

## Civil War Diseases

The Civil War was fought, claimed the Union army surgeon general, "at the end of the medical Middle Ages." Little was known about what caused disease, how to stop it from spreading, or how to cure it. Surgical techniques ranged from the barbaric to the barely competent.

A Civil War soldier's chances of not surviving the war was about one in four. These fallen men were cared for by a woefully underqualified, understaffed, and undersupplied medical corps. Working against incredible odds, however, the medical corps increased in size, improved its techniques, and gained a greater understanding of medicine and disease every year the war was fought.

During the period just before the Civil War, a physician received minimal training. Nearly all the older doctors served as apprentices in lieu of formal education. Even those who had attended one of the few medical schools were poorly trained. In Europe, four-year medical schools were common, laboratory training was widespread, and a greater understanding of disease and infection existed. The average medical student in the United States, on the other hand, trained for two years or less, received practically no clinical experience, and was given virtually no laboratory instruction. Harvard University, for instance, did not own a single stethoscope or microscope until after the war.

When the war began, the Federal army had a total of about 98 medical officers, the Confederacy just 24. By 1865, some 13,000 Union doctors had served in the field and in the hospitals; in the Confederacy, about 4,000 medical officers and an unknown number of volunteers treated war casualties. In both the North and South, these men were assisted by thousands of women who donated their time and energy to help the wounded. It is estimated that more than 4,000 women served as nurses in Union hospitals; Confederate women contributed much to the effort as well.

Although Civil War doctors were commonly referred to as "butchers" by their patients and the press, they managed to treat more than 10 million cases of injury and illness in just 48 months and most did it with as much compassion and competency as possible. Poet Walt Whitman, who served as a volunteer in Union army hospitals, had great respect for the hardworking physicians, claiming that "All but a few are excellent men..."

Approximately 620,000 men-360,000 Northerners and 260,000 Southerners-died in the four-year conflict, a figure that tops the total fatalities of all other wars in which America has fought. Of these numbers, approximately 110,000 Union and 94,000 Confederate men died of wounds received in battle. Every effort was made to treat wounded men within 48 hours; most primary care was administered at field hospitals located far behind the front lines. Those who survived were then transported by unreliable and overcrowded ambulances-two-wheeled carts or four-wheeled wagons-to army hospitals located in nearby cities and towns.

The most common Civil War small arms ammunition was the dreadful minnie ball, which tore an enormous wound on impact: it was so heavy that an abdominal or head wound was almost always fatal, and a hit to an extremity usually shattered any bone encountered. In addition, bullets carried dirt and

germs into the wound that often caused infection.

Of the approximately 175,000 wounds to the extremities received among Federal troops, about 30,000 led to amputation; roughly the same proportion occurred in the Confederacy. One witness described a common surgeon's tent this way: "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."

Contrary to popular myth, most amputees did not experience the surgery without anesthetic. Ample doses of chloroform were administered beforehand; the screams heard were usually from soldiers just informed that they would lose a limb or who were witness to the plight of other soldiers under the knife.

Those who survived their wounds and surgeries still had another hurdle, however: the high risk of infection. While most surgeons were aware of a relationship between cleanliness and low infection rates, they did not know how to sterilize their equipment. Due to a frequent shortage of water, surgeons often went days without washing their hands or instruments, thereby passing germs from one patient to another as he treated them. The resulting vicious infections, commonly known as "surgical fevers," are believed to have been caused largely by *Staphylococcus aureus* and *Streptococcus pyogenes*, bacterial cells which generate pus, destroy tissue, and release deadly toxins into the bloodstream. Gangrene, the rotting away of flesh caused by the obstruction of blood flow, was also common after surgery. Despite these fearful odds, nearly 75 percent of the amputees survived.

While the average soldier believed the bullet was his most nefarious foe, disease was the biggest killer of the war. Of the Federal dead, roughly three out of five died of disease, and of the Confederate, perhaps two out of three. One of the reasons for the high rates of disease was the slipshod recruiting process that allowed under- or over-age men and those in noticeably poor health to join the armies on both sides, especially in the first year of the war. In fact, by late 1862, some 200,000 recruits originally accepted for service were judged physically unfit and discharged, either because they had fallen ill or because a routine examination revealed their frail condition.

About half of the deaths from disease during the Civil War were caused by intestinal disorders, mainly typhoid fever, diarrhea, and dysentery. The remainder died from pneumonia and tuberculosis. Camps populated by young soldiers who had never before been exposed to a large variety of common contagious diseases were plagued by outbreaks of measles, chickenpox, mumps, and whooping cough.

The culprit in most cases of wartime illness, however, was the shocking filth of the army camp itself. An inspector in late 1861 found most Federal camps "littered with refuse, food, and other rubbish, sometimes in an offensive state of decomposition; slops deposited in pits within the camp limits or thrown out of broadcast; heaps of manure and offal close to the camp." As a result, bacteria and viruses spread through the camp like wildfire. Bowel disorders constituted the

soldiers' most common complaint. The Union army reported that more than 995 out of every 1,000 men eventually contracted chronic diarrhea or dysentery during the war; the Confederates fared no better.

Typhoid fever was even more devastating. Perhaps one-quarter of noncombat deaths in the Confederacy resulted from this disease, caused by the consumption of food or water contaminated by *salmonella* bacteria. Epidemics of malaria spread through camps located next to stagnant swamps teeming with *anopheles* mosquito. Although treatment with quinine reduced fatalities, malaria nevertheless struck approximately one quarter of all servicemen; the Union army alone reported one million cases of it during the course of the war. Poor diet and exposure to the elements only added to the burden. A simple cold often developed into pneumonia, which was the third leading killer disease of the war, after typhoid and dysentery.

Throughout the war, both the South and the North struggled to improve the level of medical care given to their men. In many ways, their efforts assisted in the birth of modern medicine in the United States. More complete records on medical and surgical activities were kept during the war than ever before, doctors became more adept at surgery and at the use of anesthesia, and perhaps most importantly, a greater understanding of the relationship between cleanliness, diet, and disease was gained not only by the medical establishment but by the public at large. Another important advance took place in the field of nursing, where respect for the role of women in medicine rose considerably among both doctors and patients.

What follows are some of the diseases and conditions that took the health and/or lives of many soldiers during the Civil War, using the names given to them at the time.

**ASTHENIA:** Weakness or debility.

**BILIOUS REMITTENT FEVER:** Archaic term for relapsing fever characterized by bilious vomiting and diarrhea.

**CAMP FEVER:** This term was used for all of the continuing fevers experienced by the army: Typhoid Fever, Malarial Remittent Fever, and Typho-malarial Fever. The last named is a combination of elements from the first two diseases. This combination, Typho-malarial Fever, was the characteristic "camp fever" during the Civil War. Symptoms included: a pronounced chill followed by an intermittent fever, abdominal tenderness and nausea, general debility, diarrhea, retention of urine, and furring of the tongue.

**CARDITIS:** Inflammation of the heart.

**CATARRH:** Inflammation of the mucous membranes with increased flow of mucous.

**CONSUMPTION:** Tuberculosis (also called Phthisis).

**DIPHThERIA:** Acute bacterial illness characterized by sore throat and fever; serious and even fatal complications can occur.

**DROPSY:** Archaic word for edema; abnormal accumulation of fluid in cells, tissues, or cavities of the body.

**DYSENTERY:** Various intestinal diseases with inflammation of the bowels,

abdominal pain, and bloody diarrhea.

**ENDOCARDITIS:** Inflammation of the heart.

**ERYSIPELAS:** Acute inflammation of the skin and subcutaneous tissue caused by streptococcus bacteria; characterized by reddening and severe inflammation, can lead to pustules. Usually accompanied by severe constitutional symptoms.

**FISTULA:** Forming an abnormal hollow passage from an abscess or cavity to the skin or an organ.

**HYPERTROPHY:** Enlargement.

**NEPHRITIS:** Inflammation of the kidneys.

**PHTHISIS:** Tuberculosis (also called Consumption).

**PILES:** Hemorrhoids.

**PLEURITIS (PLEURISY):** Inflammation of the membrane enveloping the lungs.

**RHEUMATIC FEVER:** Infectious disease causing fever, pain, swelling of the joints, and inflammation of the valves of the heart.

**RHEUMATISM:** Chronic inflammation of the joints; also an obsolete term for rheumatic fever.

**RUBEOLA:** Measles.

**ST. VITAS DANCE:** Disorder of the central nervous system characterized by involuntary jerky movements, usually follows an attack of rheumatic fever; now called Sydenham's Chorea.

**SCORBUTIC ULCERS:** Ulcers caused by scurvy.

**SCROFULA:** Tuberculosis of the lymphatic glands especially of the neck, characterized by the enlargement and degeneration of the glands.

**SCURVY:** A disease marked by debility, anemia, edema, and ulceration of the gums, due to a lack of Vitamin C.

**SMALLPOX:** An acute, eruptive, contagious disease caused by a virus and marked by an onset of chills, high fever, backache and headache. Skin eruptions appear in two to five days.

**SYPHILIS:** A venereal disease caused by a spirochete which consists of three phases. **PRIMARY:** Characterized by a hard chancre on the genitals;

**SECONDARY:** Characterized by eruptions on the skin and mucous membranes and the generalized enlargement of the lymph nodes; **TERTIARY:** Characterized by the infection and disablement of bones, muscles, and nerve tissue.

**TUBERCULOSIS:** Infectious disease causing tubercles in the lungs, characterized by fever, weakness, and emaciation.

**TYPHOID FEVER:** Acute infectious disease characterized by continued rising fever, physical and mental depression, rose-colored spots, loss of appetite, and dry mouth with furred tongue.

**TYPHOID PNEUMONIA:** Pneumonia as a complication of typhoid fever.

**TYPHUS:** A group of acute infectious diseases characterized by severe fever, chills, weakness, joint ache and headache. Similar to Typhoid Fever. See Camp Fever.