

Wounded, alone, and dying on a battlefield was what soldiers could expect after being shot on the battlefield during the Civil War. The medical department of the Union Army was outdated and unprepared for what was expected of them during the war until Surgeon General William Alexander Hammond reorganized the medical department. One of the most significant improvements was Jonathan Letterman's Ambulance System. This new system not only provided a quick and successful method of ambulance transport, but in doing so it saved the lives of many wounded soldiers.

The system for evacuation of the wounded in place prior to the introduction of Letterman's Ambulance System in 1862 was poorly organized and inefficient. One main reason for this was neither the North or South were prepared for a major war. Past American military conflicts were not of the same scale as the Civil War, so the army did not expect the amount of wounded soldiers that accompanied this great war. At the onset of the war, a typical regiment had one surgeon and one assistant surgeon assigned to it.¹ Field care depended on the assistant surgeon because there was no special corps to supply ambulances. In preparation for a battle, the regimental surgeon would establish a field hospital and the assistant surgeon would accompany the soldiers on the battlefield. In the field, the assistant surgeon could rely only on stretcher bearers, who often were unreliable, to help care for the wounded. The stretcher bearers were under the command of the Quartermaster's corps and therefore had duties other than that of medical care. Many of the stretcher bearers were regimental cooks and musicians who were often called upon to assist the wounded in battle. No official training was provided to the men to

¹ James O. Breeden, "Field Medicine at Antietam," *Caduceus; A Museum Quarterly for Health Sciences* 10, no. 1 (1994): 10.

perform those tasks.² The assistant surgeon not only had to rely on untrained help but a lack of equipment further limited their scope of practice. The poorly constructed medical system resulted in many wounded soldiers having to become walking wounded and find their way to field hospitals. The lucky immobile wounded would be helped by other wounded or able bodied soldiers, the others were left in the field to be picked up after the battle or die.³

Many wounded soldiers arrived at field hospitals by means other than that of the medical transport. The field hospitals were important because they served as most immediate advanced care hospital. Many of the ambulances allotted to the Quartermaster's corps were taken over as personal supply wagons by officers or used for military operations. The few ambulances available were "[t]he one horse, two-wheeled ambulance" which offered an extremely bumpy and uncomfortable ride.⁴ To add to the deficiencies of the medical system, the available field hospitals were houses, barns, and churches commandeered by the surgeons. These make-shift hospitals operated with limited supplies and were close to the battle line.⁵ Many wounded needed the level of care offered by general hospitals but these were located far from the battlefield. With a lack of transportation, the wounded had difficulty receiving the proper medical attention.

Prolonged exposure of the battlefield wounded led to numerous additional medical problems. Aside from the wounds received on the battlefield, shock was the most immediate and serious side effect of bullet and shrapnel wounds. Shock is the result of the body's inability to compensate for severe blood loss and trauma. The onset of shock is directly related to the amount of blood lost, therefore large amounts of blood loss result in a quicker onset of shock. If

² George W. Adams, *Doctors in Blue: The Medical History of the Union Army in the Civil War*, New York: Henry Schuman, Inc., (1952), 61-62.

³Breeden, "Medicine," 10-14.

⁴ Ibid., 13.

⁵Ibid., 14.

the shock was this severe, Civil War medicine at the time could do nothing for the patient. If a wounded soldier had a small wound that was not bleeding profusely, medicine at the time could save the patient. However, even a small wound could bleed for hours without clotting, eventually resulting in the onset of shock. Depending on the severity, a body can compensate for blood loss for four to five hours before going into shock. The medical evacuation system, or lack thereof, at the beginning of the Civil War before the Letterman System was so insufficient that wounded soldiers could be left untreated in the battlefield for days. In one instance, Surgeon General William Hammond wrote a letter stating that eight days after the Battle of Second Bull Run in 1862, “600 wounded still remain on the battlefield.”⁶ If the wounded soldier never succumbed to shock, then infection was the next area of concern.

If wounded soldiers were lucky enough not to go into shock on the battlefield, the prolonged exposure led to infection and disease. Any open wound is at risk of infection and once a wound is infected it will only get worse with time if left untreated. Many wounds received in the battlefield were exposed to dirt and sweat. The typical Civil War soldier had limited access to showers and rarely had clean clothes. As a result, wounds received on the battlefield were quickly infected because the minie ball would pull in clothing and any other filth into the wound. If a wounded soldier was left untreated on the battlefield for days, infection would set in and become fatal. Even if the wounded did make it to the hospital, poor sanitary conditions in both field and general hospitals aided in the spread of infection. However, the condition of the hospitals was irrelevant if the wounded were unable to make it there in the first place. The aforementioned problems led to necessary changes in the medical system.

⁶ Frank R. Freeman, *Gangrene and Glory: Medical Care during the American Civil War* (Cranbury, NJ: Associated University Press, Inc. 1998), 76.

The medical reforms of the Union Army began under the leadership of Surgeon General William A. Hammond. Appointed on April 25, 1862, Hammond recognized the need for reform and chose Jonathan Letterman, an army medical director, to develop an efficient method of wounded evacuation.⁷ Letterman focused on three areas of improvement: standardization, a revised medical chain of command, and an independent ambulance corps.⁸

Standardization and a revised medical chain of command were necessary to create a successful ambulance corps. Standardization dealt with the availability of medical supplies and the way in which they were supplied to the medical corps. This new method of organization required that ambulances and supply wagons be set up the same as every other ambulance supply wagon. The new setup allowed for a surgeon to practice with any regiment without having to conform to new standards and procedures.⁹

Letterman revamped the medical chain of command that in the past that had been a system of seniority. One of the major problems of the old system was a senior surgeon might not have been as experienced as a newer surgeon, resulting in experienced surgeons being subordinate to inexperienced medical officers. This hindered medical care by basing medical decisions on rank and not experience.¹⁰ The new system made sure experienced surgeons, regardless of their seniority, were put in charge. The changes in these two areas made it possible for the ambulance system to succeed.

Acting under orders from Surgeon General Hammond, Letterman issued an order of his own on August 2, 1862, which stated,

The allowance of ambulances and transport carts will be: one transport cart, one four-horse and two two-horse ambulances for a regiment; one two-horse

⁷ Adams, *Doctors in Blue*, 31-2.

⁸ Freeman, *Gangrene*, 75.

⁹ *Ibidi.*, 75.

¹⁰ *Ibid.*

ambulance for each battery of artillery; and two two-horse ambulances for the headquarters of each Army Corps. Each ambulance will be provided with two stretchers....The privates of the ambulance corps will consist of two men and a driver to each ambulance, and one driver to each transport cart.¹¹

Under Letterman's new ambulance system, there were three ambulances and a transport cart per regiment. This alone was a major improvement because the average size of an Union regiment was one thousand soldiers. This amounted to there being six available stretchers for the regiment.

The ambulances were under the command of officers from the medical corps rather than from the Quartermaster's Corps. These officers worked with military officers to coordinate rescue operations. Not only were the ambulances committed to providing wounded evacuation for their assigned regiments but they could not be pulled away for different assignments. This put an end to the practice of ambulance carts being used for troop transport and other military operations.

The last weakness of the old system was the lack of untrained men assigned to the ambulances. Because the ambulance corps was now independent from the Quartermaster Corps, medically trained men were assigned to staff the ambulances and did not double as cooks and musicians outside of combat. The crew of the ambulance was now medically trained to assist the wounded and could provide the proper field care to the wounded while they were being transported to field hospitals. The new system also made improvements on the quality of ambulances used. This new system was exactly what the wounded had been waiting for and what the army needed.

This system faced many obstacles during its early stages. The newly formed medical corps and military had some issues starting out. Most significantly, medical officers were rarely

¹¹ Gordon E. Demmann, "Jonathan A. Letterman: Surgeon for the Soldiers," *Caduceus: A Humanities Journal for the Medicine & Health Sciences* 10, no. 1, (1994), 27.

respected as officers by the more hardened army officers, and as a result, communication was poor.¹² Poor communication during battles resulted in the army doing one thing and the ambulance corps trying to redeploy their ambulances to keep up. The availability of supplies also hindered the success of the system's performance despite the efforts made by Letterman to improve the distribution of resources. The system experienced its "baptism by fire" at the Battle of Antietam on September 17, 1862 where the ambulance system's weaknesses were apparent.¹³ Prior to the start of the battle, Letterman requested additional supplies to be sent to the ambulance corps but because of cut supply lines, very little made it through. This resulted in a shortage of medical supplies as the battle progressed.¹⁴ Aside from the need to develop a better way to receive medical supplies, the Letterman System showed significant improvement in ambulance operations than in the past.

In addition to supply shortages and communication errors (not knowing where to send supplies and ambulances), the system proved to be more successful than the past method of wounded evacuation. One member of the ambulance corps stated, "Most of our badly wounded were brought into the hospitals by dark."¹⁵ This observation in itself showed how well the system performed. There were approximately 10,000 wounded soldiers of varying priorities who were removed from the battle field prior to night fall; in the past this would have been impossible.¹⁶ To better understand the impact of the Letterman Ambulance system, the medical operations during the Battle of Bull Run and the Battle of Gettysburg demonstrated the differences between the old and the new systems.

¹²Adams, *Doctors in Blue*, 61.

¹³Breeden, "Medicine," 12.

¹⁴Dammann, "Jonathan A. Letterman," 29-31.

¹⁵Breeden, "Medicine," 12.

¹⁶Adams, *Doctors in Blue*, 78.

The Battle of Bull Run, fought on July 21, 1861, left over 1200 Union soldiers wounded and approximately 460 dead.¹⁷ This battle occurred over a year before the Letterman System was introduced. A report of Captain James Kelly of the Sixty-ninth New York Militia observed that “the regiment numbered one thousand muskets, and was attended by one ambulance only.”¹⁸ Applied to a major battle such as that of Bull Run, one ambulance would not be sufficient for the amount of wounded that were produced. In addition to the lack of ambulances, the captain also reported there were minimal supplies available for the wounded and field hospitals.¹⁹ Those involved at the Battle of Fort Donelson expressed similar complaints.

The Battle of Fort Donelson, fought February 13-16, 1862, yielded 248 wounded Union soldiers. A report from Surgeon Thomas W. Fry, the medical director of the Third Division in the U.S. Army complained, “In my opinion, which is sustained by all the surgeons with whom I have conversed, the removal of those on whom amputations and other severe operations had been performed was unwise and highly injudicious, endangering the lives of those who might otherwise recover.”²⁰ This report and many others do not criticize the work of the surgeons and assistant surgeons, but that of the ambulances. As Surgeon Fry pointed out, the services available to transport the wounded were poor. Aside from military critics, the public was outspoken about the need of a new ambulance system as well.

The New York Times published numerous articles calling for the formation of an ambulance corps and reported on the treatment of wounded soldiers on the field. Two articles

¹⁷ “Report of Brigadier General Irvin McDowell regarding 1st Bull Run,” The Civil War Archives <http://www.civilwararchive.com>

¹⁸ Report of Capt. James Kelly, Battle of Bull run, July 24, 1861, in *The War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1880-1902), 2: 371.

¹⁹ *Ibid.*, 372.

²⁰ Report of Surg. Thomas W. Fry. Report on Casualties at the Battle of Fort Donelson, February 22, 1862, in *The War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1880-1902), 7: 241-243.

tracked the time the wounded spent on the battle field at Bull Run. Written on September 7, 1862 the first article stated, “The number of wounded scattered over the field to whom no succor has been extended were estimated by a surgeon who left Wednesday morning at 2,000....”²¹ The next day’s article reported, “[T]here were at least two hundred of our wounded remaining upon the battlefield, and as the truce expired at sundown, no doubt at least one hundred of them were left behind owing to the absence of facilities of moving them within our lines.”²² These two articles demonstrate the desperate need for an ambulance corps and showed that the media was lobbying to the government to create one. Once the government responded to the demand, the effects of the Letterman Ambulance System could clearly be seen.

The Battle of Gettysburg was one of the first major battles where the Letterman System worked to its full potential. One of the many reforms of the medical department included the position of chief ambulance officer. One of the responsibilities of this officer was to write reports regarding the performance of their ambulances. One such report was that of Lieutenant Joseph C. Ayers from July 1-3, 1863 at the battle of Gettysburg. Ayers reported that 1,157 wounded were transported over the three day period and no major issues arose.²³ During the same battle, Captain James A. Bates of the Fifth Corps reported that eighty one ambulances of the corps transported 1,300 wounded in twelve hours and in the following 48 hours, an additional 2,600 were transported.²⁴ The success of the ambulance system was not confined to just that of Gettysburg but also to campaigns throughout the remainder of the war.

²¹ “Battle of Bull Run,” *New York Times*, September 7, 1862.

²² “Correspondence from VA: A Visit to the Bull Run Battle-field,” *New York Times*, September 8, 1862.

²³ Report of Lieutenant Joseph C. Ayers, Report to Capt. James A. Bates, July 19, 1863, *The War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1880-1902), 27: 607-8.

²⁴ Report of Captain James A. Bates, Report to Medical Director John Milhau, August 27, 1863, *The War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1880-1902), 27: 597-8.

Captain William F. Drum of the Fifth Corps submitted a report to John J. Milhau, Medical Director of the Fifth Corps. Detailing the actions of the ambulance corps up until June 30, 1864, Captain Drum stated that the 160 ambulances transported 8,000 wounded.²⁵ In a later report, Captain Drum said 926 wounded were transported by eighty ambulances over a period of three days following a battle on August 18, 1864.²⁶ Not only were the numbers a significant improvement, but both officers commended the efforts of the ambulance and their crews. As compared to the previously discussed report of Surgeon Fry, the attitudes were much more positive towards the new system.

In both the Battle of Gettysburg and later campaigns the effects of the Letterman System were significant. To start with, the number of ambulances available was a direct result of the new system. For example, a report mentioned earlier in 1861 claimed only one ambulance was available for a regiment of one thousand men. In 1864, the Fifth Corps was over 17,000 men strong accompanied by 160 ambulances.²⁷ This amounted to approximately nine ambulances for every one thousand soldiers. With the increase in ambulances, the wounded spent less time on the battle field and more time receiving the care they desperately needed. The change caused by this new system was astronomical, and the results were very beneficial to the wounded.

In addition to the increased number of ambulances, the use of them was more effective because of the changes in the command system as well as the availability of supplies. The better communication allowed for the ambulances to be where they were needed without delay.

Increased supplies allowed for many field hospitals to be erected which served as a liaison

²⁵ Report of Capt. William F. Drum, to Medical Director John Milhau, July 10, 1864, *The War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1880-1902), 36: 550-2.

²⁶ Report of Capt. William F. Drum, to Medical Director John Milhau, September 1, 1864, *The War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1880-1902), 42: 455-6.

²⁷ "Union Corps History: 5th Corps," The Civil War Archives, <http://www.civilwararchive.com>.

between battle field medicine and general hospitals. Letterman's method of standardization helped minimize supply issues to the hospitals and ensured smooth operations. Sending and receiving supplies at hospitals were more easily tracked and records were kept of all transactions.

In a way, under the leadership of Letterman and Hammond, the medical system as a whole became official and legitimized. Also, in order for field hospitals to be successful they needed to be able to rely on transportation to send and receive wounded patients. Furthermore, the reliability of the ambulances allowed Letterman to make sure that the "wounded should not be moved too far too soon. The patient needed quiet rest..."²⁸ In the past, it was not unlikely that wounded would be moved needlessly while looking for the field hospital because communication was poor, and many ambulance drivers did not know where the hospitals were. With the new system and better organization, the wounded were usually moved once and brought to the appropriate facility. Combined, these improvements made a world of difference for the wounded soldiers.

Aside from the medical improvements provided by the Letterman System, the army noted that the battle lines remained intact. As discussed previously, prior to the new system, able bodied soldiers would break file and aid the wounded to the rear causing weak points in the battle.²⁹ With the presence of an ambulance corps, the wounded were taken care of and therefore the soldiers could continue to fight.

These reforms were welcome implementation of changes in the eyes of the wounded. Medical care and attention given to the wounded following the Letterman Ambulance System was a significant improvement from conditions in the early years of the Civil War. The Letterman System provided an efficient and reliable means of evacuation for the wounded

²⁸ Demmann, "Surgeon," 31.

²⁹ Adams, *Doctors in Blue*, 96.

soldiers in order to minimize pain, suffering, and further medical problems. Also, the system ensured that no longer would the wounded remain on the battle field for days or weeks.

Although the medical records of the Union Army were not thorough enough, by using present day knowledge of the subject, it can be concluded that fewer soldiers died from shock and infections on the battle field. Infection remained a leading cause of death for wounded soldiers but the Letterman System helped prevent the onset of infection from elements in the battle field. The vast improvements of the medical system were summed up a New York Times article by an unknown journalist who wrote, “the ambulance trains are hurrying up for the reception of the wounded, while the white coverlets of thousands of hospital tents are turn down, and the army surgeons, with aprons on, their instruments in hand, and sleeves [up-rolled], are quietly awaiting the bloody harvest of war. [I]t was the grandest spectacle the world ever saw.”³⁰

³⁰“Success of the Movement North of the James,” New York Times, August 1, 1864.

Bibliography

Primary Sources

“Battle of Bull Run.” New York Times, September 7, 1862.

“Correspondence from VA: A Visit to the Bull Run Battle-field.” New York Times, September 8, 1862.

Official Records of the Union and Confederate Navies in the War of the Rebellion. 128 vols. Washington, D.C.: U.S. Government Printing Office, 1880-1902.

“Report of Brigadier General Irvin McDowell regarding 1st Bull Run.” The Civil War Archives. <http://www.civilwararchive.com> (accessed March 29, 2009).

“Success of the Movement North of the James.” New York Times, August 1, 1864.

Secondary Sources

Adams, George W. *Doctors in Blue: The Medical History of the Union Army in the Civil War*. New York: Henry Schuman, Inc., 1952.

Breeden, James O. “Medicine at Antietam.” *Caduceus: A Humanities Journal for Medicine & the Health Sciences* 10, no. 1 (1994): 8-22.

Dammann, Gordon E. “Jonathan A. Letterman: Surgeon for the Soldiers.” *Caduceus: A Humanities Journal for the Medicine & the Health Sciences* 10, no. 1 (1994): 23-34.

Freemon, Frank R. *Gangrene and Glory: Medical Care during the American Civil War*. Cranbury, NJ: Associated University Presses, Inc., 1998.

“Union Corps History: 5th Corps.” The Civil War Archives. <http://www.civilwararchive.com/CORPS/5thcorp.htm> (accessed March 29, 2009).