Introduction

Military Medical Ethics in the 21st Century

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The challenges facing military medical ethics in the twenty-first century stem directly from two far-reaching changes in modern warfare. First, the past two decades have seen a dramatic increase in asymmetric war between states and non-state actors to the near exclusion of war between nation states. Asymmetric guerrilla warfare did not end with the death of colonialism or apartheid but gained impetus from the collapse of the Soviet Union, the break-up of Yugoslavia and the ongoing wars in Iraq and Afghanistan. In the minds of some observers, the law of armed conflict has not kept pace with these developments as insurgents fight without uniforms and state armies resort to torture and targeted killings to combat militants. In response, some jurists, philosophers and ethicists have re-evaluated the relationship between the necessities of war and the laws of war, including those that regulate the provision of health care and guarantee patient rights. In this light, contributors to this volume critically examine battlefield ethics, the legal and moral imperatives of medical neutrality (that is, the duty to ignore a patient’s nationality and treat all patients according to medical need), patient rights such as confidentiality and privacy, and the guidelines appropriate for military medical research.

Second, medical technology has assumed an unprecedented role in modern warfare. Prior to the middle of the nineteenth century, military medicine played virtually no meaningful role on the battlefield. While medical care was sometimes available for elite troops (as Napoleon provided for his Imperial Guard), most wounded were left to the care of sympathetic locals or to simply fend for themselves. It was not until the early 1860s that publicity generated by the reports of Florence Nightingale and Henri Dunant from the battlefields of the Crimea and Solferino shocked governments into making radical improvements. Beginning with the American Civil War and continuing to this day, military medicine made dramatic strides in its ability to evacuate and care for the wounded. But the emphasis was always on treating the wounded, never on making weapons. Weapons technology was the purview of engineers and experts on ballistics and explosives. This is still true, of course, but since the Second World War, medical scientists and physicians have also entered the fray. Biological and chemical weapons were medical weapons that hoped to use pathogens and chemical agents lethally and effectively. While international treaties have banned the former and greatly restricted the latter, medical science continues to make pivotal contributions to the development of non-lethal weapons and to enhancement technology that turns warfighters smarter, stronger, alert and confident. These challenges set up the dilemmas that occupy the contributors to this volume. While medical ethics demands respect for confidentiality, privacy, a patient’s right to accept or refuse treatment (informed consent) and medical neutrality, the requirements of war and military service conflict with a health care provider’s ability – not to say role-driven duty – to observe these

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1 'Asymmetric war' is used in context as a convenient blanket term to cover the wide variety of different names currently in use to describe conflicts other than state-on-state ones.
principles in their entirety. At the same time, many medical organizations oppose the participation of medical personnel in the development of weapons or medical enhancements that do not have any therapeutic value. Here too, however, the necessities of war impinge upon the tenets of medical ethics.

Military Ethics and Medical Ethics

Balancing military necessity, military ethics and medical ethics is the crux of the challenge that the contributors to this volume face. ‘Military necessity’, as defined in Article 14 of the classic catalogue of the customary Law of War, the Lieber Code of 1863 (itself produced as in reaction to the horrors of the American Civil War) ‘… consists in the necessity of those measures which are indispensable for securing the ends of the war, and which are lawful according to the modern law and usages of war’. Variations on this definition have found their way into military handbooks of rules and standards such as the 2004 British The Manual of the Law of Armed Conflict (UK Ministry of Defence 2004, Section 2.2.1) which stipulates that states engaged in armed conflict must ‘… use only that degree and kind of force, not otherwise prohibited by the law of armed conflict conflict, that is required in order to achieve the legitimate purpose of the conflict …’. But such legalist definitions, unfortunately for our purposes, beg the question. What happens when the military mission (success in battle and victory in war) demands acts that are not sanctioned by international law? As the chapters by Jacob Collen et al., Michael L. Gross and Paul Gilbert show, the conditions of war sometimes make it impossible to treat all the wounded equally and may, in fact, demand that less severely wounded compatriots be treated before more severely wounded enemy soldiers or civilians. Non-lethal weapons may ultimately help save lives in a battlefield environment where combatants are indistinguishable from civilians but at the cost of inflicting direct harm on non-combatants; a grave breach of the law of war. Further, the exigencies of war may severely curtail the medical rights of military service personnel. Writing on enhancement, Maxwell Mehlman and his colleagues, together with Lauren R. Robbins, confront the imperative that sometimes commands soldiers to accept enhancing medical treatment, on pain of facing disciplinary action if they refuse. Alternatively, war may impose entirely new obligations to provide medical care to wounded civilians, as Marcus Schulzke and Peter Osthoom and Myriame Bollen argue in their chapters.

To understand the dynamic at work here, a few words about the principles of medical and military ethics, the laws of armed combat, and the imperatives of mission accomplishment are in order. There is a general prohibition on the use of ‘unlawful means’ to secure one’s objective in wartime. Unlawful means are those proscribed by international treaties or conventions. Since international laws gain their force by agreement, they may also lose their force if nations agree to change the law of war or choose to leave a specific topic of war unregulated. A good example is unconventional weapons. While biological weapons are categorically proscribed, chemical weapons are merely restricted, while nuclear weapons remain largely unregulated. This inconsistency stems from the relative strength and competing interests of the great powers whose respective state interests converge on the subject of biological weapons but diverge greatly with regard to nuclear weapons. Thus, different legal principles govern each kind of weapon. Moral principles, on the other hand, are free from the vagaries of politics, allowing one to argue that each of these three weapon types should be equally restricted or banned because they pose a catastrophic and unacceptable danger to humankind. All three are similar in this respect and, there are, therefore, no good moral reasons to distinguish among these three weapons. We therefore need to look elsewhere for the moral reasons...
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principles that underlie the laws of war. They are to be found within the Just War Tradition (JWT):\(^1\) this provides a lens through which to ascertain the justice of a particular war. There are several categories of such principles. The first (\textit{jus ad bellum}) speaks to the just cause of war. War is justified when nations fight in self-defence against unjust occupation or aggression and/or in defence of the fundamental rights of others. In the first case a nation defends itself against invasion or seizure of territory or an imminent threat and, in the second, fights a war of humanitarian intervention in defence of the rights of others.

A second moral category of war (\textit{jus in bello}) speaks to the rights of its participants and the just means to wage war. Combatants enjoy the right to kill but may not kill one another in any way that comes to hand. Human dignity, that is, the basic worth we accord a person qua human being, demands that even during war soldiers enjoy protection from unnecessary and inhuman harm. ‘Unnecessary’ refers to any means not necessary to subdue an enemy. ‘Inhuman’ is more expansive and prohibits unusually cruel means of warfare. Examples include torture and a small number of weapons such as exploding bullets, serrated bayonets and blinding lasers. Innocent non-combatants enjoy even greater rights that protect them from unnecessary, direct and excessive (disproportionate) harm. Notice, however, that non-combatants do not enjoy blanket protection during war but instead remain vulnerable to what is commonly known as collateral or incidental harm that results in death, injury and disease. This is the crucial difference between peace and war. Not only do the innocent suffer in war, they suffer justifiably when a nation’s cause is just and its armies make every effort to avoid inflicting unnecessary, direct and excessive harm upon civilians as they pursue their enemies. Thus the JWT, at least in its first modern formulation, that of St Augustine (writing in the fourth century AD) started from a recognition that war was an inevitable part of the human condition and caused harm on a massive scale. The object of the JWT was to set limits and constraints on the amount of violence that could be used. Augustine’s project was an attempt to reconcile the inevitability of widespread death and destruction in wartime with the pacifist teachings of Christianity. Hippocrates’ starting principle in medical ethics, ‘Do no harm’, was much the same as Christianity’s, but neither took account of war, where the starting principle seemed to be ‘Do as much harm as is necessary in order to secure victory.’ Augustine, and later St Thomas Aquinas, offered a compromise: ‘Do no more harm than is necessary to secure victory.’ But the principles of medical ethics could not accommodate even this compromise: the prohibition against inflicting harm was absolute. The principles were therefore bound to conflict with the moral principles of JWT, as well as with combatant and non-combatant rights that govern armed conflict. The World Medical Association, in fact, is quite emphatic about this. ‘Medical ethics in times of war refer to life, respect for human dignity, respect for autonomy, individual self-determination and utility. The right to life is fundamental. The purpose of medicine is to save lives and improve life. To do so, individuals enjoy the right to health care. This is a positive claim right soldiers have toward their government or military organization that obligates them to provide warfighters with the care necessary to do their job. However, it is a peculiar aspect of military medical medicine, as Gross argues in his chapter, that this claim may weaken when soldiers can no longer do their job.

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\(^1\) The JWT is sometimes referred to as the Just War Theory, but this is a misnomer: the Tradition is actually a body of doctrine, Judaeo-Christian and Graeco-Roman in origin, comprising the practical wisdom of theorists and practitioners in the art of war accumulated over several millennia.
Respect for dignity, autonomy and self-determination run together. Dignity, as noted earlier, reflects the intrinsic value attached to any human being. Whilst dignity is a fundamental principle of international human rights, its role in medical ethics is quite modest. Doctors rarely have an opportunity to egregiously violate human dignity. A physician’s role in interrogation may be one example, however, as might be abject neglect of a terminally ill patient. More commonly for medical ethics, dignity is usually interpreted in terms of lack of respect and non-humiliation. Even here the usage is often intuitively compelling without admitting of an easy explanation. Thus we cover a naked but unconscious patient out of respect for his dignity whilst knowing that the patient in his present state is incapable of humiliation.

Respect for autonomy, on the other hand, does much of the heavy lifting for medical ethics and reflects the cognitive capacity of human beings to legislate or determine their own vision of the good life and the means necessary to achieve it. As individuals contemplate these ends and the means necessary to realize them, they exercise the freedom to shape their own lives. Respect for autonomy cuts across deontological and utilitarian moral theories. For the former, it is a fundamental defining element of Kantian ethics; for the latter, an essential component of human happiness.

In the context of medical ethics it generates the subsidiary patient rights of informed consent, that is, the right to receive the medical information necessary to accept or decline treatment, and thus underlies a caregiver’s duty to tell the truth and to respect confidentiality and privacy.

Utility is also a principle common to military and medical ethics as both strive to provide maximum benefits at minimal cost. In medical ethics, money usually defines costs while the number of lives saved and metrics of quality of life define benefits. These benefits are not always commensurate. Which, for example, is an ethically superior allocation of resources: a neonatology unit that will save tens of premature infants at a cost of tens of thousands of dollars each or free dental care for thousands at the same cost? Nations might try to do both but resources are limited and so they will have to choose. Regardless of how they choose, they are trying to maximize the welfare of a patient or patients, whether a soldier or civilian. Military ethics, on the other hand, does not do this. It is no secret that war often takes more lives than it saves. Nations or peoples sacrifice lives for intangible collective goods such as freedom, sovereignty and honour. As such, the individual soldier-patient may find his medical needs, indeed his very life, subordinated to the interests of some amorphous collective.

Once the principles of medical ethics are superimposed on those of military ethics, conflicts and dilemmas inevitably arise. Patient rights to medical care and informed consent, and caregiver duties of truth telling and confidentiality all come under pressure. Limited resources may demand that an army medical team first treat those they can return to battle thereby leaving the critically injured to die. Or, the threat of biological warfare may require an army to order soldiers to take an experimental vaccine, exactly as the United States demanded of its soldiers prior to the First Gulf War (see Mehlman et al. in this volume). Soldiers who refused had to leave the service. Similar concerns about military necessity may require that health care providers shade the truth about the effect of certain mandatory treatments to protect morale or return soldiers to duty before they are entirely well. In these latter cases, the principle of utility undergoes transformation. It is not a particular patient’s welfare that a caregiver strives to maximize but the collective welfare of an entire army. In doing so, an individual’s welfare may be shunted aside in favour of the collective good.

In the chapters that follow, the contributors grapple with these dilemmas in different ways. Few uncritically accept that proposition that medical ethics in time of war is identical to medical ethics in times of peace. For some authors, the principles of medical ethics will, after careful consideration, outweigh those of military ethics. For others, military necessity, subject to the moral...
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1 principles governing just cause and the rights of combatants and non-combatants, is sufficient to 1 2 override some principles of medical ethics such as the right to health care or the right to informed 2 3 consent. They will acknowledge that the good of an individual patient may fall to the collective 3 4 welfare of the fighting force. But they will also understand that that human dignity is not forfeit. 4 5 Regardless of the exigencies of war, medical personnel, no less than anyone else, may not neglect 5 6 or abandon their charges or treat them inhumanely. This may seem obvious but it is a recurring 6 7 quandary during war.

8 Clashes between military and medical ethics sometimes force military medical personnel to 8 wear two hats (or as some term it, assume 'dual loyalty'): one as a caregiver who looks after her 9 patient and another as a soldier who serves his military organization and obeys his superiors. This 10 is not a new problem and in some cases physicians can only live with this tension. Dominique 11 Larrey, one of the early fathers of military medicine and Napoleon’s chief surgeon, sensibly 12 believed that the wounded should be evacuated from frontline aid stations to larger hospitals in 13 the rear ‘immediately after an engagement’. But he also understood that this was largely a military 14 decision: ‘To these physiological arguments in favour of removing the wounded,’ Larrey wrote, 15 ‘should be added others of a political nature. To the commander-in-chief alone it belonged to 16 admit these, and to arrange such plans as would best serve the interests of the wounded, and 17 support the spirits of the soldiers’ (Larrey [1814] 1987, vol. 2, 147). Physicians may determine their 18 patients’ medical needs, but military commanders decide when and how to serve them consistent 19 with military necessity and the prosecution of the war. This applies across the board whether in 20 terms of battlefield medical ethics (Part I), the ethical challenges posed by new enhancement and 21 biological (or life science) technologies (Part II) or by the everyday tasks of protecting patient 22 rights, conducting military medical research or engaging students in the course of military medical 23 ethics education (Part III).

24 Battlefield Medical Ethics

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28 Larrey’s concerns are immediately obvious in the first of the chapters in this book. In ‘Military 28 Medical Ethics: Experience from Operation Iraqi Freedom’, Jacob Collen, Patrick O’Malley, 29 Michael Roy and Laura Sessums, together with commentaries by Craig M. Klugman, Marcus 30 Adams and Dawson Schultz, analyse seven cases that describe the difficulties inherent in providing 31 care to local civilians, host-nation forces (that is, Iraqi soldiers allied with Coalition soldiers), host- 32 nation civilians who work for Coalition forces, and detainees. In these cases, the medical imperative 33 to provide immediate care is clear and would normally be overriding except for severe battlefield 34 conditions. In some instances, medical resources are limited so that treating locals may exhaust the 35 supplies necessary to evacuate or treat Coalition soldiers. Sometimes treatment is futile because 36 it requires sophisticated follow-up care that is unavailable in the local health care system. In other 37 cases, providing care is dangerous, so that stopping to treat wounded civilians may put Coalition 38 soldiers at unacceptable risk. To resolve these dilemmas, the authors prioritize their principles. 39 Often military necessity is paramount, particularly when mission success is at stake. This is not 40 controversial: military necessity is a big and decisive hammer. The trick, however, is to determine 41 if and when military necessity is on the line. Often, it is not and these authors convincingly offer 42 cases that reject first impressions and conclude that military necessity is not always at issue. Once 43 military necessity is set aside, conflicts with military commanders resolve thereby leaving medical 44 personnel to confront their dilemmas utilizing the basic principles of medical ethics enumerated 45 above. Concerns for military necessity and medical care continue to engage the contributors as 46 they consider care for sick and injured enemy civilians and enemy combatants in detail.
Two chapters focus on civilian care. In ‘The Doctrine of Double Effect, Utilitarianism and the Treatment of Civilian Casualties’ Marcus Schulzke raises vexing questions about the obligation to provide medical care to enemy civilians who suffer collateral harm in the wake of necessary military operations. This is a question that neither the law of war nor the JWT has addressed. At best, humanitarian law requires occupying forces to provide medical care for civilians. But collateral harm often results in war-torn areas that opposing armies never occupy. To grapple with this predicament, Schulzke turns to the doctrine of double effect (DDE). The DDE is the only strain resources further.

Picking up on Schulzke’s argument, Peter Olsthoorn and Myriame Bollen provide an on-the-ground look in their ‘Civilian Care in War: Lessons from Afghanistan’. Rather than focus on the rules that regulate treatment of wounded enemy combatants, as Gross and Gilbert discuss in the following chapter, Olsthoorn and Bollen take on a more nuanced regulation: ISAF (International Security Assistance Force) rules requiring that medical personnel treat Afghan army troops before Afghan civilians. In these cases, physicians must delay treatment of seriously wounded civilians so they may treat less severely wounded Afghan soldiers. This dilemma mirrors that of having to choose between compatriots and enemies, albeit void of the emotional commitment one has toward one’s own (see the Gross and Gilbert debate following). As such, the Afghan case offers a clear example of the dilemma but often game the system to provide the care they must. In this way, their behaviour is not so different from civilian physicians who must navigate between the needs of their patients and the interests of insurers.

Medical Civic Action Programs (MEDCAP) present similar dual loyalty conflicts for physicians providing local health care during humanitarian operations. During the war in Vietnam, US built and managed medical facilities would provide basic health care to villagers and demonstrate the benevolence and good will of the Vietnamese government and its allies. Health care was the tool to cultivate loyalty to the regime and support for US forces. This dual role for medicine was largely unprecedented and created no few dilemmas for military physicians. These dilemmas resonate today in Afghanistan as the ISAF establishes public health programmes and builds and staffs clinics. On one hand, medical care is still rudimentary, short of diagnostic equipment and without effective follow up. On the other hand, its primary goal is still military: pacification of the local population. As in Vietnam, MEDCAP’s mix of medical and military roles is volatile, leaving doctors, nurses and medics unable to effectively fulfil either their military or medical mission. Olsthoorn and Bollen confront this tension with a call for a more comprehensive ethic of care so that the medical personnel can emphasize their roles as healers. Effecting this solution includes possible changes to international law and to the concept of neutrality; precisely the subject the next contributors take up.
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In the following two chapters, Michael L. Gross and Paul Gilbert debate the principle of medical neutrality that stipulates that only urgent medical need should determine the order of treatment among wounded combatants. In ‘The Limits of Impartial Medical Treatment during Armed Conflict’ Gross disputes this principle with reference to three cases: battlefield triage, care for local civilians and fighters, and care for compatriots. During battle, scarce resources may upend need-based care and require physicians and medics to treat those with only moderate wounds in order to return them to battle quickly. Under these circumstances, those requiring urgent medical need are treated last. A different situation arises when occupying or intervening forces treat host-nation civilians or allies. As Osthoorn and Bollen, and Collen and his colleagues described in previous chapters, these cases are not rare; local nationals make persistent demands upon Coalition or ISAF medical facilities. Nevertheless, international law and military imperatives may leave too, nationality, not just medical need, matters. Finally, Gross considers the special obligations of comradery and care that may morally require a medic to treat his compatriots before anyone else, regardless of the severity of their wounds.

In ‘Medical Neutrality and the Dilemmas of War’ Paul Gilbert acknowledges that there may be rare instances where military imperatives may override the principle of neutrality when resources are scarce. Nevertheless, he defends neutrality from any encroachment that may come from special duties to one’s comrades. Neutrality is paramount because it innervates medical care and provides the foundation of medical integrity. Neutrality is inseparable from the role of caregiving that being a soldier or comrade-in-arms. On the contrary, argues Gilbert, these latter roles, and the duties inherent in them, remain subordinate to the neutral role of caregiver. Yet, if there is no moral conflict between the demands of neutrality and feelings of comradery, why do medical personnel anguish over the question of whom to treat first? While Gilbert acknowledges that military medical personnel may feel the duty to treat their comrades before all others, they must remember that this is only a feeling, an affective sentiment and not, as Gross suggests, a moral obligation. As such, the challenge that doctors and medics face is not one of sorting out conflicting principles but of overcoming weakness of will.

While Gross and Gilbert debate the practice of medical neutrality and come to very different conclusions about its reach, Y. Michael Barilan and Shlomit Zuckerman look deeply into the normative and legal regimes governing the practice of medical neutrality and, in particular, their implications for non-combatant immunity. This chapter, ‘Revisiting Medical Neutrality as a Moral Value and as a Doctrine in International Law’, is a telling example of how philosophers can draw conclusions about the practice of war from the practice of medicine. Like Gilbert, Barilan and Zuckerman affirm norms that require physicians to treat the wounded with absolute neutrality. Far from being a pragmatic convention or agreement among the warring parties (as Gross argues), immunity for medical personnel reflects the unique status of physicians as caregivers and should afford medical personnel a special kind of protection that other non-combatants do not possess. This may mean that medical personnel, unlike civilian non-combatants, should never suffer collateral harm or, unlike wounded soldiers, never face incarceration upon capture. Rather, there is room to consider a far stronger standard to prevent harm to medical personnel during military operations and a far looser standard that might mandate their release if captured. These proposals task international law to set tighter regulations respecting neutrality, an argument in stark contrast to Gross’ proposal to relax standards in light of conflicting moral obligations of comradery. The
complex relationship between medical personnel and existing norms of military and medical
century military medical ethics. The promise of cutting edge enhancement technologies and the
dangers of dual-use biomedical research present these dilemmas in stark relief.

7 Military Medical Ethics and New Technologies

Biomedical Enhancement

Biomedical enhancement is an innovative technology that presents very hard dilemmas for military
medical ethics. While the traditional role of medicine is, as the previous chapters indicate, to treat
the wounded, military medicine has moved into new territory in recent years, namely, to prevent
wounds and injuries by developing technologies to make stronger, smarter and sturdier soldiers
who can better survive the dangers of the battlefield. In the first chapter in Part II, “Enhanced
Warfighters: A Policy Framework”, Maxwell Mehlman, Patrick Lin and Keith Abney consider
such enhancement technologies as pharmaceuticals, bionic body parts and neural implants and
ask which normative principles should govern their development and use. Enhancements of these
sorts neither cure any disease nor provide a therapeutic benefit to those who receive them. As a
result, enhancement technology raises many questions about informed consent, coercion in cases
of refusal, and the level of permissible risk that a military organization may impose on ‘enhanced’
warfighters. To answer some of these questions, the authors consider but ultimately reject several
policy frameworks that guide non-military medical ethics. These policy models emphasize the
core principles of medical ethics described earlier that require that physicians respect patient
autonomy, facilitate informed consent and maximize a patient’s welfare. Due to the inability
to always obtain informed consent and to maximize a patient’s welfare during armed conflict,
Mehlman and his colleagues find the medical ethics model unsuitable for regulating enhancement
technologies. Similarly, public health models that permit authorities to vaccinate or quarantine
certain individuals do not account for military requirements, which may demand that troops accept
untested, experimental technologies. To work through these shortcomings, the authors propose
a hybrid model that takes account of military imperatives, military ethics and medical ethics but
which hopes to balance them against such principles as fairness, consent, respect for dignity,
transparency, just cause and international humanitarian law, thus giving give policy makers the
tools to tackle the hard questions that enhancement technology poses.

Central among these questions remains the place of consent. While some may argue that the
military may require soldiers to accept enhancement technologies, Lauren R. Robbins’s ‘Refusing
to Be All That You Can Be: Regulating against Forced Cognitive Enhancement in the Military’
challenges this claim. As she reviews advances in pharmaceutical enhancements, Robbins
describes how few of these enhancements are therapeutic while some go so far as to alter an
individual’s cognitive state. Developing the idea of ‘cognitive liberty’, (that is, an individual’s right
to ‘think independently and autonomously, using the full spectrum of the mind’), Robbins
concludes that drugs that change a person’s cognitive state may only be administered with a
soldier’s full and informed consent; anything else is a gross infringement of a basic right. Against
Robbins are the same objections that Mehlman and his colleagues raise: military imperatives
and the feasibility of obtaining consent in battle. But Robbins is unmoved by these arguments,
suggesting instead that military authorities obtain consent prior to deployment rather than wait
for the urgency of battle. And, what if military imperatives are overwhelming? Here, too, Robbins
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1 stands firm and insists that the military find alternatives or simply stand down, rather than infringe
2 upon a soldier’s fundamental liberties. Her arguments, together with Gilbert’s, Schulzke’s and
3 Osthoo and Bollen’s, reinforce a fundamental fault line in the discourse of military medical
4 ethics. On one side are those who side largely with the WMA’s position that military medical
5 ethics in wartime is identical to military medical ethics in peacetime. On the other side are those
6 observers who cannot help but notice that the exigencies of war may fundamentally alter the ethics
7 of military medicine.
8
9 Dual-Use Life Science Technologies

10 During the Second World War, the United States and its allies censored all scientific information
11 pertaining to the mass production of penicillin. This effectively kept penicillin out of enemy
12 hands for the duration of the war. As a result, many enemy soldiers and civilians probably died
13 of preventable infections. For proponents, US policy justifiably restricted information, medical
14 information, that would have allowed an enemy to sustain a more powerful and threatening
15 fighting force. In the process, medical and scientific needs fell before national security. This debate resonates today but in the opposite direction. Scientists need not fear that an enemy will
16 use advances in medical research to fortify their fighters. Rather, they fear that terrorists will use
17 medical research to manufacture a catastrophic biological or chemical weapon. The threat is very
18 real and poses two tasks for military medical ethics: regulation and education.
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20 These tasks are interwoven. In his chapter, ‘Ethics and Censorship of Dual-Use Life Science
21 Research’, Michael J. Selgelid takes up the first challenge, highlighting a rancorous debate that
22 recognizes the need for regulating the dissemination of sensitive scientific research but remains
23 wary of high-handed government interference. In the second chapter, ‘Biosecurity and Dual-Use
24 Issues: The Education Module Resource’, Maria J. Espona takes up the second challenge and
25 proposes a far-reaching and ambitious educational programme as a front line of defence against
26 the misuse of biomedical research.
27
28 To grasp the enormity of the threat that the malevolent use of biomedical research presents for
29 the international community, Selgelid vividly describes a number of contemporary cases that can
30 seriously threaten national security. Advances in genetic engineering have allowed scientists to
31 replicate a number of deadly viruses including mousepox (closely related to smallpox), polio and
32 the Spanish flu that killed millions 100 years ago. Despite the danger, pathogen replication is an
33 essential part of developing new genetic technologies that may benefit human health. As such, the
34 research is dual use: while its primary goal aims to advance medical and scientific knowledge, the
35 same research admits of malevolent use in the wrong hands. These contemporary cases, together
36 with historical uses of crude biological weapons, are at the heart of the educational curriculum that
37 Espona develops to introduce scientists to the dangers of dual-use research.
38
39 Confronting the malevolent misuse of dual-use research will require scientists to police their
40 work in a way that is unprecedented. No single solution seems feasible. Many worry that excessive
41 government oversight or censorship will hinder or block research. Alternatively, calls for self-
42 regulation or institutional regulation, for which few scientists are well equipped, might be of
43 doubtful efficacy. To meet these concerns Selgelid proposes a multidimensional approach that only
44 embraces censorship in those very rare instances when publication presents a clear, immediate and
45 overwhelming danger to the community. For most potentially dual-use research, he turns to a ‘web
46 of prevention’ that begins with basic educational efforts to alert scientists to possible dangers of
47 dual-use research and gives them guidelines to tailor their research accordingly. Because scientists
48 may sometimes find it difficult to supervise their own research, professional committees may be
1 necessary to provide additional oversight. Only when these committees remain undecided might it be
2 necessary to turn to stronger forms of censorship. At the same time, there is considerable room
to consider ‘downstream’ measures that prepare for the risks of dual-use research by developing
adequate countermeasures should anyone abuse this research. It is clear, however, that many of these measures are far from implementation. As a first step,
Esponaó integrates many of Selgelid’s suggestions into a curriculum that strengthens scientists’
ability to grapple with the dual use implications of their research. The curriculum provides an
overview of the dual-use threat, describes the details of the legal regime that regulates biological
weapons, and assembles practical guidelines to manage research and consult with advisory boards.
Still in its infancy, these educational programmes offer a template for researchers to construct and
implement curricula of their own.

Educational programmes in the face of the misuse of biomedical knowledge are also at the heart of Jessica Wolfendale’s chapter ‘Psychologists, Torture and SERE’ as she takes on those psychologists working on Survival, Evasion, Resistance, and Escape (SERE) programmes designed to provide the survival tools to US service personnel captured by enemy forces. SERE personnel are professional psychologists and while they neither interrogate nor torture anyone, they utilize their medical expertise to anticipate possible torture techniques and then to develop psychological countermeasures for service personnel should they face brutal enemy interrogation. Unfortunately, many of these torture techniques found a dual use as they surfaced in the hands of American interrogators, who then called on SERE personnel to help defeat the defences that interrogees might employ to hide important information. The SERE saga raises several salient questions: should psychologists and other medical workers involve themselves in any military research? This same question plagues medical scientists who contribute their expertise to the development of non-lethal weapons or enhancement technology. Should SERE psychologists have anticipated the harmful, unintended consequences of their research? Again, this same question bedevils biologists and geneticists replicating dangerous pathogens and whose data that may fall into malevolent hands.

In these cases, there is room to consider a variety of measures. At one end, researchers must police themselves by looking beyond their research into possible implications that may cause great harm. At the other end stand philosophers, ethicists and lawyers who will use public platforms to call attention to possible abuses of medical science. There was great controversy about psychologists, psychiatrists and physicians who participated directly in detainee interrogation but little regarding those who worked for the benefit of American service personnel and whose research later found a dual use. Most SERE researchers were doing good things and it is precisely here that keen ethical insight and education can be most useful.

In the final part, the contributors look beyond battlefield ethics, enhancement and dual-use biotechnologies to issues less acute, perhaps, but no less ethically taxing: patient rights, military medical research and military medical ethics education.

Patient Rights, Research Ethics and Military Medical Ethics Education

Part III opens with a discussion of patient rights, the cornerstone of medical ethics. Efforts to understand and protect patient rights have made tremendous strides in recent years. Patients can now rest assured that their rights to informed consent, confidentiality and privacy are next to sacrosanct, protected by professional ethics and law alike. In military service, however, these rights...
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1. Break down and patient-soldiers find that non-medical military interests may curtail their rights. 1
2. Investigating patient rights in the British military, Mike Gibson and Angus Ferguson highlight a 2
3. central dilemma of military medical ethics that, again, draws our attention to the conflict between 3
4. a physician’s medical and military obligations. Gibson opens ‘Rights of British Military Patients 4
5. during Peace and War’ with a broad overview of civilian patient rights in the UK that leaves 5
6. the reader to wonder which of these rights service personnel actually enjoy. Keenly aware of the 6
7. potential conflict between the broad range of rights patients should enjoy on the one hand and 7
8. military necessity on the other, Gibson is not quick to abridge these same rights for soldiers. Rather, 8
9. his default position demands that soldiers and civilians enjoy the same rights: only exceptional 9
10. conditions warrant restricting a soldier’s rights to medical care, informed consent or confidence. 10
11. In general, these rights should remain protected throughout a person’s military service, be it during 11
12. training, deployment, discharge or retirement. Yet at each stage, patient rights come under pressure. 12
13. Military training may demand breaches of confidentiality or mandatory immunizations. Once 13
14. deployed and in action, soldiers may find that they have no right to refuse treatment that keeps 14
15. them fit for duty or, if desired, to seek a second opinion. Upon retirement from service, veterans 15
16. may not enjoy access to the care they need to treat injuries or disease incurred during their service. 16
17. For Gibson, the challenge is to hold the line and avoid unnecessary and unjustified exceptions to 17
18. patient rights while accounting for security needs. 18
19. Ferguson faces a similar task as he closely investigates a soldier’s right to confidentiality. 19
20. In ‘Medical Confidentiality in the Military’ he draws on the case of a British Army medical 20
21. officer accused of breach of confidence after disclosing confidential medical details to a patient’s 21
22. commanding officer without his consent. Ferguson then tracks the progress of the subsequent 22
23. investigation and court case that revealed serious uncertainties and ambiguities in the regulations 23
24. that were designed to assist military decision-makers in determining when and in what circumstances 24
25. confidentiality could be justifiably breached. Ferguson locates the origin of such uncertainty in an 25
26. over-emphasis, in military medical contexts, on the primacy of human rights. He grants that military 26
27. needs and imperatives can make an absolutist view of such rights untenable. Confidentiality can, 27
28. and must, be overridden when the occasion demands but it is unfair and impractical to expect 28
29. that regulations can provide clear answers in all cases. As in civilian contexts, doctors must take 29
30. responsibility for their decisions to justifiably breach confidentiality in the absence of a patient’s 30
31. consent. Underlying these decisions is a soldier’s trust that his physician will protect his patient’s 31
32. interest and promote the collective welfare and safety of the military unit. Such trust, in turn, will 32
33. encourage individuals to seek treatment for injury and illness promptly knowing that their secrets 33
34. are in safe hands and assured that they will not be disclosed without their consent unless there is 34
35. an overriding military need to do so. 35
36. 36
37. Research Ethics in Military Medicine
38. 37
39. Although military medical research is often associated with nefarious uses of psychedelic drugs, 39
40. most research is far more prosaic, ranging from vaccine development to the optimum design for 40
41. boots and uniforms. That said, military medical research still poses hard ethical problems. First, 41
42. military medical research puts medicine in the service of war, where many would argue it does not 42
43. belong. Second, not all research is therapeutic: non-lethal weapons research does not benefit any 43
44. sick or injured person or prevent disease. Finally, research subjects are often service personnel, a 44
45. particularly vulnerable population that cannot always give fully informed consent. Confronting 45
46. these and other issues, Ulf Schmidt and Eric N. Erickson offer two very different accounts: one 46
47. 47
historical and one contemporary. Each highlights the pitfalls of unregulated military medical research. Ulf Schmidt opens this part with ‘Accidents and Experiments: Nazi Chemical Warfare Research and Medical Ethics during the Second World War’. The subject is broader than the title suggests because Schmidt, a historian of medicine, utilizes Nazi experiments as a springboard to scrutinize contemporary research ethics. In this chapter, he bypasses the well-known brutal experiments of the Nazi doctors to focus on the military medical research surrounding nerve gas. While no belligerent employed poison gas in the Second World War, every side was busy developing chemical and biological weapons. Unlike explosive kinetic weapons, chemical and biological weapons require deadly chemical compounds, is exceptionally accident-prone and mishaps are often fatal. Nazi research was no exception and Schmidt turns to these episodes to highlight accident prevention, a neglected aspect of research ethics. Working from the inadequacies of Nazi research, Schmidt notes a number of problems that continue to plague contemporary military medical research: exploitation of vulnerable populations, lack of onsite safety measures, secrecy and lack of transparency. That makes it clear that Nazi negligence was not simply a matter of their misguided ideology, but one rooted in the difficulty of providing requisite research safety standards in time of war and national emergency when time is of the essence and the need for secrecy uncontested. If the Nazi experience is any example, it should warn us about pitfalls of unregulated military medical research during armed conflict.

Contemporaneously, in ‘Institutional Review Board Specialization for Non-Lethal Weapons Research’ Eric Erickson Jr picks up many of these themes as he examines the very research dilemmas that Schmidt illuminates in his chapter. Non-lethal weapons are a growing component of military arsenals worldwide. Designed to incapacitate their targets, non-lethal weapons disable combatants by chemical, electromagnetic, optical and acoustical means. Developing these weapons entails medical knowledge and testing them requires volunteer subjects. Just as Schmidt notes, protecting test subjects in non-therapeutic military research requires layers of protection. These begin with the IRB, the institutional review board that approves and monitors medical research. Erickson argues that IRBs, like those used in biomedical research, are appropriate for the kind of military medical research that non-lethal weapons exemplify. However, care must be taken to assure that IRB members command the wide range of expertise necessary to oversee weapons development. At the same time, IRBs must guarantee that research procedures remain transparent, ensure reasonable risk and safeguard research subjects’ basic medical rights of informed consent, confidentiality and follow-up care. These are many of the same principles that inform military medical ethics education.

Military Medical Ethics in the 21st Century concludes with military medical ethics education. For as little critical study there is of military medical ethics, there is even less of military medical ethics education. As they train, military physicians are generally physicians first and soldiers second. As such, they are very different from medics who begin their career as soldiers and then specialize in long years of civilian training. Once in uniform, they will receive a few short months of military battlefield first aid and evacuation. In most cases, military physicians begin their career only after long years of civilian training. One training that leaves little room for formal military medical ethics education. Two programmes can rectify this lacuna. First, military physicians may enrol in special courses or workshops dedicated
1 to military medical ethics. One of the most prominent is the International Committee for Military
2 Medicine (ICMM). In their chapter ‘Hovering between Roles: Military Medical Ethics’ Daniel
3 Messelken and Hans-Ulrich Baer provide a detailed account of the military medical ethics courses
4 and workshops that they offer to medical officers from armies around the world. Alternatively, 4
5 medical students may pursue their medical studies in a military medical university. There is only 5
6 one such university in the United States: Uniformed Services University of the Health Sciences 6
7 (USUHS). USUHS’s director of medical ethics education, Edmund Howe, offers a personal account 7
8 of the challenges he has faced since developing the ethics programme at USUHS over 30 years 8
9 ago in the final chapter: ‘Medical Education: Teaching Military Medical Ethics at the Uniformed 9
10 Services University of the Health Sciences’. Each of these reports complements the other. 10
11 The ICMM programme, under the direction of Messelken and Baer, offers a comprehensive 11
12 curriculum for military medical ethics that focuses on medical ethics and military ethics in tandem. 12
13 Basic medical ethics is patient rights centred while military ethics emphasizes *raisons d’état* 13
14 and military imperatives during war. Professional codes of ethics and patient rights govern the 14
15 implementation of medical ethics, while international humanitarian law (IHL), the law of armed 15
16 conflict (LOAC) and the JWT regulate military ethics. Each of these legal and normative regimes is 16
17 separate from the other so that the challenge is always to reconcile the two. To help do so, Baer and 17
18 Messelken offer a formal curriculum that teaches students the legal and philosophical principles 18
19 governing the patient-soldier role and the dual loyalty conflict that it engenders, guidelines for 19
20 treating the wounded and regulations protecting detainees during interrogation. Howe’s programme 20
21 at USUHS covers similar ground but instructs medical students, not practising military physicians. 21
22 As such, Howe’s account demonstrates how he prods his students’ moral intuitions and presses 22
23 them closely on their moral decisions and judgements. He disavows any attempt to articulate the 23
24 ‘right answer’. Rather, his goal is to get his students to articulate and defend *their* answer with 24
25 sound moral arguments. In doing so, he gets up close and personal to describe his classroom 25
26 confrontations with students, their reactions to the various practitioners that he brings into the 26
27 classroom, and his test instruments and grading techniques. 27
28 There are, of course, many other questions for researchers to address. As the Western forces 28
29 wind down their wars in Iraq and Afghanistan, for example, long-term care for veterans will assume 29
30 a prominent place on the public agenda. As the military takes increasing interest in neuroscience, 30
31 nanoscience and other cutting edge technologies, a vast array of bioethical and moral concerns 31
32 will emerge. With this volume, the editors hope to spur research in these and other fields and offer 32
33 readers a wealth of valuable educational, philosophical and legal resources as they wrestle with 33
34 military medical ethics in the twenty-first century.