ESSENTIAL CIVIL WAR CURRICULUM

The Wounded

By **Glenna R. Schroeder-Lein**

Wounds and resulting amputations are the (often lurid) focus when Civil War medicine is mentioned in popular media, novels, and even historical studies. More recently, scholars have tried to emphasize that disease was responsible for two-thirds of Civil War deaths, as well as countless non-fatal episodes that kept soldiers on both sides out of battle entirely, or at least from doing their best while fighting. Nevertheless, it is important to examine the nature and effects of wounds since one-third of Civil War deaths resulted directly from these wounds, and many more soldiers suffered non-fatal but permanently damaging injuries.

The chief sources of battlefield wounds were artillery ammunition and bullets. Differing styles and sizes of cannon fired a variety of solid shot, grape shot and canister and shells filled with gunpowder that exploded and fragmented. Wounds caused by artillery projectiles were more likely to be instantly or quickly fatal because the missiles could remove or destroy large parts of a soldier's body, such as a head or limb.

Rifle, musket, and handgun ammunition differed somewhat in size and shape, but were essentially either traditional round balls or the recently-developed, bullet-shaped Minié ball, named for its French inventor Claude-Étienne Minié. Round musket balls were more likely to move straight through any impacted body part. Minié balls were an entirely different matter and inflicted the largest number of wounds with an identifiable cause. Designed to be given a spin as they came through the rifled barrel, enabling them to go further and faster, Minié balls were made of soft lead that distorted on contact. The result was that Minié ball impacts rarely left a clean hole. Rather, the ball tore muscles and splintered bones, making wounds very messy. In addition, fragments of uniform, dirt, plants, and other debris brought into the body by the bullet could cause infection. Reconstructive surgery that twenty-first century doctors might be able to perform was not possible in the mid-nineteenth century due to the length of surgery required, the lack of specialized equipment, and the likelihood of infection without understanding the need for stringent antiseptic measures. The severe damage to many arms and legs made amputation the treatment of choice in such cases.

When surgeons (the term for all Civil War doctors whether they operated or not) determined that a soldier needed to have an amputation, it was important for him to have it as soon as possible. Those who had primary amputations (within the first forty-eight

hours) had a better chance of survival than those whose surgeries took place later in the first month (intermediate), or after that ("secondary"). Blood loss, poor nutrition, and widespread infections, not just the wound, contributed to the higher risk for later amputations.

Nevertheless, it is important to realize that most wounds were not so severe and did not require amputation. Far more surgeries consisted of cleaning and stitching wounds, as well as removing bullets and bone fragments. Out of 174,206 known wounds of the extremities treated by Union surgeons, nearly 30,000 wounded soldiers had amputations with approximately a twenty-seven percent fatality rate. (Fatality rates varied depending on the type and location of the amputation). Historians estimate another 25,000 Confederate amputations were performed with a similar fatality rate.

In some cases, surgeons on both sides performed resections or excisions (the terms were interchangeable), removing several inches of shattered bone or a mangled joint. These surgeons attempted to avoid amputation when only the bone and muscles, not the nerves and arteries of the limb, were damaged. This shortened the limb but often left some function. Because the surgery weakened the limb, it was more often performed on arms than legs. Union surgeons performed at least 4,656 resections or excisions, but these operations had a higher fatality rate than amputations.

The likelihood of a soldier surviving a battle wound long enough to be treated at all depended on where on the body he was wounded and with what. Although there are no complete statistics for Civil War wounded (or for pretty much any aspect of the Civil War), there is some very good information, especially for the Union forces, that was collected for *The Medical and Surgical History of the War of the Rebellion*.

Those most likely to be killed in battle were men hit directly by artillery projectiles of any sort, and those suffering a piercing wound in the head or trunk of the body. Most soldiers shot in the extremities were not immediate fatalities unless their limb was blown off or they were wounded in a major artery. As a result, about seventy percent of the wounded in Civil War hospitals had wounds of the extremities. The further a soldier's wound was from his trunk, the greater his chance for survival, with or without an amputation. Joint wounds generally were the most dangerous injuries to the extremities and the amputations most likely to be fatal.

While the majority of Civil War combat wounds resulted from projectiles, there were other causes of injury as well. Sabers and bayonets, often mentioned in period literature, contributed a minority of actual wounds—only 922 were recorded—primarily puncture wounds. Non-traditional weapons usage probably caused a few wounds as well, for example, when troops without ammunition threw rocks, or, in close quarters, wielded guns as clubs.

While sometimes noted by soldiers in their correspondence and diaries, victims of accidents are less likely to be mentioned officially among the wounded. Numerous soldiers were kicked by or fell off the ubiquitous horses and mules, resulting in broken

bones, sprains, and concussions. Others suffered injuries in wagon accidents or train wrecks. Careless or unfortunate soldiers who fell, and men in the path of a falling tree (for example, in their tent during a storm), suffered injuries as well. Accidental injuries would be treated in the same ways as wounds sustained on the battlefield.

Presuming that adequate supplies were available, which was not always the case, especially in the Confederacy, Northern and Southern doctors, many of whom had trained together in antebellum medical schools, would usually treat their wounded in the same ways.

When a soldier sustained a battle wound, his initial treatment depended on the severity of the wound and his location on the battlefield. If the wound was minor, the soldier could walk to the nearest first aid station for bandaging and then return to the battle. A soldier might rip a strip off his shirt and bandage the wound himself or have a comrade do so, while continuing the fight. Of course, some soldiers used the slightest scratch as an excuse to leave the field.

The more severely wounded had to be removed from the field by other people. Early in the war comrades might do this. Regimental musicians also functioned frequently as stretcher-bearers. Later, a Union ambulance corps was organized, with a specific number of ambulances and trained stretcher-bearers appointed for each regiment. Army medical director Major Jonathan Letterman, MD. set up the model Union system in the Army of the Potomac in 1862. As a result, the seriously wounded were removed from the field much more quickly than before, with fewer instances of soldiers lying where they fell for days or even a week with little or no assistance. The Confederacy always had a shortage of vehicles and had to use anything available to transport patients.

Assistant surgeons were usually the first to assess a patient on the field. Now termed triage, the initial examination determined who seemed to have a chance to survive and prioritized treatment for them. Patients who appeared to be mortally wounded might be made as comfortable as possible but were usually not cared for otherwise when there were many other men who potentially could be saved. These assistant surgeons performed such first aid as trying to stop bleeding, bandaging wounds, and giving pain-killing opiates or whiskey so that the wounded could be transported to the field hospital.

Field hospitals were established as close to the battlefield as possible without being in artillery range or at risk of capture. Because of shifting battle lines, the hospitals often had to move. Field hospitals were temporary facilities located in whatever structures were available, such as houses, barns, outbuildings, tents, or even in a yard under trees. Here doctors removed bullets, cleaned and bandaged wounds, and performed amputations as necessary. Nearly all surgeries, North and South, were performed with anesthesia, either chloroform or ether, although chloroform was preferred. Patients only received the amount of anesthesia necessary to enable them to feel no pain, not enough to relax them. As a result, these patients groaned and thrashed about, having to be held down by several men. Observers erroneously reported that the operations were being performed without anesthesia, but this was not true.

Initially, field hospitals were organized by regiment, but later in the war organization by division or brigade proved more efficient. Because more casualties were always likely, and every bed could be needed at any moment, any patient who had been treated and could be moved was sent from the field hospital to a general hospital.

General hospitals, which treated patients of any military unit, were located far behind the lines, for example, in New York City and Keokuk, Iowa, for the Union, or Atlanta, Georgia, and Lynchburg, Virginia, for the Confederacy. Due to the distance of the general hospitals from the field and the discomfort of travel by wagon or ambulance, most general hospitals were located on waterways or rail lines and transportation was by steamboat or train whenever possible.

Each side eventually had many of these general hospitals. Their purpose was long-term care for wounded and sick soldiers with an expected lengthy recovery time—weeks or months, or in some cases even years. The preferred outcome was the return of the rehabilitated soldier to his regiment. However, in cases of disabling amputation and wounds, the hospital attempted to get the soldier to a level of convalescence permitting him to be discharged from the army and sent home. In some cases, soldiers wounded in the extremities, who suffered arterial bleeding or severe infections such as gangrene, underwent an initial or a corrective amputation at the general hospital (although most amputations were done in the field hospitals).

Wound infections could be a serious complication for the patients. While minor infections were common, and not serious, other types could, and did, prove fatal. Erysipelas, hospital gangrene, and pyemia were all streptococcal infections (although that was not known at the time). Erysipelas, an extremely contagious skin infection, damaged tissues beneath the skin. In cases when the infection spread to the lymph nodes, it traveled through the blood stream and was known as “blood poisoning” or pyemia. This infection had a ninety-percent mortality rate.

Hospital gangrene was most common in larger urban hospitals later in the war. Some researchers have suggested that it was a combination of several types of bacteria. None of the Civil War hospitals practiced hygiene acceptable to twenty-first century Americans, in part because doctors at the time were unaware of the role of bacteria in causing infection. However, some institutions were better than others about general sanitation, changing and washing sheets, isolating contagious persons, and using separate sponges and basins for each patient rather than communal wound-cleaning items for the whole ward. These practices lessened the rate of infection at some hospitals. Wound infections often could be treated successfully by cleaning the wound with nitric acid, iodine, carbolic acid, or bromine (this latter substance eventually produced the best results). These extremely painful procedures were performed with the patient under anesthesia.

On June 9, 1862, Surgeon General William Alexander Hammond issued orders for Union doctors to collect medical and surgical specimens as well as information on the

treatment of wounds and disease during the war. This collected information was published after the war in six large volumes as *The Medical and Surgical History of the War of the Rebellion* (1870-1888). The three surgical volumes discuss gunshot wounds of all types, presenting statistics and case studies. The specimens became the nucleus for the Army Medical Museum, since 1989 known as the National Museum of Health and Medicine, in Washington, D.C.

Some wounded soldiers, although too disabled for field duty, were still able to do guard duty, nursing, or clerical tasks. These men were assigned to the Invalid Corps. In the North, this corps was organized in April 1863 and reorganized in March 1864 as the Veteran Reserve Corps. Ultimately about 60,000 soldiers served in this corps. The Confederate Invalid Corps, organized in February 1864, was much smaller that its Union counterpart, totaling only about 6,200 men. While some Confederates also did light duty, others were totally disabled, with their appointment in the corps providing, in essence, disability pay.

Many amputees were candidates for artificial limbs. While most arm designs were more cosmetic than functional, artificial legs could provide significant mobility. Many new varieties were developed during and after the war to meet veterans' needs. While some soldiers preferred a utilitarian peg leg, other more complicated designs provided ankle and knee joints that involved the use of levers and ball bearings. Because the legs needed to be strong but light, they could be made of wood, leather, cork, or other materials. Fastening a leg on required a system of straps and buckles that could be uncomfortable or difficult to attach, depending on the length and condition of the wearer's stump. Therefore, some soldiers preferred crutches rather than prostheses. After the war, some veterans also found the empty sleeve or pant leg conferred political influence. Men with arm amputations were elected governor of Wisconsin, Louisiana, and Arkansas.

The U.S. Congress passed legislation on July 16, 1862 allowing Union amputees fifty dollars for an artificial arm and seventy-five dollars for an artificial leg. Postwar acts provided for free transportation to fittings and replacement limbs every five years. Some Confederate veterans, excluded from provisions intended for loyal Union men, received help from state-supported programs in North Carolina, South Carolina, Mississippi, Virginia, and Arkansas. In addition, monthly federal pension payments (and some state Confederate pensions) were available for the discharged wounded veterans, whether amputees or not, depending on the rank of the recipient, the nature of the wound, and the amount of disability for manual labor that it caused.

Most soldiers returning from the Civil War experienced a greater or lesser period of readjustment to civilian life. The wounded veteran had additional concerns. He might have aches or any degree of pain at the site of his wound, including "phantom pain" affecting nerves associated with an amputated limb, even when the wound had healed well. Some wounds never fully healed, secreting pus for years or discharging bone fragments on occasion. The wounded veteran could easily become stiff, limp, have limited ability to use his arm or leg, or be quite disabled and dependent on others.

Veterans without caring families able to meet their needs often ended up in one of the numerous homes established for disabled soldiers.

Wounded soldiers might well suffer psychological problems, such as post-traumatic stress disorder (at the time called nostalgia or homesickness). An unknown number developed an addiction to the opiates (morphine, laudanum, and other preparations) provided to them for pain relief. Modern studies have shown that, in fact, more women became addicted to opiates taken for what were termed female complaints. Some wounded veterans struggled with notions of their own diminished manhood because they were unable to provide for their families. Some recent historians have emphasized these struggles, which were very real, as well as the curious or negative responses of civilians to these disabled veterans.

However, it is also important to note that many wounded veterans did not suffer these discouragements in any significant way. They resumed their place in society, reuniting with their wives or marrying their sweethearts, fathering and raising children. While some may have had to learn a new occupation, perhaps adapting to write left-handed, they did so, at least adequately, and in many cases very successfully. The outcome of the war for the wounded veterans varied as much as their wounds did. Some died soon after returning home, others suffered for years, but many also lived quite long, happy, and relatively healthy lives.

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