

How Death Saved Lives: The Evolution of Medicine in the Civil War

The Civil War raged from 1861 to 1865. In that time period, over 620,000 people were killed. Doctors, referred to as “butchers” during the 1860s, were forced to rethink their treatments and techniques during this season of great death. The Civil War brought groundbreaking discoveries in sanitation, infection, and alternative treatments, as well as improved organization and medical documentation, all which contributed to the rapid decline of America’s “medical Middle Ages.”

Prior to the medical advances of the Civil War, disease was most often attributed to miasma, or toxins in the air. Most infections were considered “curable” using any combination of bloodletting, purging, blistering, and mercury pills (Dixon). Sterility was not considered essential to a patient’s health. Antiseptics and antibiotics were nonexistent. Mortality rates were staggeringly high. To make matters worse, most doctors were not adequately trained. The average physician had only undergone two years of minimal instruction and had no clinical experience (“Civil War Medical Care, Battle Wounds, and Disease”). These doctors only performed minor external surgeries and had little or no experience in internal medicine. Old methods of treatment and training would all change during the Civil War.

If a soldier was not killed by the bullet, then disease would often claim him. Two-thirds of the 620,000 soldiers who died during the Civil War were killed by various illnesses and infections. Dysentery, typhoid fever, smallpox, malaria, pneumonia, mumps, measles, tuberculosis, and countless other diseases took more lives than any weapon. Additionally, ninety-nine percent of soldiers experienced diarrhea at some point during the war (“Civil War Medical Care, Battle Wounds, and Disease.”). Many deadly infections were contracted post-surgery, increasing the number of illness-related fatalities. This is one reason why the standards for

physicians were held high to ensure the best possible chance of survival for patients (Gross 10). Others ailments developed from the extremely poor conditions in the soldiers' camps ("The Great Army of the Sick"). Nobody, at the time, had made the connection between sickness and sanitation.

The Germ Theory, which states that microscopic bacteria and viruses caused disease, was not yet understood (Sohn). These pathogenic microorganisms thrived in filthy environments, and the conditions soldiers lived in were horrendous. Because of water shortages in camps, items were rarely cleaned. This includes all medical tools. If scalpels or forceps were dropped on the ground, they were "only washed in tap water," according to one Civil War surgeon (Ledoux). Between operations, tools were not sterilized. Doctors rarely washed their hands, and even less often were their garments cleaned. No one yet knew why these post-surgery infections took place, nor how to prevent them.

"That in every year, within this Commonwealth, thousands of lives are still lost which might have been saved." (Shattuck 2) At last, someone managed to connect the dots and educate America. *A Treatise on Hygiene: With special reference to the Military Service* was written by William Hammond, a neurologist and Surgeon General for the Union forces. It had everything field physicians needed to understand that a soldier's diet and hygienic practices played a large role in their overall health (Hammond 13). His book was widely distributed, bringing the knowledge of the importance of sanitation to everyone. Hammond also changed the layout of many hospitals, making them better-ventilated, temperature-regulated, and larger (Ennis). The standards for physicians were raised as well, to prevent unexperienced doctors from making fatal errors with patients. Hammond's hospitals had the lowest mortality rate in recorded history. To help implement Hammond's research, the Sanitation Commission was formed in 1861 by a

group of Union civilians (Waide et al.). The organization was created to provide “sanitary assistance” for doctors and to spread additional information regarding the importance of cleanliness. They cleaned up camps and improved the living conditions of soldiers. They also strongly encouraged doctors to keep medical records, a practice that was less common before the war. These records contained detailed descriptions of surgeries, examinations, and theories, laying the foundation for important research and discoveries in the upcoming decades. Thanks to research circulated during the Civil War, sanitation was finally a common practice, and countless lives were saved as a result.

If a soldier was injured during battle, volunteers took the howling victim behind the front lines using a stretcher made from canvas and wooden poles. From there, a horse-and-buggy-type wagon would cart them to the nearest field hospital (Barnes, Otis, and Huntington 940). The “stretcher-bearers” would assess the condition of the patient, dividing them into three main categories: mortally wounded, slightly wounded, and surgical cases. They would then assist the patient to the best of their ability in the back of the jostling horse-drawn vehicle. This process was called “Letterman’s Ambulance,” devised by the director of the Army of the Potomac, Jonathan Letterman (“Jonathan Letterman”). His system evacuated the injured more efficiently and paved the way for our modern ambulance system.

An estimated ninety percent of Civil War injuries could be attributed to a single, life-threatening projectile: the minié ball (Leonard). The minié ball was as economical as it was deadly. It was smaller and used less metal, making it cheap and easy to mass-produce. The bullet’s long-range accuracy and quick-reloading capabilities rendered the previous style of charge-and-advance warfare obsolete. The hollow, conical bullet was extraordinarily effective, even from long distances. This relatively new bullet did not just fracture a bone... it shattered it,

driving pieces of the splintered bone through the entire surrounding flesh, causing excruciating pain. To make matters worse, the hollow configuration of the minié ball expanded after impact. It mushroomed out and caused great internal damage ("Minié Ball"). Muscles, arteries, tissues, and bones were utterly mangled beyond repair. Often the only way to save the lives of soldiers hit with the dreadful "minnie ball" was amputation.

Amputation was the most successful method used to halt the spread of deadly infections, like gangrene, caused by battle wounds during the Civil War (Mütter Museum). Amputation was used when the bone of a limb was shattered or deemed irreparable, and three-quarters of injuries were to parts of the body that could undergo amputation (Wright and Hancock). Contrary to popular belief, the process was not as barbaric as it seemed. The process was efficient and effective. After a soldier was injured on the battlefield, he was immediately bandaged by medical volunteers. He was shuttled to either the nearest field hospital or medical tent at a camp using Letterman's ambulance system. On the way, the wounded soldier was given whiskey to ease his shock. Once the patient, still in great distress, was set on an "operating table," a chloroform-soaked cloth was held onto the patient's nose and mouth ("Chloroform Use in The Civil War"). Tourniquets were tightly secured above the amputation area to prevent the patient from bleeding out (Wright and Hancock). A long, though often dull, blade was used to sever tissue and ligaments, then a serrated saw was used to cut through the bone ("Civil War Medical Tools"). One man who witnessed an amputation said this: "Tables about breast high had been erected upon which the screaming victims were having legs and arms cut off. The surgeons and their assistants, stripped to the waist and bespattered with blood, stood around, some holding the poor fellows while others, armed with long, bloody knives and saws, cut and sawed away with frightful rapidity, throwing the mangled limbs on a pile nearby as soon as removed" ("Civil War

Battlefield Medicine”). An experienced field surgeon could perform an amputation in under ten minutes. Despite the gruesome process, a shocking seventy-five percent of amputees survived the operation (Goellnitz).

Amputation would never have been as successful without the practice of anesthesia. Anesthesia put a patient into a temporary, painless sleep during operations. The Union forces used chloroform-soaked cloths as an anesthetic (Barnes, Otis, and Huntington 895), but the Confederate forces did not have the luxury of endless quantities of the substance. The blockade set up by the Union prevented Confederate physicians from receiving ample amounts of chloroform. But as the saying goes, necessity is the mother of invention! Confederate physician Dr. Julian John Chisolm invented a 2.5-inch inhaler that used only one-eighth of an ounce of chloroform per surgery (Rowe). The Union and her soaked cloths used two ounces on a single patient. The Confederacy was able to subdue and soothe patients with sixteen times less chloroform while maintaining the same level of effectiveness. The vast quantity of injured soldiers forced the expedited advancement of surgical and anesthesia techniques.

Necessity was truly the mother of invention during the Civil War. America emerged victorious from her “Medical Middle Ages” with stronger and more successful medical practices. Though many lives were lost, the Civil War was a time when the importance of sanitation and the causes of infection became common knowledge. Old methods of treatment such as bloodletting and blistering were abandoned completely as newer, more effective techniques were developed. New hospital layouts and ambulance systems were created because of the dire need during Civil War times. How ironic, that the death and devastation of the Civil War would ultimately save the lives of many.

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