
THE SENTINEL

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"I have made inquiry with respect to the establishment of the hospital and find it in a very unsettled condition. There is no principal director, or any subordination among the surgeons. Of consequence, disputes and contentions have arisen and must continue until it is reduced to some system."

~George Washington, Letter to the Continental Congress, 20 July 1775

MILITARY MEDICINE DURING THE REVOLUTIONARY WAR

In June 1775, British forces attacked colonial forces on Breed's Hill and Bunker Hill near Boston Harbor. Dr. Joseph Warren, a Major General in the colonial militia, was killed in the battle. Thus, the first general officer killed in action was a physician.

In July 1775, the First Continental Congress established a Hospital—a medical department rather than a physical structure—in Massachusetts, which was to be staffed with a Director-General (the chief physician of the Hospital), four surgeons, an apothecary (pharmacist), and nurses (most frequently wives or widows of military personnel). Congress set the salaries, in Continental Dollars, for the Hospital staff as follows:

Director General	\$4.00 per day
Surgeons	\$1.66 per day
Apothecary	\$1.66 per day
Nurses	\$2.00 per month

The Continental Congress appointed Benjamin Church, a London-trained physician and member of the Massachusetts Legislature, as the first Hospital Director-General. One of his innovations was to institute examinations for surgeons who did not have a medical degree or certificate—a fact we today cannot even comprehend.

Congress did not specify how a working relationship was to exist between its new Hospital system and the Continental Army's regimental systems, which were overseen by the individual colonies. As a result, staff and command responsibilities for medical matters were left fragmented between the colonial governments and Congress, between regimental medical staffs and the Hospital, and between military and civilians, as physicians at the beginning of the war were not commissioned into the Army. In typical form, Congress appropriated insufficient funds for its Hospital system and no money for the regimental hospitals. It further confused matters when later it created other medical departments in theaters of operation, each with its own general hospital. Congress said nothing about the relationship that should exist between the chief physicians of these hospitals and the Hospital's Director-General. Matters became more confused when a regimental hospital deployed with its regiment. Soldiers who were too ill to deploy with their regiments usually were sent to the nearest general hospital without notification and without adequate provision being made for their care.

In 1775 Continental forces attacked Montreal and Quebec, and the attack against Montreal was successful. In November the Continental forces surrounded Quebec but the siege eventually was abandoned because of an outbreak of smallpox and harsh winter weather. The Army retreated to New York in 1776, where a hospital was established under Dr. Jonathan Potts to treat the soldiers returning from Canada. His work led to the only Congressional resolution praising a physician during the war.

"The unremitting attention showed by Doctor Potts and the officers of the hospital to the sick and wounded soldiers under their care is proof not only of their humanity, but also of their zeal in the preservation of the health and lives of the gallant asserters of their country's cause. ... "

Dr. Potts' only response was to comment, "My only concern is to preserve the health of the soldier and to tenderly nurse the sick." His valiant efforts took a personal toll and he died four years later, worn out by his work and his total devotion to the troops.

Dr. Benjamin Church served as Chief Physician & Director General for the Continental Army from July 27, 1775 to October 17, 1775, and aroused the ire of various regimental surgeons over the care and responsibility for wounded and sick soldiers in those commands. The regimental surgeons wanted to keep their patients in their regimental hospitals, but Church instead wanted the patients sent to his general hospital in Boston. To underscore his presumed authority, Church refused to give the regimental hospitals the supplies they required. A storm of complaints about the Chief Physician compelled Gen. George Washington to order an investigation of the fledgling medical service. General John Sullivan, in a letter to Congress, complained that Church's regulations would prevent soldiers from reenlisting: "They would rather die... under the care of physicians they were acquainted with than be removed from their friends under the care of physicians they never saw." In his defense, the Dr. Church complained that rivals simply were jealous of his position and asked to be relieved of his post. His request was granted. Interestingly, soon thereafter Dr. Church was found to have corresponded with the British on military affairs. In October 1775, he was court-martialed for treason, found guilty, and imprisoned.

Dr. John Morgan of Philadelphia succeeded Church as the second Director-General, but never solved the medical command and control problems. He was not a tactful person and was removed from his post in 1777. One of his supporters was Benjamin Rush, a physician who signed the Declaration of Independence and published a book on preventive medicine in the military. In his book, Dr. Rush stressed that physicians had to convince line officers to implement their medical advice for it to be effective:

"Consider that the principle study of an officer in time of war should be to save the blood of his men. If it be criminal to sacrifice thousands by termidity in battle, why sacrifice twice the number in a hospital by negligence? An attention to the health of your soldiers is absolutely necessary to form a great military character."

William Shippen, who also helped found the Philadelphia Medical School, became the third Director-General. Dr. Shippen, however, did not do much better at running the Hospital than had Morgan. He was accused of corruption and court-martialed. Although acquitted, he eventually resigned in early 1781. Needless to say, from the topmost command down, the Continental Army's medical service did not enjoy an auspicious beginning.

John Cochran became the fourth Chief Physician & Director-General for the Continental Army. He had been a regimental surgeon in the French and Indian War and was the first Director-General not to have a formal medical degree from Europe. Dr. Cochran remained Director-General for the remainder of the war, as he established a more cohesive command to deliver modestly better medical services to American troops.

THE RAVAGES OF SMALLPOX

The insidious disease Smallpox ravaged the world until a process of inoculation was developed to curtail its spread. The disease was especially virulent among large numbers of soldiers who lived and fought in close proximity with others. At the beginning of the war, Dr. John Warren performed smallpox inoculations on new recruits when he served as a surgeon to a hospital in Boston. Later, Director-General John Morgan recommended to General Washington that all troops be inoculated for smallpox. The Canadian campaign convinced Washington that inoculation was necessary and ordered that all Continental line troops be

inoculated. He shortly wrote to newly appointed Director General Shippen from Valley Forge on 6 January 1777:

"Finding the smallpox to be spreading much and fearing that no precaution can prevent it from running through the whole of the Army, I have determined that the troops shall be inoculated. Should the disorder infect the Army in the natural way and rage with its usual virulence, we should have more to dread from it than from the sword of the enemy."

This was the first time that an attempt had been made to inoculate an entire army, and the results were successful. Inoculation reduced the death rate from smallpox from 160 per 1,000 men to 3 per 1,000.

BATTLEFIELD MEDICINE

Throughout the American Revolution medical knowledge, equipment, supplies, and drugs remained in short supply. In addition, most regimental surgeons were not well trained, especially at the beginning of the war. Medical officers often set out to work with only what they could carry in their pocket surgical kit, and they performed the only useful surgery they knew: amputation.

Medical treatment facilities had to be moved as the Army advanced and retreated. The battlefield medical treatment facility was often in some local house to which the wounded were carried, dragged, or limped into on their own. Enlisted personnel were often assigned to help in the regimental hospitals. Rather than assign personnel who could be trained to become efficient hospital personnel, commanders usually assigned enlisted personnel who were a burden to the unit and who otherwise were not suited for military life. Indeed, a hospital corps consisting of trained enlisted personnel was not established until 1887.

The Army's general hospitals became larger and better organized as the war progressed. However, Dr. James Tilton, who eventually became Surgeon General during the War of 1812, believed that those large facilities helped spread disease. Accordingly, he built smaller, well-ventilated hospitals known as Tilton's Huts, which reduced the transmission of infection.

Inspector General Baron von Steuben published the first Army Regulations that dealt with health care in 1778 and 1779. Therein he stressed the duty of regimental commanders to preserve the health of their troops and the importance of cleanliness. He also gave regimental surgeons authority to determine when a soldier had sufficiently recovered from his illness to resume his duties. To regimental commanders, Von Steuben declared,

"The preservation of the soldier's health should be his first and greatest care; and as that depends in great measure on their cleanliness and manner of living, he must have a watchful eye over the officers of companies, that they pay the necessary attention to their men in those respects.

There is nothing which gains an officer the love of his soldier's more than his care of them under the distress of sickness: it is then that he has the power of exerting his humanity in providing them every comfortable necessary and making their situation as agreeable as possible.

When a soldier has been sick he must not be put on duty until he has recovered sufficient strength, of which the surgeon shall be the judge. The surgeons are to remain with their regiments, as well on a march as in camp, that in case of sudden accidents they may be at hand to apply the proper remedies." (Von Steuben, Regulation 5, 1778-1779)

No major advances in medicine or surgery emerged from the American Revolution, though smallpox control definitely was a step forward. The war, which officially ended in September 1783 with the Treaty of Paris, still resulted in a considerable loss of life, mostly from disease. Physicians were still without a valid theory of disease, and used harmful procedures such as "bleed, purge, and sweat" to treat fevers.

No surgery was performed on the battlefield; rather, the wounded were simply hauled to the rear. Sick and lightly-wounded soldiers were simply left on the battlefield to die until the battle was over. The more seriously-wounded soldiers were evacuated by fellow soldiers to a collection point outside the battle area where the wounded soldiers stayed until they were loaded into an ambulance wagon and carried to a military hospital, usually located about three miles behind the army. There, surgeons treated soldiers by incising the wounds and fishing around with their fingers for the musket ball or shell fragment.

The evacuation process resulted in the loss of healthy manpower since it might require six to eight soldiers to carry one wounded soldier, his weapon and his equipment from the battlefield. Wounded soldiers were carried on the arms of three or four soldiers; on an improvised litter made of guns, branches, or coats; or by farmer's carts pressed into service. Due to the cumbersome method of evacuation, sometimes it took 24 to 36 hours for wounded soldiers to reach medical treatment, which resulted in many deaths. Today, we look upon the state of military medicine during the American Revolution and barely comprehend the primitive knowledge of anatomy, infection, biology, and sanitation those physicians possessed. Physicians with their limited abilities and understanding of medicine and medical science caused unimaginable suffering not only for soldiers, but for civilian populations at large.



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