CHAPTER 16

The Proper Marking of Medical Personnel and Equipment: Lessons from the Great War

By Patrick Naughton

In April 1917, after repeated attempts at diplomacy aimed at keeping itself out of the conflict raging in Europe, the United States declared war against Imperial Germany and later its allies. The 65th Congress authorized and directed that the President "employ the entire naval and military forces of the United States and the resources of the Government to carry on war against the Imperial German Government; and . . . bring the conflict to a successful termination all of the resources of the country are hereby pledged."[1] Thus, the United States entered into the first world conflict in which Allied nations truly attempted to undertake a whole-of-government approach, with the aim of achieving unity of effort between its joint military forces, interagency communities, and intergovernmental entities. In addition, the Allied nations attempted to extend this coordination not only within their own governments but also among their Allies as well.

The new multidomain operations (MDO) concept, and its efforts to prepare the U.S. military for the next 25 years of conflict and beyond, will require the coordination of military forces across allied nations like never before. World War I offers a number of lessons on how to anticipate future conflict and prepare forces to operate within a rapidly developing operational environment. As part of this understanding, the military medical

community must determine how it will conduct operations within future war theories before the onset of hostilities. Five areas are examined in this chapter to appreciate the lessons that can be gleaned from the Great War. First, the newly developing MDO concept and its link to World War I are discussed. Second, the conceptual visualization of the Great War is compared with today's operational understanding of the battlefield. Third, the proper employment and marking of medical personnel, units, and equipment that were implemented during the conflict are examined. Fourth, the impact these medical practices had on later conflicts and their steady decline over the past years are scrutinized. Lastly, how medical units could be employed within the future MDO concept and the ethical challenge that it presents to military leaders are considered.

After World War I, the Surgeon General of the Army, Major General Merritte Ireland, commented on the difficulty of providing medical support during major combat operations. Ireland wrote that medical support during the war

> *was a complex and sometimes desperate matter, often hampered by lack of transportation facilities, by the impassable condition of roads boggy with mud or crowded with other vehicles, and by the generally torn up condition of the combat areas. It required the prompt mobilization of every kind of vehicle, such as ambulances, motor trucks, lorries and other rolling stock attached to the sanitary formations which move forward with the fighting divisions, as well as the establishment of evacuation hospitals and rest stations on the line of communications and of base hospitals and convalescent camps in the zone of the interior, with their own type of transportation, including ambulance service, hospital trains, hospital barges and hospital ships.*[2]

This passage could literally be plucked from history and used to describe the challenges now facing the military medical community as it grapples to understand how it will fit within the new MDO concept and possible

large-scale combat operations (LSCO) against a peer competitor. World War I can thus offer leaders a valuable case study in major combat operations when considering the proper employment of medical personnel, units, and equipment within ethical guidelines and law of war guidance.

The MDO Concept and Its Link to World War I

General David Perkins, USA, in his first of a series of articles published in *Military Review* to explain his concept of MDO, opens his discussion with links to the "open warfare" concept stressed by American Army General John Pershing at the eve of the U.S. entry into World War I. He explains the disconnect between the proposed doctrine and battlefield realities that the United States and its Allies struggled with throughout the war. This disconnect resulted in such heavy casualties that it "forced the combatants to realize that the lethality of rapidly firing artillery, machine guns, mortars—and later, gas, tanks, and aircraft—made tactics such as those advocated by Pershing's open warfare doctrine almost suicidal."[3] This later resulted in Pershing commenting that "perhaps we are losing too many men" when beginning to reexamine U.S. doctrine in World War I.[4]

Establishing direct connections between the development of doctrine during the Great War and the new MDO concept is easy. In fact, General Perkins makes that same correlation throughout his three-part series of articles on MDO. He also makes the valid point that, unlike what was undertaken during World War I, present-day doctrine must not have change forced on it as "[c]reating new doctrine in the midst of large-scale combat is a costly endeavor because doctrinal tactics are devised using trial and error and are paid for in blood."[5] Spearheaded by General Perkins and others, the American military, rather than waiting for the future commencement of LSCO with a peer competitor, is beginning to discuss what the next fight will look like now. Essentially, the MDO concept "calls for ready ground combat forces capable of outmaneuvering adversaries physically and cognitively through extension of combined arms across all domains."[6] Currently, the domains are understood as land, sea, air, space, and cyberspace.[7]

General Perkins is, of course, not the only senior U.S. Army leader to recognize that a shift in our understanding of potential future conflict is necessary. The 39th Chief of Staff of the Army, General Mark Milley, gave a speech on the same topic. General Milley also linked what is presently occurring directly to the First World War:

> *In all the past cases of significant change in the character of war, the elements were all present prior to the war, but few if any ever realized their significance. . . . All the elements of World War I were visible in the Civil War, the Franco-Prussian War, the Boer War, the Russo-Japanese War, but very few understood their profound impact in the summer of 1914, as Europe slid over the abyss.*[8]

In addition, the MDO concept is not being embraced or developed by the Army alone, as evidenced by a recent article co-authored by General Perkins and General James M. Holmes, USAF. In it, they discuss attempts to integrate and converge "land and air domain capabilities in order to create the merged multidomain capabilities that will be required for success in future combat."[9]

The MDO theory is unique because it is still a developing concept that has only recently been officially codified in doctrine.[10] As MDO continues to evolve, it is important to remember that it mainly "offers a hypothesis to inform further concept development, war-gaming, experimentation, capability development and culture change."[11] Technology and its application within the different domains is evolving so quickly that military leaders are wrestling with the impact it will have on future war. Because of this, World War I is closely linked to today's developing MDO concept in preparing for possible future LSCO. Though the concept did not exist then, it is easy to overlay today's definition of the different domains onto the Great War. Just like today, new technologies in aircraft, machine guns, naval ships, and electronic communications developed quickly just prior to and during the First World War, so much so that military leaders from the time period struggled to connect strategic, operational, and tactical

doctrine to battlefield realties, which unfortunately resulted in massive casualties and disastrous results. Thankfully, today's military leaders have realized the folly of adjusting and creating doctrine on first contact and are attempting to prepare for future war now.

Visualizing the Battlefield

The theater of operations in the First World War was divided into three main sections. Starting with the area closest to the enemy and moving back toward one's home country, the sections were called the Zone of the Advance, Lines of Communication, and the Service or Zone of the Interior.[12] Military medical apparatus in the Zone of the Advance, also called the Military Zone, consisted of aid stations, field dressing stations, and field hospitals, with casualties evacuated through these roles of care in that order.[13] Within the area dubbed the Lines of Communication, which served as the "connecting link between the service of the interior and the zone of the advance," there was a further subdivision into advance and base sections.[14] The advance section included evacuation hospitals, and the base area was where the base hospitals would be established in Hospital Zones.[15] Casualties were evacuated through the roles of care via the aid stations, field dressing stations, evacuation hospitals, and then finally the base hospital, where the highest level of care was located.[16] Lastly, the Service of the Interior, usually a nation's home territory, provided convalescent and general hospitals focused on the recovery and mobilization of troops.[17]

To compare the World War I conceptualization of the battlefield to today, current military doctrine must be examined. Recently, the Army issued updated doctrine regarding the understanding of the "physical arrangement of forces in time, space, and focus" within an area of operation (AO).[18] This new doctrine, published in October 2017 in Field Manual (FM) 3-0, *Operations*, breaks down the AO into five main parts. Listed in order from closest contact with the enemy, they include the deep, close, consolidation, joint security, and strategic support areas.[19] Looking at modern day roles of care starting from closest to the forward line of troops, the close area

consists of role one and two assets mostly found in Brigade Combat Teams and several Echelon Above Brigade (EAB) units that provide direct support to the modular division and support to other EAB units. The consolidation, joint security, and possibly some in the strategic support areas contain role three assets that provide the most definitive level of care in theater. Role four facilities are located within the continental United States.[20]

As medical planners consider the Health Service Support (HSS) plan and layout of medical units, it becomes important to understand the different domains and how the AO is divided within the new MDO concept. Regardless of how the battlefield is conceptually visualized, it is important to understand, as was noted in a British World War I FM that is still applicable today within the MDO concept, that the "presence of a number of sick and wounded proves an encumbrance to a Commander, and since his mobility will be handicapped by being compelled to carry a number of unfit men, every effort is made to remove them to the lines of communication with all despatch."[21] Like Surgeon General Ireland's comment, this doctrinal statement from the Great War is timeless and will never change, no matter what future warfare theory is presented.

Employment of Medical Personnel, Units, and Equipment

Just like combat forces, the military medical community in World War I had to quickly adjust to the new realities of warfare. Due to the deadly effectiveness of these newly implemented killing technologies and weapons of mass destruction, combined with the lowered standards of ethical thresholds on all sides regarding their employment, warfare soon resulted in massive casualties at a level never before experienced. As such, all nations had to aggressively adjust their HSS systems to safely and quickly clear the battlefield of wounded and sick in order to maintain morale and free combat forces to conduct operations. During the war, the United States and its Allies refined the proper markings of medical equipment, personnel, and units, setting a precedent for the world to follow through to the next

world war and beyond. Properly marked personnel with arm brassards, red crosses on medical equipment and units, combined with a system of displayed lanterns in low visibility, all sought to enhance the protected status of HSS structures and evacuation routes in order to improve the survivability of patients on the battlefield.

The 1918 update to the U.S. Army's *Manual for the Medical Department* stated that "all persons belonging to the sanitary service . . . attached to the Army wear on the left arm a brassard bearing a red cross on a white ground, the emblem of the sanitary service of armies."[22] At the time, the sanitary service was how the Army's Medical Department was referred to. In addition, the manual decreed that "All sanitary formations display during daylight (reveille to retreat) the Red Cross flag. . . . At night the positions of sanitary formations are marked by green lanterns." Lastly, "All materiel pertaining to the sanitary service is also marked with the Red Cross emblem, a red cross on a white ground."[23] The manual contained packing lists for different types of medical units in the Army. All of the lists included "Flag, distinguishing, Red Cross."[24]

The clear marking of medical units and personnel was a survival technique that was discovered under combat conditions during the war. "Appendix A: Report on Organization, Equipment, and Functions of the Medical Department," found in *The Medical Department of the United States Army in the World War*, discusses this in detail.[25] These books, 17 volumes in all, were published during the 1920s under the direction of Surgeon General Ireland. They contain a plethora of lessons learned and tactics, techniques, and procedures (TTP) from the war that the Army Medical Department could study as it prepared for its next conflict. The appendix states, "Every hospital should be provided with a cross of white canvas . . . to be pinned firmly to the earth, preferably on green grass-before any other detail is given attention. . . . The adoption of this expedient saved many hospitals from enemy fire."[26] It then addresses the criticality of this marking: "The importance of placing this white cross before any part of the unit is erected lies in the fact that aerial observers take photographs in the

daytime and bombing planes discharge their missiles by night upon any point indicated in the picture, unless this cross is observed."[27] Volume eight of the set concludes "that many hospitals were spared by enemy airplanes because of their being marked in the way indicated . . . bombing planes discharged their missiles against points indicated . . . unless the cross marking a hospital site was plainly observable."[28]

Proper medical markings were not limited to medical facilities alone. Evacuation platforms were also clearly marked to include field ambulances and hospital trains. A TTP learned during the war was that "Each machine [ambulance] should have a large white cross painted on its top and a red cross on the sides, the color of the ambulance being khaki, against which background the red and the white crosses are emphasized. The white cross on top is necessary for protection against enemy aircraft."[29] Properly marking hospital trains were also discussed; these specially constructed railcars were crucial for transporting patients from evacuation hospitals back to the Hospital Zones: "The exteriors of the cars are the color of Army khaki, with the Red Cross of the Medical Department imposed upon the sides, roof, and at each end of the cars."[30]

In addition to learning the importance of properly marking medical units and equipment to avoid destruction, the Army Medical Department grew to understand that a hospital's location was directly related to survivability. The Army realized that "care must be exercised to avoid crossroads, which are targets for enemy artillery, and the vicinity of ammunition dumps or aerodromes, or the vicinity of railheads, factories, or conspicuous buildings that are on ground recently vacated by the enemy."[31] Furthermore, "advantage should be taken of existing buildings which do not offer a target. All selected sites will be conspicuously marked with a large white cross upon the ground upon a dark background to preclude damage by indirect fire following aerial observation."[32]

None of this is meant to imply that by simply displaying a large red cross, protection was guaranteed for a medical unit. World War I frequently saw the enemy disregard the protections this marking was meant to provide.

In addition, this protection is not realistic for medical units close to actual combat. In the war, it was common practice for aid stations close to the front to be instructed that in "modern combat every available cellar, dug-out, or cave affording protection from shell fire must be made use of, and if the terrain does not afford such shelter first aid must be rendered in the open and the evacuation to a sheltered location by litter made as quickly as possible."[33] This same concept is recognized today as the "proximity to combatant" notion, which essentially means that the closer medical personnel and units are to combat "gives no just cause for complaint. Medical and religious personnel are deemed to have accepted the risk of death or injury due to their proximity to military operations."[34]

Despite the understanding that medical units close to the front were at risk, it was generally accepted on all sides that those medical units clearly marked in the rear areas were to be respected; of course, this did not always occur. War diaries and primary sources are riddled with examples of proper markings being ignored. In his war diary, one man from Canada described a conversation he had with another after the initial bombing of the hospital he worked in: "There wasn't a bed left standing. Luckily, we had removed most of the patients into the cellar—but those who were left are still there, buried in the ruins. 'The usual German respect for the Red Cross!' I commented bitterly. 'The flag makes a good mark for their artillery,' he returned, with a smile; 'they always look for us.'"[35] An American in the war recorded in his memoir, "the Boche [Germans] had bombed the hospital two out of the last three evenings. At first, they thought it a mistake, but when they kept it up it became apparent that there was no mistake. This is a big field hospital in white tents and lots of red crosses plainly visible. I have myself seen it from the air and you can see it more distinctly than anything in the neighbourhood."[36]

Though incidents like this did occur, however, according to General Ireland, "On the signing of the armistice (Nov. 11, 1918), we had available in France for an army of a mean total strength of nearly two million, 261,403 beds, in 153 base hospitals, 66 camp hospitals and 12 convalescent

camps."[37] This massive amount of large medical facilities from the Americans alone, some with 1,000 beds each, would not have survived on the battlefield without adherence to the guidelines, that is, posting them away from military objectives and properly marking them with a clearly definable red cross.

The Impact of World War I on the Future

All these medical TTPs and lessons learned during the war still guide law of war and ethical guidance for the employment and emplacement of military medical facilities and evacuation platforms, which is codified in international law and official U.S. doctrine. The well-known Geneva Convention, which refers to a set of agreements signed by numerous countries after World War II that established rules of war, contains numerous articles directly related to medical forces on the battlefield. However, Articles 19, 24, 39, and 42 are critical because they speak to the proper employment and markings of medical units that have an impact on the new MDO concept and FM 3-0. Signatories to the Geneva Convention and its protocols agreed to the following:

- 1st Convention, Article 19: Fixed establishments and mobile medical units of the Medical Service may in no circumstances be attacked, but shall at all times be respected and protected by the Parties to the conflict. . . . The responsible authorities shall ensure that the said medical establishments and units are, as far as possible, situated in such a manner that attacks against military objectives cannot imperil their safety.[38]
- 1st Convention, Article 24: Medical personnel exclusively engaged in the search for, or the collection, transport or treatment of the wounded or sick, or in the prevention of disease, staff exclusively engaged in the administration of medical units and establishments, as well as chaplains attached to the armed forces, shall be respected and protected in all circumstances.[39]

- 1st Convention, Article 39: Under the direction of the competent military authority, the emblem shall be displayed on the flags, armlets and on all equipment employed in the Medical Service.[40]
- 1st Convention, Article 42: The distinctive flag [red cross or other recognized emblem] of the Convention shall be hoisted only over such medical units and establishments as are entitled to be respected under the Convention. . . . Parties to the conflict shall take the necessary steps, in so far as military considerations permit, to make the distinctive emblems indicating medical units and establishments clearly visible to the enemy land, air or naval forces, in order to obviate the possibility of any hostile action.[41]

Despite international protocols and guidance as well as internal U.S. regulations, however, the Department of Defense (DOD) has witnessed the steady degradation of the proper marking of medical personnel and equipment, while America's allies have largely maintained this standard. The *Department of Defense Law of War Manual*, last updated in December of 2016, supports the Geneva Convention articles and codifies the guidance to all DOD branches, which can then be found in Service-specific law of war field manuals and doctrine.[42] Though the manual supports the conventions, it does contain one crucial caveat:

> *The display of the distinctive emblem is under the direction of the competent military authority. Thus, the military command may authorize the removal or obscuring of the distinctive emblem for tactical purposes, such as camouflage. Similarly, it would be appropriate for the distinctive emblem to be removed if it is assessed that enemy forces will fail to respect the emblem and seek to attack medical personnel; display of the emblem in such circumstances would not be considered "feasible" because in that instance it would not result in a humanitarian benefit. In the practice of the United States, removal or obscuration of the distinctive emblem has generally been*

> *controlled by the responsible major tactical commander, such as a brigade commander or higher.*[43]

This stipulation has dominated the past 18 years of employment of medical units and personnel due to the nature of the adversaries faced, who typically do not respect any international standards. Unfortunately, this thought process continues to direct military medical and nonmedical planners regarding the deployment of medical units in consolidation areas. Though the *DOD Law of War Manual* allows for this proviso, it does caution that the "absence of the distinctive emblem may increase the risk that enemy forces will not recognize the protected status of military medical . . . and attack them in error."[44]

Lastly, no official guidance has ever been issued to stop wearing the red cross brassard for medical personnel in combat areas. Once a common accoutrement to all U.S. military medical personnel, it has been removed from usage, though all U.S. allied medical personnel still wear it. In fact, the medical red cross brassard is still authorized for wear per official U.S. Army uniform guidance.[45] It has become another victim of the past 18 years of counterinsurgency operations where, rightfully so, many believe that the wearer presents a target, as seen in Iraq and Afghanistan. Despite this, DOD has begun to reexamine the proper marking of medical personnel. To adhere with the international Geneva guidance that all medical personnel shall "carry a special identity card bearing the distinctive emblem" and that the "card shall be water-resistant and of such size that it can be carried in the pocket," DOD now includes the red cross on identification cards.[46] Beginning July 2014, DOD began to permanently "issue the Geneva Conventions Common Access Card with a red cross emblem to military personnel and DOD civilian employees in certain medical, medical auxiliary or religious occupational specialties."[47] This is a step in the right direction and something not done until now; previously, this card was issued before deployment as a slip of paper, if at all.

The Ethical Challenge

World War I witnessed numerous ethical and law of war challenges that included the harnessing of industrial technologies and the use of poison gas, both intended to create massive casualties. President Woodrow Wilson, in his address to Congress to obtain a declaration of war in April 1917, directly referenced historical attempts at establishing international laws of war that

> *had its origin in the attempt to set up some law which would be respected and observed upon . . . where no nation had right of dominion. . . . By painful stage after stage has that law been built up, with meagre enough results, indeed, after all was accomplished that could be accomplished but always with a clear view, at least, of what the heart and conscience of mankind demanded.*[48]

Wilson went on to describe in detail the various ethical and law of war violations that Germany had committed during the war and declared that the "challenge is to all mankind."[49] According to Wilson, its enemies' erosion of ethical and law of war standards was a root cause of America's entry into the conflict.

The war itself presented numerous ethical dilemmas at all levels. Unrestricted submarine warfare, blockades aimed at starving civilian populations, ethnic-driven atrocities, and the use of horrendous weapons at the tactical level all presented ethical challenges that leaders had to wrestle with during the conflict. Today, as the United States emerges from over 18 years of conflict, it is struggling to posture itself for the next big potential fight. As General Milley declared, "We have dedicated significant time and resources to thinking about drivers of change, and the future operational environment, how warfare is changing and how we must adapt our doctrine, our organizations, equipment, training, and leader development."[50] The MDO concept is the driving conceptual framework through which the future of warfare is being considered. With this thought process, senior leaders must again consider and anticipate the ethical challenges that may

occur over the next 25 years before they happen, rather than during the conflict, as was witnessed in World War I.

As a part of this forward thinking, it is crucial that the military medical community participates in the discussion. Currently, as the MDO concept is being presented, many military leaders believe that all units on the battlefield "will likely have to be small. They will have to move constantly. They will have to aggregate and disaggregate rapidly. They'll have to employ every known technique of cover and concealment. In a future battlefield, if you stay in one place for longer than two or three hours, you'll be dead."[51] This concept of deploying units directly conflicts with doctrinal and law of war guidance on how medical Echelon Above Brigade units are employed in the consolidation areas to provide Health Service Support. Even the newly designed field hospitals could not follow these criteria.[52] World War I and its HSS plans, combined with its marking of medical units, equipment, and personnel, offer the perfect vehicle to study the employment of medical units within the new MDO concept. This raises a core ethical question: Do lessons from the First World War—for example, clearly positioning, marking, and employing medical units to enhance their survivability—still hold merit? Or is this an outdated concept and the only protection from deep strikes comes from smaller, nimble units that are camouflaged?

Conclusion

As America emerges from this recent period of conflict, it must look forward toward what may come next. Though this appears challenging, the U.S. medical community has done it before. In 1956, the U.S. Army Center of Military History, working with the Army Medical Department, published an exhaustive history of medical activities in World War II. Like the earlier accounts published in the 1920s, this one sought to enlighten Army medical personnel "who daily face policy and management problems similar to those recounted here."[53] By 1956, the Army had fought three major large-scale combat operations in the first half of the century: World War I, World War II, and the Korean War. It faced an uncertain future in a

Pentomic Age and the Army Medical Department once again found itself trying to define its role as new combat doctrine was being developed to counter Soviet nuclear threats.

Interestingly, this new history of medicine described a direct link back to World War I medical doctrine and the interwar years, claiming, "The Surgeon General and his associates, like many others in the Army and the Government at large, found it difficult to break peacetime habits of thought and action in order to plan imaginatively for a second World War."[54] It discussed many of the TTPs from World War II and linked their development directly back to World War I.[55] It concluded that this direct historical continuity between doctrine development, practical application, and lessons learned is

> *merely a reminder that the full meaning . . . can only be grasped if it is read with some knowledge of earlier events. Even without this background, however, readers who now or in the future are engaged in the work of hospitalization and evacuation should find much in the account to help them build on the achievements and avoid the pitfalls of the past.*[56]

Fortunately, today's senior military medical leaders are embracing new discussions and ideas informed by history on how to better employ medical assets on the battlefield.

The future of warfare is ambiguous and multifaceted; however, even General Milley concedes that within this uncertainty and complexity, one of the few things that the military must still deliberately plan for is medical support.[57] As America shifts its focus to LSCO and the MDO concept, it is important to reexamine, as was done in World War I, the Geneva Convention articles and law of war guidance when considering medical support for future conflicts over the next 25 years. When determining how military medicine will be employed in the future within the MDO concept, senior leaders encounter the core ethical question: Do we adopt the lessons of the First World War and clearly position, mark, and employ our medical units

so there is no mistaking what they are? Or do we attempt to camouflage them in the hopes that this will protect them from enemy deep strikes extending into the consolidation area?

The MDO concept and the perceived posture of possible adversaries are forcing the United States and its allies to reexamine ethical imperatives and law of war guidance when considering medical support for future conflicts. The First World War and the actions taken on all sides to mark and protect medical units and personnel before, during, and after the conflict offer numerous lessons for the United States and its allies. It should be studied by military professionals to discover the links between the doctrinal and conceptual changes that occurred before, during, and after the interwar years to truly understand the shift occurring today.

Today's threats present the most significant readiness challenge to U.S. forces since the Cold War. As the United States shifts from stability and counterinsurgency operations and begins to consider the threats posed by near-peer competitors, such as Russia and China, it must examine the proper markings of medical units and personnel per international agreements and law of war guidance and form a commensurate medical posture with its allies. For each threat, America must determine prior to the advent of hostilities what protected posture its medical units will adopt within the MDO concept and LSCO. Entering a conflict with inadequately marked medical units or personnel will, due to mistargeting, result in massive disruption to the ability to provide care. In addition, regardless of whom America faces, its medical posture must be coordinated with its allies. To avoid learning costly lessons in the opening phases of hostilities with a near-peer competitor, the U.S. military must have this conversation now.

Notes

[1] Joint Resolution Declaring War Against Germany, Pub. L. No. 77-331, 55 Stat. 796 (1941).

[2] Merritte W. Ireland, *The Achievement of the Army Medical Department in the World War: In the Light of General Medical Progress* (Chicago: American Medical Association, 1921), 8.

[3] David G. Perkins, "Multi-Domain Battle, Driving Change to Win in the Future," *Military Review* 97, no. 4 (July–August 2017), 6, available at <www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/July-August-2017/Perkins-Multi-Domain-Battle/>.

[4] Ibid.

[5] David G. Perkins, "Preparing for the Fight Tonight: Multi-Domain Battle and Field Manual 3-0," *Military Review* 97, no. 5 (September–October 2017), 7, available at <www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/September-October-2017/Perkins-II-Preparing-for-the-Fight-Tonight/>.

[6] *Multi-Domain Battle: Combined Arms for the 21st Century* (Fort Eustis, VA: U.S. Army Capabilities Integration Center, January 18, 2017), available at <www.arcic.army.mil/App_Documents/Multi_Domain_Battle.pdf>.

[7] *Cross-Domain Synergy in Joint Operations: Planner's Guide* (Washington, DC: The Joint Staff, 2016), 5.

[8] Mark A. Milley, "AUSA Eisenhower Luncheon, October 4, 2016," available at <http://wpswps.org/wp-content/uploads/2016/11/20161004_CSA_AUSA_Eisenhower_Transcripts.pdf>.

[9] David G. Perkins and James M. Holmes, "Multidomain Battle: Converging Concepts Toward a Joint Solution," *Joint Force Quarterly* 88, no. 1 (January 2018), 54, available at <http://ndupress.ndu.edu/Publications/Article/1412174/multidomain-battle-converging-concepts-toward-a-joint-solution/>.

[10] The term *multidomain operation* first entered official doctrine with the publication of Field Manual (FM) 3-0, *Operations* (Washington, DC: Headquarters Department of the Army, October 2017).

[11] *Demand Reduction: Setting Conditions to Enable Multi-Domain Battle White Paper* (Fort Eustis, VA: U.S. Army Capabilities Integration Center, February 21, 2018), 1.

[12] *Manual for the Medical Department, United States Army* (Washington, DC: U.S. Government Printing Office, 1918), 177.

[13] Ibid., 204, 210–211.

[14] Ibid., 224.

[15] Ibid., 225.

[16] Ibid., 226.

[17] Ibid., 194–197.

[18] FM 3-0, 1–30.

[19] Ibid.

[20] FM 4-02, *Army Health System* (Washington, DC: Headquarters Department of the Army, 2013), 1–7, 1–10.

[21] G.R.N. Collins, *Military Organization and Administration* (London: Huge Rees, Ltd., 1918), 272.

[22] *Manual for the Medical Department*, 184.

[23] Ibid.

[24] Ibid., 270, 275, 283, 301.

[25] Joseph H. Ford, *The Medical Department of the United States Army in the World War*, vol. 2, *Administration American Expeditionary Forces* (Washington, DC: U.S. Government Printing Office, 1927).

[26] Ibid., 855.

[27] Ibid.

[28] Charles Lynch, Joseph H. Ford, and Frank W. Weed, *The Medical Department of the United States Army in the World War*, vol. 8, *Field Operations* (Washington, DC: U.S. Government Printing Office, 1925), 170.

[29] Ford, *Medical Department*, 853.

[30] Ibid., 888.

[31] Ibid., 878.

[32] Ibid.

[33] Ibid., 882.

[34] *Department of Defense Law of War Manual* (Washington, DC: Department of Defense, 2016), 458.

[35] F. McKelvey Bell, *The First Canadians in France: The Chronicle of a Military Hospital in the War Zone* (New York: George H. Doran Company, 1917), 177.

[36] Paul B. Hoeber, *History of the Pennsylvania Hospital Unit (Base Hospital No. 10, U.S.A.) in the Great War* (New York: By the Author, 1921), 142.

[37] Ireland, *The Achievement of the Army Medical Department in the World War*, 7.

[38] International Committee of the Red Cross, "Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field. Geneva, 12 August 1949, Article 19."

[39] Ibid., "Article 24."

[40] Ibid., "Article 39."

[41] Ibid., "Article 42."

[42] *Department of Defense Law of War Manual*.

[43] Ibid., 496.

[44] Ibid., 496–497.

[45] Department of the Army, Pamphlet 670-1, *Guide to the Wear and Appearance of Army Uniforms and Insignia* (Washington, DC: Headquarters Department of the Army, 2017), 231–232.

[46] International Committee of the Red Cross, "Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field. Geneva, 12 August 1949, Article 40."

[47] Amaani Lyle, "DOD to Include Red Cross Emblem on Some Common Access Cards," *DOD News*, June 11, 2014, available at <http://archive.defense.gov/news/newsarticle.aspx?id=122454>.

[48] Woodrow Wilson, *Address to Congress to Request Declaration of War Against Germany* (Washington, DC: U.S. Government Printing Office, 1917), 3, available at <https://lccn.loc.gov/9264310>.

[49] Ibid., 4.

[50] Milley, "AUSA Eisenhower Luncheon, October 4, 2016," 8.

[51] Ibid., 15.

[52] For a discussion on the new Army Field Hospital, see Ellen Crown, "Army Combat Support Hospitals Converting to New Modular Field Hospitals," *Army.mil*, July 11, 2017, available at <www.army.mil/article/190657/army_combat_support_hospitals_converting_to_new_modular_field_hospitals>.

[53] Clarence McKittrick Smith, *The Medical Department: Hospitalization and Evacuation, Zone of Interior* (Washington, DC: U.S. Army Center of Military History, 1956), ix.

[54] Ibid., 6.

[55] Ibid., xi.

[56] Ibid., xi.

[57] Milley, "AUSA Eisenhower Luncheon, October 4, 2016," 16.