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Considerations for A Military Medical Strategy for the Canadian Forces

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Abstract

The ongoing changes in military operations and operational concepts pose major challenges to military health care support. The revolution in military affairs creates a more diffuse batttlespace in which individual combatants are widely spaced apart. The changing nature of military operations, especially Operations Other Than War (OOTW) will produce different and somewhat unpredictable rates and types of casualties. This poses challenges in developing a medical support plan, as a concentration of effort and tiered support may not be the most effective means of providing timely care. Technological advancements in medicine in addition to providing for a more robust response will also pose ethical and legal challenges to military medicine. The coming demographic and societal changes will change the characteristics of the patient base in the military and may make it more difficult to attract health care personnel to the military. Non-medic

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Introduction

The purpose of this paper is to take a strategic look forward at future trends in military operations and other factors that will affect the Canadian Forces health services. The paper will look at factors such as the trends in civilian health care that will impact military medicine, changes in military operations brought about by the Revolution in Military Affairs (RMA) and technological changes in providing health care. After this review it will try to predict what this will mean for the Canadian Forces health services of 2020.

The Canadian Forces Health Services has been referred to as Canada's 14th Health Care System.[1] It employs close to 4500 Regular and Reserve Force personnel as well as over 600 civilians and has an annual expenditure of close to $200 million. It is currently undergoing major reform in response to a number of reports and studies that found deficiencies in the care provided to CF members.[2] Although many of these reforms have focused on a future force structure the predominant focus has been on fixing identified current and past deficiencies. The notable exception has been the work of the Standing Committee on Operational Medicine Review (SCOMR)[3] that has looked at what the future CF g25hth Servis Alld do. w (Sthaave hat suggee Sook way ahave lar and level. mm(3)TjETEMC /

supported and sustained and finally and perhaps most importantly it tells the troops that we as a nation care about them. For "in the absence of medical readiness we can have no assurance that our troops, the flesh-and-blood elements of our weapon systems, will retain the will to fight, which is the crucial factor in the equation for victory."[4]

While the foregoing argues for adequate medical care for all military organizations, it does not present a cogent argument that the care be provided by a military health care system. To do that one must ask are there any unique characteristics to military medicine which makes it different than civilian medicine practised for military members. Capt(N) Arthur Smith MC, USN makes the argument in what is perhaps a landmark article *Military Medicine: Not the Same as Practicing Medicine in the Military*[5]. He argues that history teaches us that there are unique aspects to the practice of military medicine. Two well known examples will illustrate the point. The treatment of wounds on the battlefield must be different that that normally practiced in civilian care. If battlefield wounds are immediately closed, there is a substantial risk of gas gangrene. This is quite different from civilian care where primary closure is the standard procedure. In civilian health care, the assignment of resources is usually done on the basis of greatest individual need, because except in the most exceptional cases, all patients will receive adequate care eventually. In military medicine and some civilian mass casualty situations, the neediest patients must at times be sacrificed in order to save the maximum number of casualties. As Smith says: " To do more than is necessary to stabilize patients and preserve life and limb (if the latter is even possible in the rush of large numbers of casualties) might well effect the lives of many other subsequent patients".[6]

From the foregoing, it can be concluded that a military medical heath care system is a necessity, a conclusion reached by other authors with respect to their countries.[7] However, some of the future projections of these authors are inappropriate for Canada. In the case of the U.S., the size, magnitude and responsibilities of their medical health care system are quite different. The Canadian Forces health services unlike their US counterparts are only responsible for care to uniformed personnel. Canada can concentrate its military medical resources on pure military medical needs while allowing or arranging for the Canadian civilian health care system to provide for other needs. Thus the state of civilian health care in Canada will have a major impact on the full provision of health care to the Canadian Forces.

Civilian Health Care Trends

The civilian health care system in Canada is widely considered to be in crisis. The Government of Canada has established a Royal Commission on the future of health care, popularly known as the Romanow Commission. This commission proposes to look at this crisis, develop a dialogue with Canadians on their health care system and to make recommendations to the federal government on a way ahead. The commission intends to address Canadian values and how they are and should be reflected in the *Canada Health Act.* It will have a major focus on sustainability and funding of health care, maintenance of quality and access. Finally, issues of leadership, collaboration, and responsibility in the Canadian health care system will be explored.[8] All of these issues will be of intense interest and import to the CF health care system as changes in any of these dimensions will shape the milieu in which military medicine in Canada operates.

Of the many challenges facing health care in Canada, perhaps the most serious are funding, demographics (the aging population) and the shortage of health care personnel. Furthermore, like the United States there are rising expectations of what health care can and should do for people. Technological changes in informatics, diagnostic imaging and the ongoing biotechnology revolution are profoundly changing the nature of healthcare delivery and driving up costs.

The Canadian Forces Health Services have not been immune to these challenges. These issues along with others have been raised by the Chief of Review Services' Review of the Medical Services, the McLellan Report on The Care of Injured Personnel and Their Families[9] and the Lowell Thomas Report[10] on the military police investigation of certain events in the former Yugoslavia as well as the SCONDVA report[11] and the Croatia Board of Inquiry[12]. The CF has embarked on a major project called Rx2000 to reform the Canadian Forces Health Services.[13] This paper will not address Rx2000 directly as these reforms are in response to current and past conditions. However these reforms will shape the ability of the CF health services to respond to future operational changes and demands. While the reforms are needed to respond to the past, they must be accomplished with an eye to the future. A future, in which the needs for military health care will be quite different. Ironically, in order to accomplish future missions, military medicine will be required to learn the lessons of the past.

Any debate on health care in Canada including one on military health care must address the five principles of Medicare enunciated in the Canada Health Act: the need for *Public Administration*, *Comprehensiveness* of Care, *Universality* of coverage, *Portability* of coverage and *Accessibility* to necessary physician and hospital services.[14]

The Canada Health Act specifically excludes Canadian Forces members from coverage under the various provincial Medicare plans. However, quite rightly, CF members expect that they will receive the same care and entitlements that all other Canadians receive. Military health care is of course publicly administered. Issues of comprehensiveness are addressed in the spectrum of care offered to CF members that is comparable to provincial plans[15] Universality is provided to all Regular Force members but is at times problematic for coverage of members of the Reserve Force who are only covered by the CF medical system while on certain classes of service. Portability is generally not a problem in Canada for military care although accessibility often is. While the provision of all these services in Canada is no less a challenge to the military health care system than to the civilian health care system, providing the same level and spectrum of care in the many and varied places the CF is deployed around the world is a daunting if not impossible task. Like the US, health care in Canada is shifting from an emphasis on hospital based "sick" care to a primary care, prevention based model with an increasing emphasis on patient (customer, client) responsibility.[16] This shift in emphasis will profoundly affect military medicine. There is, however, a potential danger that these wider societal changes and the necessary focus of military health care practitioners on meeting civilian norms will erode important military medicine concepts that will result in "the practice of medicine in the military rather than military medicine."[17] For example, civilian care is patient centric while of necessity, especially in times of war, military medicine must focus on the best for the most. To paraphrase Star Trek "the needs of the many must outweigh the needs of the few."

Perhaps no single change in civilian health care is more important than the changes in the professions that provide care. There are dynamic changes occurring in the health care professions in Canada. The two largest regulated professions, nurses and physicians are re-defining their roles in the system. Nurses are taking on primary care roles previously the sole domain of the doctors. Furthermore, para-professionals are playing increasing roles in the delivery of care. Physicians are tending towards more specialization and there is a perceived and actual shortage of family physicians in Canada.[18] The Canadian Forces is currently experiencing an extreme shortage of medical officers. While this may be ameliorated by current initiatives the long term picture for physician availability in Canada points to continuing challenges in this area. Innovative use of the Reserves, civilian health care providers in-garrison and physician extenders such as nurse practitioners and independent duty medics will help. In the long term, it appears that the mix of providers will have to change. Due to operational necessity, the CF health services may have to lead this change, as opposed to following civilian practice.

Beaty[19] has emphasized the need for and future of "brilliant medics" on the modern battlefield. He points out that the dispersal of combatants, the scarcity of physicians and surgeons and the need for rapid stabilization and transport will necessitate a fundamental change in the way care is delivered on the RMA battlefield. The increasing use of Special Forces where the protections of the Geneva Conventions for medical personnel may be ambiguous or irrelevant[20] will probably dictate the development of the combat medic within the CF. That is, a combatant with sufficient medical training to assist and stabilize fellow combatants on the battlefield. This medic

will need to have skills in airway management, hemorrhage control, and the establishment of intravenous infusions. Such a person will need to be able to fight as a primary role and only provide care as a secondary role until the casualty can be evacuated to a medical facility. This will be an expanded capability well beyond the current first aid and buddy care model. Innovations in communications, individual monitoring capability and telemedicine will extend the reach of medical personnel and provide more expert and rapid care to the point of wounding to assist the combat medic. Difficulties in licensing, training and employing combat medics will parallel the current difficulties in doing the same with Search and Rescue Technicians (SAR Techs). However, the success the CF has enjoyed with training and certification of SAR Techs demonstrates that such a concept is feasible.[21]

Training of military medical personnel will continue to be a challenge. Several authors have emphasized how even the provision of civilian trauma care does not prepare one for the provision of battlefield care.[22,23,24] The speed of modern combat and the rapidity with which operations will come to an end will not allow enough time for the historical method of learning of the lessons of combat surgery. That is, the military surgeons learn in the first few days of combat. This means surgeons must be trained in peacetime. However, as previously noted, the procedures they must master are not appropriate to civilian peacetime trauma medicine. As Leitch so eloquently puts it:

> We must face and solve these dilemmas if we are not to repeat the lessons of history, poignantly described in a post conflict report of British Medical Efforts during the Crimean War. "How wide and various is the experience of the battlefield and how fertile the blood of warriors in raising good surgeons."[25]

Simulation is one methodology of overcoming these problems.[26] The difficulty in training CF surgeons is even more acute than that of their US confreres as the incidence of gunshot wounds and other penetrating trauma is so much less in Canada than the US.

Military Operational Trends

In order for the leaders of a military medicine system to know what it should and must do, the operational activities and strategic goals of the force as a whole must be understood. In *Shaping the Future of the Canadian Forces: A Strategy for 2020* the Canadian Forces leadership outlined a future for the Canadian Forces.[27] The organizational objectives outlined in *Strategy 2020* and indeed the entire strategic direction of both *Strategy 2020* and the newly released Army Strategy [28] have profound implications for the military medical support of the Canadian Forces. In particular, the move to lighter weight forces that are globally deployable, the "early in, early out" concept and the increasing use of Special Forces with their unique support demands[29] will require innovative and technologically sophisticated medical support solutions.

The Revolution in Military Affairs (RMA) will come (has come?) to Canada. It is postulated that the RMA will produce "lighter" forces using modern information systems and precision weapons to act rapidly and decisively on the high tech battlefield.[30,31] Increasingly sophisticated technology may enable fewer personnel to be used to achieve the same combat effect but high technology solutions are not necessarily cheaper. A reduced number of highly skilled personnel to operate these systems means fewer personnel are "at risk" for injury. However the loss of even one person may have extremely negative effects on mission accomplishment. This may paradoxically increase the need for highly efficient and effective personnel support functions such as health care.

Commanders need to be wary of how light the medical support footprint can become. As Smith warns:

> To meet the modern mandate for compactness and simplicity in maneuver units, unrealistic medical support expectations have been attached to a warfighting strategy that allows for only minimal medical support function ashore.[32]

Combine this situation with the CF's lack of dedicated tactical medical airlift and Canada's overall shortage of strategic airlift and the Canadian Forces could be entirely dependent on its coalition partners (most notably the US) for acceptable military medical care to deployed forces. This reality would dictate a need for not just interoperability but for commonality in equipment, doctrine and information systems so that CF patients may fit seamlessly into the US health support system. Fortunately, North American health care training standards and practices would make this conceptually easy to achieve. Lack of independent stand-alone capability would limit the options for employment of the CF without coincident US deployment. The more strategic question is whether Canada is prepared to risk the welfare of its sons and daughters, "placed in harm's way," to the medical coverage and support supplied by another nation?

Military health systems around the world appear to be experiencing problems with recruiting, and re-designing their concept of operations to meet the modern battlefield need. [33] Future non-medical CF commanders will need to resist the temptation to go "light" on health support. Canada cannot assume that our allies will always provide for us.

Our allies may provide some portions of deployed military health care. Can we assume that this will be sufficient or are there unique aspects of care for Canadians that must be provided by Canadian health practitioners? It might be argued that CF members

have unique medical requirements that only a CF military medical system with Canadian practitioners can meet. Certainly from a moral point of view we have an obligation to provide care to our own.

Future Military Health Clients

There are several indications that the Canadian population is changing. Therefore, it might be expected that CF recruits of the future will have different social and psychological characteristics. .Leitch et al have postulated that future warfighters will "come from homes where changes in social values and lifestyles have made them physically and psychologically "softer" than their forefathers." [34] Demographic projections for Canada indicate that the CF will be drawing its members from a somewhat smaller population base.[35] If the social demographers have it right they will also be coming from several distinct "tribes" with attitudes and experiences that will shape both their health care needs and their response to health challenges such as injury and the psychological effects of operations.[36] Imagine, if you will, the effect of a permanent disability, such as a limb loss on a soldier with a high need for autonomy and control of his (or her) destiny, what Michael Adams calls the "Autonomous Post-Materialists".[37] In addition to the expected anger and shock such an injury inflicts on any patient this cohort of young Canadians has attitudes which will heighten that response. Canadian military health care will need to prepare itself to deal with these attitudes, the divergent attitudes of the other tribes and the consequent psychological and psychiatric challenges their involvement in combat operations will bring.

Canadian and US society have come to expect military success at lowest possible cost. The low mortality figures in the Gulf War (148 for the US, 0 for Canada) have

engendered both an expectation and a low tolerance for combat deaths.[38] Failure to provide adequate health services to achieve this end would not be tolerated by the Canadian public. The response of Canadians to the recent combat casualties in Afghanistan demonstrated a degree of acceptance by the Canadian public of "the cost of doing business" but it is uncertain what limits there are to such forbearance. It is clear, from the Croatia Board of Inquiry and the continuing public concern with Gulf War related illnesses, that CF members and the Canadian public have little tolerance for a health system that does not respond promptly and adequately to the health concerns of CF members.

The Canadian Forces Health Services and the US Military Health Services have learned similar lessons, albeit in slightly different ways about what has now come to be known as Force Health Protection (FHP) and what is expected of modern military medical support. In summary those lessons are:

1. **Improved Communication**. The need for clear risk communication about both combat, infectious and environmental health hazards and treatments such as immunizations and disease prophylaxis has been shown by such diverse issues as anthrax immunization and malaria prophylaxis with mefloquine. This strategy must not only inform the potential patients but the wider community as well.
2. **Health Surveillance**. There is a clear opportunity in the information age to improve the epidemiological knowledge of both the rates of diseases and the potential cause factors.

3. **Health Records**: Linked with lesson number two is the need for improved medical record keeping and operational exposure data. The hope (as yet unrealized by any system) is that the computerized medical record will achieve the needed comprehensiveness, timeliness and accessibility.
4. **Biomedical Research**. The need for military healthcare research above and beyond civilian healthcare research base is clear. From improved counter-measures to the Chemical Biological, Nuclear Radiological (CBNR) threat to improved combat casualty care with the products of the ongoing biotechnology revolution, research for specific military medical issues is imperative.
5. **Interagency Coordination**. The coordination of care between the Regular Force, the civilian health care system, and Veterans Affairs Canada (VAC) has never been more important. Disease and injury effects do not end with the end of deployment or even a service career. The need for a seamless transition to non-military caregivers is clear.[39]

These lessons have been incorporated into existing and planned changes to the CF Health Services.[40,41] The trends these lessons represent in the need for client focus and information management will intensify with the increasing education level of CF members and the increasing availability of health information on the INTERNET. The day of the all-knowing health practitioner doling out unquestioned wisdom is gone.

Future Casualty Trends

Both the RMA and what has become known as Operations Other than War (OOTW) will have major effects on casualty rates. These trends will pose challenges to existing military medical planning procedures and doctrine. For years NATO has used

SHAPE planning figures to estimate casualty rate and hence the need for military medical health support. As the Balkan Peacekeeping Mission and the Gulf War have shown these planning figures are inadequate to the task of predicting health care need in modern military operations. Overestimation of need unnecessarily increases the logistic load and may lead planners to forego certain force package options. Underestimation puts deployed forces at undue risk. The table reproduced at Annex A compares SHAPE planning figures to EPINATO[42] data on the actual experience of Multi-national Division Southwest (MND(SW)) deployed to the Former Yugoslavia, January to September 1998. Disease occurrence was approximately 70% of the planning figures and the non-battle injury rate was five times the projected rate. [43]

More importantly perhaps, was that the type of casualty seen and the diseases suffered were completely different than what was initially planned for.[44] Modern peacekeeping and peacemaking operations produce a need for medical care that is different in both scope and magnitude from traditional war fighting. This has the consequence of producing an unnecessary logistic load on the overall operation and the possibility of deploying inappropriate medical care specialty mixes.

In an excellent review of recent military operations and the resulting casualty experience Gouge[45] has reviewed the casualty experience of several recent military operations.

In Afghanistan, Soviet Forces demonstrated once again the value of rapid evacuation to definitive surgical care. This created a need for more intensive care beds in-theatre. They also demonstrated the value of moving surgical teams closer to the fighting, a strategy that reduced the "died of wounds" (DOW) rate from 4.3% to 2 %.

[46]The Soviets also demonstrated the continuing need for appropriate preventive medicine practices.[47]

In the Falklands War, the UK lacked air superiority and helicopter casualty evacuation was slowed as a result. The planning models woefully underestimated the number of burn casualties that would be encountered in a sea borne assault force, particularly if the ship came under attack. Forward Surgical Teams were used to great effect and again demonstrated that quick surgical care saves lives.[48]

The medical plan for the US Panama mission involved an evacuation policy of zero days of holding. Casualties were treated by Forward Surgical Teams (FSTs) in Panama. Then the casualties were immediately evacuated to San Antonio TX. Although a six hour flight, only 2 of 258 evacuees died enroute and evacuation was not judged to be a contributory factor to their death.[49]

The Gulf War operation was clearly affected by Combat Medical Support considerations. The ground campaign was delayed until sufficient medical resources were in place and the enormous casualty estimates (as high as 40,000) resulted in two hospital ships, sixty-three hospitals and 18,000 beds being deployed into theatre. Despite all the preparations, medical vehicles were unable to keep up with the armoured advance. The doctrinal tiered evacuation system proved to be inefficient and essentially was no longer followed. The US Army Medical Department (AMEDD) was challenged by the vast distances involved, the speed of the attack, the enemy prisoners of war and refugees. They concluded that Forward Surgical Teams, Combat Stress Control teams and combat lifesavers were beneficial. The 60 bed MASH proved too large and too slow for its doctrinal role.[50]

The US experience in Somalia was quite different than the Canadian. The disastrous Army Ranger raid into Mogadishu demonstrated the enormous difficulties in handling casualties in an urban warfare setting. It also indicated the need for the USAF to develop the Critical Care Augmentation Team (CCAT) which deals with stabilized (more critical) as opposed to the more traditional stable patient in an air evacuation.[51,52]

The US experience in Bosnia mirrors the Canadian experience. In such a theatre, combat injuries are too infrequent to improve or even maintain the experience level of deployed surgeons. Telemedicine proved useful only for transmitting x-rays to be read by a radiologist as none were deployed in-theatre.[53]

In summary, it appears that future conflict will produce highly variable casualty rates and morbidity patterns. This will make the planning of adequate medical support for operations extremely difficult. There is no evident casualty pattern that can be discerned from recent experience or historical records. It is clear that rapid surgical treatment of wounded combatants as close as possible to the point of wounding saves lives. Air evacuation of severely wounded personnel prior to definitive treatment can be carried out with the provision of adequate onboard equipment and expertise[54] thus limiting the need for extensive in-theatre bed space and a large medical logistic footprint.

The lessons of the continuing need for preventive medicine will undoubtedly be learned and re-learned. The changing nature of combat will not fundamentally change the biology of infectious disease risk to deployed forces. Biological warfare would change the nature of the risk but not the biology.

Effects of New Technology on Battlefield Medicine

The effects of the information revolution on health care will continue. Health care personnel at all levels will have increased access to the medical literature and to patient specific information. Health planners will be able to have a better picture of what is going on in operations and what demands will be made of the military health care system to respond. Telemedicine will extend health care expertise further out onto the battlefield.

Advances in the control of bleeding, advances in resuscitation fluids and artificial blood will change the dynamic of trauma care, enabling first responders to do more and allowing more severely wounded patients to be stabilized for transport. Miniaturized medical equipment, individualized monitors, and communication technologies will increase the efficiency and effectiveness of triage.

New, single dose multivalent vaccines[55], genomic based[56] therapeutics and new antibiotics will provide more and better response to traditional battlefield infectious diseases and the CBRN threat. Improved diagnostics that will allow for rapid identification of chem./bio threats will facilitate treatment and prophylaxis.

Genomics will provide the health care system with an increased ability to screen for disease and the propensity for disease. Without co-commitant treatment capabilities this will pose ethical and legal challenges to military medicine. For example, if we know a potential recruit is susceptible to certain diseases, which s/he will only be exposed to under certain very specific combat conditions, can we deny him or her entry to the CF? If we allow that person to enroll are we ethically obliged to prevent him or her from

being exposed to such combat conditions? What are the ethics of immunizing for a disease threat that will only occur if others choose to violate accepted norms of war? All immunization schemes pose some risk to the recipients. How are these risks balanced against needs of the organization to maintain combat capability and the often unpredictable risk of exposure to the causative agent. Anthrax is the current best example of this problem, but Smallpox and other diseases loom on the horizon.

Implications for the CF Health Services

From the foregoing sections several implications for the Canadian military health care system can be drawn Health care provider shortages in Canada will continue and the CF will need to use the civilian health care system for both primary care and specialist support in garrison and to receive casualties shipped home from operations. The mix of providers within the CF will change. Medics and nurses will assume roles traditionally done only by physicians.

On the battlefield, non-traditional providers such as combat medics will play an increasing role. The linear evacuation of casualties will evolve to a "hub and spoke" model. That is, intense initial stabilization will occur very close to the point of wounding. The combat medic will accomplish this with some of the new casualty treatment technologies that are "on the horizon." Alternatively, rapidly deployed medical teams with "brilliant capabilities"[57] will fly to the casualty. The casualty will then be directly evacuated to definitive surgical care. This will bring into question the existence and role of the Field Ambulance, as it currently exists. Small forward surgical teams with only one operating table and no patient holding capacity will be necessary to

effect timely care. Casualty evacuation by vertical lift (helicopters or tilt-rotor aircraft) will become increasingly important in order to provide timely and effective care on the dispersed battlefield of tomorrow. Massed casualties are unlikely and thus the deployment of the entire field hospital as it currently exists is unlikely. Modules of the field hospital similar to the current Advanced Surgical Centres (ASCs) will become the norm.

The nature and intensity of peacetime and peacekeeping operations argues for the placement of the maximum number of medical specialists (surgeons, anesthetists etc.) possible into the Reserves. Current casualty rates and in-garrison patient demand are insufficient to maintain clinical competence in the Regular Force without almost continuing exposure to a pool of civilian patients. However, the current limitations of the employment of Reserves under the National Defence Act, which in effect precludes compulsory call-out make this a risky if not impossible policy to follow for Canada.

Biotechnology advances will allow the CF health services to screen for many more diseases and disease potentials. While this potentially will ensure a fitter and healthier force there are problems with the application of these technologies. These advances will pose legal, moral and ethical challenges in determining member fitness to serve.

Finally, while it might be tempting to go extremely light on CF medical support and plan for medical support to be provided by our allies, this is a risky and immoral stance to take. If Canada wishes to put personnel in harm's way, then it must be prepared to support them medically with appropriate Canadian military health care support.

Conclusion

The next twenty years will see major shifts in military operational doctrine and tactics. This will have profound effects on the provision of military health support to the Canadian Forces. The changing nature of the battlefield will not only change the type and number of casualties, it will also change their dispersion on the battlefield. Traditional tiered medical evacuation chains will no longer be the most efficient and effective way of providing trauma care. There will be a need for a combat medic who can provide immediate life sustaining care to his fellow combatants. Rapid evacuation off the battlefield to forward surgical teams will become the pattern for life-sustaining care. Modern technology offers some hope for diminishing the traditional infectious disease scourges of the battlefield. Information technology holds the promise of better population surveillance and ultimately better care. Commanders will need to plan for optimum casualty management that emphasizes speed of treatment and rapid evacuation over the ability to handle masses of casualties in a linear tiered fashion. The CF will need to develop even closer links with its primary health care partner the US. New technologies, in addition to holding the promise of better care will pose new and unusual ethical and legal dilemmas to military medicine. Finally health care providers will need to continue to engage "the line" in a dialogue on the need for and the limitations of health care in maintaining operational capability. As Leitch so nicely paraphrased Clemenceau "Military Healthcare is too important to be left to military healthcare professionals."[58]

Annex A

Comparison of SHAPE Planning Figures and Actual Casualty Experience from MND(SW) of SFOR

SHAPE Planning Figures		
Disease	1.35%/day	10%requiring hospitalization
Non-Battle Injury	0.05%/day	60%requiring hospitalization
Battle Injury (Steady State)	0.01%/day	60%requiring hospitalization
Battle Injury (Surge)	0.20%/day	60%requiring hospitalization
MND(SW) Figures EPINATO		
Disease	0.95%/day	2.3%requiring hospitalization
Non-Battle Injury	0.28%/day	1.8%requiring hospitalization
Battle Injury (Steady State)	<0.01%/day	%requiring hospitalization
Battle Injury (Surge)	<0.01%/day	%requiring hospitalization

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