ghobarah H, Huth P and Russett B, 'The Postwar Public Health Effects of Civil Conflict', *Social Science and Medicine*, 59, (2004), p.869–884.
- Hawley A, 'Rwanda 1994: a study of medical support in military humanitarian operations', *J R Army Med Corps*, 143(2), 1997, p.75-82.
- Heller D, 'Child Patients in a Field Hospital During the 2003 Gulf Conflict' *J R Army Med Corps*, 151, 2004, p.41-3.
- Hodgetts TJ, Kenward G and Masud S, 'Lessons from the first operational deployment of emergency medicine', *J R Army Med Corps*, 146, 2000, p.134-42.
- Kenward G, Jain TN and Nicholson K, 'Mission creep: an analysis of accident and emergency room activity in a military facility in Bosnia-Herzegovina', *J R Army Med Corps*, 150, 2004, p.20-3.
- Kirkby SJ, O'Keefe P, Frerks G, Kliet T and Convery I, 'A disaster continuum', *Disasters*, 19(4), 1996, p.362-7.
- Lacina B and Gleditsch NP, 'Monitoring Trends in Global Combat: A New Dataset of Battle Deaths', *European Journal of Population*, 21(2–3), 2005, p.145-166.
- Lee K and McInnes C, *Health, Foreign Policy and Security* (London: The Nuffield Trust, 2003).
- MacQueen G and Santa-Barbara J, 'Peace building through health', *BMJ*, 321, 2000, p.293-6.

Miller AR and Kershaw CR, 'Initial medical reception, intervention and survey work in combined military and civilian humanitarian aid: operation "Safe Haven", northern Iraq 1991', *Medicine and War*, 9(1), 1993, p.24-32.

Parker P, 'Kosovo 1999 - a surgical template for modern conflict', *J R Army Med Corps*, 146(3), 2000, p.199-203

Rubin M, Heuvelmans JH, Tomic-Cica A, Birnbaum ML, 'Health-related relief in the former Yugoslavia: needs, demands, and supplies', *Prehospital Disaster Med*, 15(2), 2000, p.1-11.

Rew DA, Clasper J and Kerr G, 'Surgical Workload From An Integrated UK Field Hospital During The 2003 Gulf Conflict', *J R Army Med Corps*, 150, 2004, p.99-106.

Ryan JM, MacNab C, Mathieson A and McCabe N, 'MOET in Iraq: enabling Iraqi doctors to develop a teaching model for obstetric emergencies and trauma', *The Obstetrician & Gynaecologist*, 6(4), 2004, p.227-31.

Thornton R, Cordell RF, Edmonds KE. 'Humanitarian aid operations in Republica Srpska during Operation Resolute 2', *J R Army Med Corps*, 143(3),1997, p.141-5.

von Bertele M, 'Medical Support to Civilian Populations on Deployed Military Operations: the UK Approach', *ADF Health*, 7, 200, p.56-58.

Dissertations

Hawley A, 'Civilian-Military relationships in Humanitarian Emergencies, (University of Cambridge, 2005).

Mozumder AK, 'Public Health and Military Humanitarian Assistance: An examination of its effectiveness in complex humanitarian emergencies. Could this be improved?' (Royal Society for Apothecaries, 2004).

Government and Military Publications

Defence Committee, *The Strategic Defence Review: Defence Medical Services, Seventh Report* (London: The Stationary Office, 1999).

Development Concepts and Doctrine Centre, *The DCDC Strategic Trends Program 2007-2036* (Shrivenham: Development Concepts and Doctrine Centre, 2007).

Executive Committee of the Army Board, *Towards an Army 2025*, 24 Nov 06.

Joint Doctrine and Concepts Centre, *The Military Contribution to Peace Support Operations, JWP3-50* (Shrivenham: JDCC, 2004).

Joint Doctrine and Concepts Centre, *Joint Medical Doctrine, JWP4-03* (Shrivenham: JDCC, n.d.).

Ministry of Defence, *Delivering Security in a Changing World*, Defence White Paper Cm 6041-I (London: The Stationary Office, 2003).

MC 326/2, NATO's Principles and Policies of Operational Medical Support, dated 7 Apr 04.

UK Medical Group Post Operational Report - Op TELIC 3, 5 May 2004.

Web Resources

Ariana Afghanistan News [online]. Available from: <http://www.e-ariana.com/ariana/ariana.nsf/allPrintDocs/08CFD686AAA8F86887256F5A004FD42A?OpenDocument> [Accessed on 21 May 2007].

Comprehensive Political Guidance [online]. <http://www.nato.int/docu/basic/b061129e.htm> [Accessed 23 Feb 2007].

Darley J and Skrebowski C, 'Heading for Peak' [online]. Available from: <http://www.energybulletin.net/5266.html> [Accessed on 2 Mar 2007].

IASC, Civil-Military relationships in complex emergencies [online] Available from: [http://www.reliefweb.int/rw/lib.nsf/db900SID/DPAL-62GCWL/\\$FILE/ocha-civmil-28jun.pdf?OpenElement](http://www.reliefweb.int/rw/lib.nsf/db900SID/DPAL-62GCWL/$FILE/ocha-civmil-28jun.pdf?OpenElement) [Accessed 23 Feb 2007].

Millenium development Goals [online]. Available from: <http://www.un.org/millenniumgoals> [Accessed on 13 May 2007].

News from Afghanistan [online]. Available from: <http://www.doctorswithoutborders.org/news/afghanistan.cfm> [Accessed on 21 May 2007].

Petersburg Declaration [online]. Available from: <http://www.weu.int/documents/920619peten.pdf> [Accessed 21 May 2007].

Prime Minister's Speech 12 January 2007, Our Nations Future – Defence [online]. Available from: <http://www.number10.gov.uk/output/Page10735.asp> [Accessed 23 Feb 2007].

PubMed [online]. Available from: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed> [Accessed on 29 Nov 2006].

The UK's International Priorities [online]. Available from: <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029393465> [Accessed 23 Feb 2007].

Universal Declaration of Human Rights [online]. Available from: <http://www.un.org/Overview/rights.html> [Accessed on 2 Mar 2007].

UN Report on the Urbanisation of the Population [online]. Available from: http://www.un.org/esa/population/publications/WUP2005/2005WUP_FS1.pdf [Accessed on 2 Mar 2007].

News Journals

Annan K, 'Two Concepts of Sovereignty', *The Economist*, 352, (18 Sep 1999), p.49-50.

Presentations

Bricknell M, *International Approaches to Medical Support on NATO operations in Afghanistan, presentation to the Combat Casualty Care Conference*, 8 Mar 2007, London, p1-14. Accepted for publication in the *J R Army Med Corps*.