The AMEDD Historian

Civil War Edition, Pars Duo

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Hospital Steward James Mingay of Co. F, 115th New York Infantry. Library of Congress.

Welcome to the 54th AMEDD Historian Newsletter – Summer 2026! This is our second and final edition focusing on medicine during the American Civil War. In this edition authors from within the ranks, veterans, and historians have all contributed to tell fascinating aspects of our story. Topics include nursing, medical logistics, the Eastern and Western Theater, methods of transportation, public health, and opiates. We hope you have enjoyed this series. As always, we encourage contributions to future newsletters. Enjoy!

"One of the Greatest Blessings Conferred on the Army…"
Multimodal Patient Movement during the Civil War

Alan Hawk, Museum Specialist, and David Shackelford, Staff Curator
National Museum of Health and Medicine

"I regard them as one of the greatest blessings conferred upon the army; they have done more to save life, to assuage pain, than one half of my surgeons could have done. Could we have had hospital trains immediately after the battle of Chickamauga, we could have saved hundreds of lives."
– Surgeon Glover Perin,
Medical Director, Army of the Cumberland

[*Derived from the poster, Alan Hawk and David Shackelford, Multimodal Patient Movement during the Civil War, Military Health System Research Symposium, 5 August 2025.*]

Casualty Management

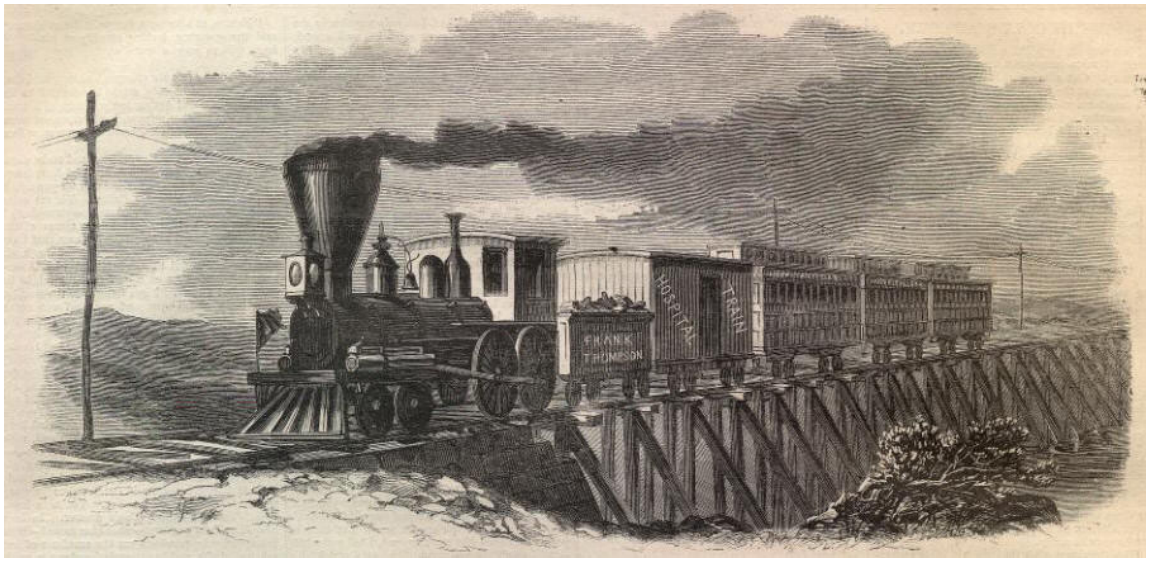
At the beginning of the Civil War, Army medical care was localized at the regimental level. Regimental bands were responsible for moving wounded off the battlefield. Regimental hospitals treated the wounded during the battle. After the battle, larger depot hospitals located in the vicinity of the battlefield continued to treat the wounded (often from multiple regiments and including casualties from the opposing army) until recovery, even after the regiment moved to its next objective. This approach to health care was adequate during the Mexican American War; however, it was overwhelmed by the casualties caused by larger armies and more efficient weapons as the scale of battle increased during the Civil War.

In 1862, Surgeon Jonathan Letterman, Medical Director of the Army of the Potomac, created a dedicated cadre of soldiers to handle the wounded and centralized their treatment. Litter bearers carried wounded from the point of injury to the regimental surgeon. Enlisted soldiers drilled in the most efficient manner in lifting wounded soldiers onto litters and placing them in ambulances. Regimental surgeons were tasked with the newly conceived responsibil-

ity of triaging the wounded, and surgical care was consolidated at the division level. Ambulances at the regimental aid station were placed under the supervision of a non-commissioned officer to control their use and "to see that the wounded men are loaded carefully and speedily and the drivers do not get demoralized." The brigade chief ambulance officer selected the shortest and best road to the division field hospital to improve transportation efficiency.

This hospital was commanded by a surgeon in charge and had three surgical teams. An assistant surgeon was placed in charge of the kitchen. Another surgeon was required to keep records of the patients admitted, their units, the nature of injury, and surgical treatment, preparing tabular statements that were submitted to the medical director at the corps and army level.

This approach, introduced just prior to the Battle of Antietam, proved its value in handling the carnage of the bloodiest single day in American military history. Based on its success, the War Department implemented this system throughout the U.S. Army by December 1862. While much has been written about Letterman, his reorganization ended at the division field hospital. The accumulation of patients tied up medical manpower and hampered the army's ability to manage casualties from subsequent combat. For the system to be truly effective, a mechanism was needed to clear these hospitals so they could receive additional casualties.



Hospital train from Chattanooga to Nashville. *Harper's Weekly,* February 27, 1864.

Patient Movement

The mechanism would be the use of steam technology in the form of railroads and steamships to provide an integrated, efficient, fast, and predictable method to move the sick and wounded across vast distances and out of the combat zone. Although it was not planned by any specific individual or committee, the resulting system adapted the principles of the Letterman plan on a national scale. It developed organically, adapting technology to tactical situations, and taking advantage of transportation hubs to benefit the needs of the army.

Within the first year of the war, railroads were being used for casualty evacuation (CASEVAC). The first use was in the aftermath of the U.S. Army's defeat at the Battle of Wilson's Creek in Missouri. Casualties included 209 wounded soldiers being treated at a depot hospital, consisting of Union and Confederate patients. In October 1861, Assistant Surgeon Samuel Melcher moved 150 Union patients over 100 miles in boxcars from Rolla to St. Louis, Missouri, moving the remaining casualties in November. All arrived safely, proving that the wounded could survive long-distance travel by rail. For the month and a half after the battle of Antietam in 1862, Letterman utilized railroads to remove over 4,000 wounded soldiers, reducing the burden on the residents of Frederick, Maryland.

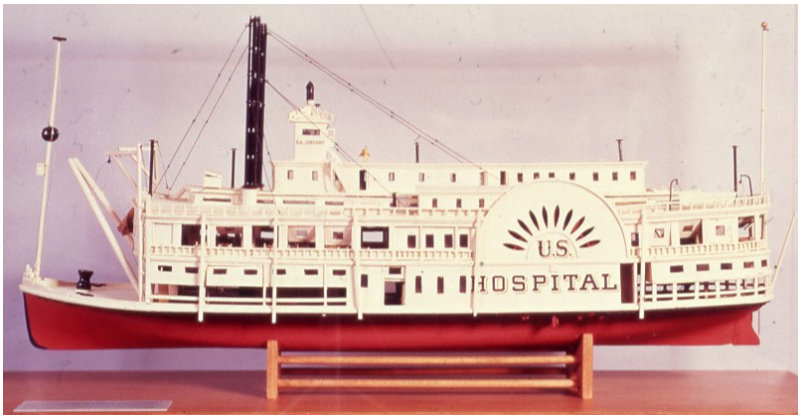
The use of rapid transportation was not without issues. After the Battle of Fredericksburg in December 1862, U.S. Major General Ambrose Burnside, desiring to resume the Union offensive in Virginia, ordered the evacuation of all wounded to Washington. Letterman objected, arguing the wounded could not survive the rigors of a winter journey, only to be overruled. The wounded were loaded onto open flatcars, most lying on straw and covered with blankets, while the most severely wounded were provided with bed sacks. Since Letterman had little time to prepare, these items

were supplied by the U.S. Sanitary Commission, a non-governmental organization that was a precursor to the American Red Cross. They were admitted to a field hospital at Aquia Landing, near Stafford, Virginia, until they could be loaded onto decks of steamships for the journey to Washington. All were removed within twelve days after the battle, and there were no fatalities among the nearly 6,000 wounded soldiers evacuated under these arduous conditions. Despite the improvised execution of this order, it became the model for Civil War patient movement.

Five months later, as U.S. forces rapidly withdrew after the Battle of Chancellorsville, the evacuation of the 8,000 wounded soldiers for a second time overwhelmed the facilities at Aquia Landing, resulting in a significant accumulation of wounded soldiers at the terminal. Again, the Medical Department did not have provisions to care for these patients, so the U.S. Sanitary Commission established kitchens to feed the men while awaiting the next leg of their journey. Once again, as with rail travel, improvised accommodations created additional issues for transporting the wounded, since none of the ships procured by the Quartermaster Department were equipped to handle casualties; "No provision having been made on board of them for such service, and being crowded, there was necessarily much hardship."

Medical movement of the wounded caused significant interference with the rhythm of the army's logistical operations. Letterman, after the Battle of Antietam, advocated a patient-centric approach to moving the wounded; "It is imperative that the trains should leave at the proper hours, no one interfering with another; that they should halt at Middletown, when food and rest, with such surgical aid as might be required, could be given at this village at the proper time for the proper number…" Herman Haupt, Director of the U.S. Military Railroad, complained in a telegram dated August 22, 1862; "Doctors will persist in sending sick, often without papers, to get them off their hands, and we cannot send forward troops if we must run our trains to Washington with sick, to stand for hours unloaded."

Perhaps Haupt appreciated the development of dedicated hospital trains, providing purpose-built railcars rather than using railroad rolling stock for medical evacuation (MEDEVAC). In October 1862, the Philadelphia, Wilmington, and Baltimore Railroad outfitted and donated fourteen railcars configured to carry patients according to the specifications of Dr. Elisha Harris of the U.S. Sanitary Commission. Unlike freight cars, attendants could move between the railcars to monitor patients while the train was underway, minimizing delays caused by physicians checking patients in individual railcars while the train was stopped. The trains were put in service connecting hospitals in Louisville, Kentucky, to Nashville, Tennessee. Although more comfortable than horse-drawn ambulances, the pitching and rocking as the train rode over uneven rails caused the litter, which was attached to interior frames with India rubber bands, to oscillate, much to the patient's annoyance. However, the design simplified the handling of the patient being transported and allowed the same litter to be used from the hospital to the train and then back to the hospital.



Model of the hospital ship *D.A January*, which sailed up the Ohio River to hospitals in Ohio, Missouri and Tennessee. This model was built by Charles Hemje, the nautical architect responsible for refitting the actual ship during the Civil War, for display in the Army Medical Department Pavilion at the 1876 Centennial Exposition in Philadelphia. National Museum of Health and Medicine.

Intra-theater Patient Movement

In the Western Theater, water was the primary means of moving men and materiel. Balancing the needs of moving patients and the other logistical needs of the army was a challenge. Patients would be loaded onto a ship, only to wait for the quartermaster to load the other cargo before departure. Assistant Surgeon Joseph Woodward seemed puzzled that "the surgeon who exerted himself in the interest of common humanity was regarded as asking for favors for himself." Perhaps, like Haupt, the quartermaster officers thought that the surgeon was merely divesting himself of his patients. Finally, the situation became so problematic that Medical Director James Simons finally persuaded U.S. Brigadier General Ulysses Grant that vessels be dedicated to the movement of wounded.

Two steamboats, the *City of Memphis* and *City of Louisiana*, were chartered and placed in service with the Medical Department in the spring of 1862. Additional vessels were chartered to transport thousands of wounded to hospitals in northern cities. When the tempo of operations decreased, these vessels were released. When combat operations resumed, the same vessels were hired and refitted for casualties. The value of these hospital ships led to the purchase of the *D.A. January*, a shallow-draft riverboat, by the Western Sanitary Commission for the Medical

Department to serve as a dedicated hospital ship, complete with an operating room and a pharmacy. The *D.A. January* transported almost 24,000 patients while in continuous operation from September 1862 to August 1865.



Model of the hospital railcar for the Army of the Cumberland on exhibit at the National Museum of Health and Medicine. This model was built by J.G. Brille and Co. of Philadelphia for display at the Army Medical Department Pavilion at the 1876 Centennial Exposition in Philadelphia. National Museum of Health and Medicine.

The military continued to utilize all forms of rapid transportation to move the wounded, based on necessity and resources. By 1864, the Army of the Potomac was engaged in trench warfare outside of Petersburg, Virginia. Division hospitals used existing resources and loaded wounded soldiers onto freight cars. The floors were covered with hay, pine boughs, or leaves for transportation out of the combat zone. While not ideal, the distance between Petersburg and City Point, Virginia, was only 18 miles. During the siege of Atlanta, Georgia, both the Army of the Cumberland and the Army of the Tennessee ran a total of three hospital trains, transporting patients from Atlanta with stops at hospitals in Chattanooga, Tennessee, and Louisville, Kentucky. The trains covered a total distance of 472 miles and were subject to frequent delays, taking from 12 to 38 hours. The hospital trains, described as "an ambulating hospital, an independent hospital organization," needed to be self-sustaining. They included a passenger car, five 22-bed hospital ward cars, an office car for medical staff, a commissary car, and a kitchen car. However, the Army of the Ohio utilized freight cars to transport the wounded, since there were not enough dedicated hospital trains. Medical staff could not move between boxcars while the train was in motion. They were able to examine dressings and provide water to their patients while the train was stopped to allow for supply trains to pass. After the fall of Atlanta, Georgia, General William Sherman continued the offensive to Savannah, Georgia, cutting his army off from the supply line. Wounded soldiers were transported on ambulances and other available wagons until the army reached the Georgia coast.

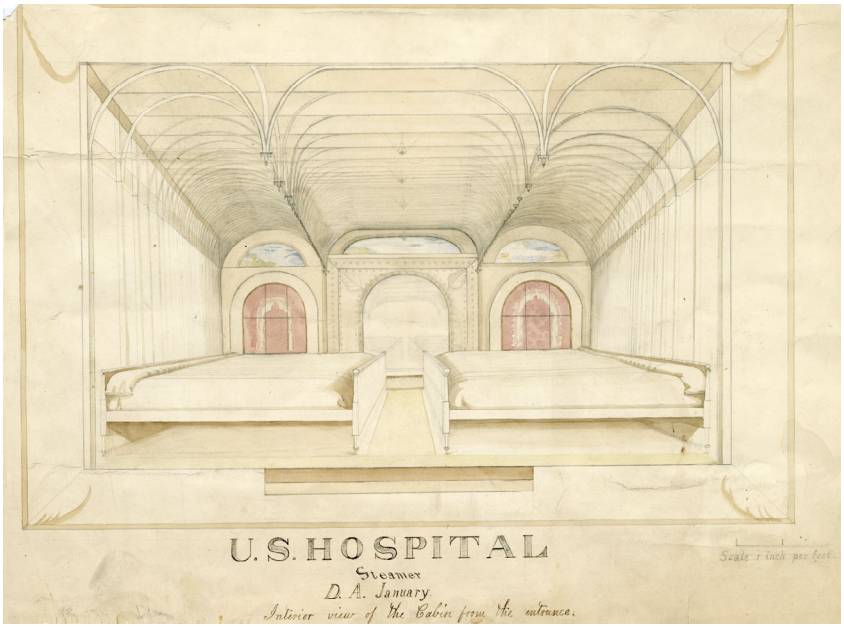
In the last year of the war, the Union advance focused on two major lines of effort: the Petersburg-Richmond campaign by the Army of the Potomac and the Atlanta-Savannah campaign by the Military Division of the Mississippi. Efficient patient care, refined logistical processes, and nimble technology resulted in a national multimodal network of hospitals. The network allowed a patient to be transported from the place of wounding to a hospital near his hometown where he could recover with his family. The system developed by Letterman for casualty management within a combat zone had become doctrine throughout the U.S. Army.

The system for getting patients out of the rear echelon developed organically, according to the terrain and distances where it operated. Although it was never codified in the 1865 medical regulations, the system above the division level (Role II), utilized a variety of modes of transportation—roads, rails, and waterways—to move patients between a series of hospitals located at transportation nodes, allowing for convalescence and sometimes further surgery, until they were healthy enough to be sent to the next node for further treatment, convalescence and discharge.

The supply depots were logical locations for the next echelon of hospitals. Once the patients were at the hospital, the surgeon responsible for maintaining records took a census of arriving patients more for continuity of pay rather than documenting medical treatment. They were mainly convalescent centers for patients recovering from diseases or surgery. The primary node in the Eastern Theater was the City Point Depot Field Hospital, along the James River in Virginia, with a capacity for 10,000 patients in tents. Procedures were performed only for cases needing additional surgery. As operations transformed from maneuver to siege warfare, the hospital admitted a greater percentage of patients recovering from disease rather than trauma. Patients were more likely to remain at the hospital until they were cured or died. In the Western Theater, the 21 general hospitals in the Department of the Cumberland, most located in Nashville and Chattanooga, Tennessee, were the primary receiving nodes for the sick and wounded from the campaign. Patients were housed in temporary wooden buildings containing over 10,000 beds. Patients who had sufficiently recovered were sent by rail to hospitals in Louisville, Kentucky, by the Ohio River.

The next leg of the journey was movement of patients, once they had sufficiently recovered to travel to General Hospitals in the North. Those with the Army of the Potomac embarked on special outfitted hospital ships for the journey down the James River to General Hospitals in Washington and New York City. One of these ships, the *State of Maine*,

could hold 300 patients and ultimately made 48 voyages, transporting 15,711 (obviously exceeding the 300 load) patients, during the war. In the Western Theater, they would be placed on hospital ships such as the *D.A January*, which sailed up the Ohio River to hospitals in Ohio, Missouri, and Tennessee. The *D.A January*, staffed with a surgeon, nurses, and hospital stewards, could carry 300 to 400 patients. Between April 1862 and August 1865, the *D.A January* transported 23,738 patients. Upon the conclusion of the Savannah campaign in December 1865, wounded soldiers were embarked on coastal ships such as the *J.K. Barnes*, which transported 3,655 patients in 11 months to hospitals in Washington and New York City.



Interior image of the patient ward of the *D. A. January*. National Museum of Health and Medicine.

The general hospitals in major cities permitted definitive care and allowed patients to be treated near their hometowns. Some of these facilities, such as Satterlee and Mower General Hospitals in Philadelphia, Pennsylvania, contained over 3,000 patients. These hospitals allowed surgeons to specialize, as patients with similar conditions were concentrated in specialty wards within these facilities. A few hospitals were created to study and treat specific conditions: Turner's Lane Hospital in New York City treated nervous disorders, identifying and documenting conditions such as facial nerve paralysis and phantom limb syndrome; and Desmarres Hospital in Chicago, Illinois, specialized in diseases of the eye and ear.

These were also the hospitals where the surgeons created the most detailed observations of the patient's post-traumatic recovery, while lower echelon hospitals provided basic information about the case, such as date of wounding and dates of subsequent surgical procedures. Compilation of these records after the war resulted in a comprehensive surgical case history of these soldiers. Case histories of medical patients, sometimes including the observations made at autopsy, were entirely generated at the hospital where they were treated, occasionally noting the general route of patient movement. These records formed the basis of the *Medical and Surgical History of the War of the Rebellion*, published by the Army Medical Museum after the war.

Conclusion

The possibility of a Large-Scale Combat Operation (LSCO) has resulted in a rethinking of the concept of how to handle the resulting casualties, conceptualized as Multimodal Patient Movement. Department of Defense *Joint Publication* (JP) *4-02* states: "The patient movement mission consists of unregulated and regulated movement, via CASEVAC, MEDEVAC, and/or AE [Aeromedical Evacuation] from the point of patient injury, illness, or wounding, through successive roles of care within the theater, to include evacuation to definitive care when warranted." The Civil War was the first LSCO fought by the armed forces of the United States and developed concepts described in *JP 4-02*. Recent changes in warfare doctrine such as Distributed Operations and Prolonged Field Care have prompted a reappraisal, just as Civil War surgeons grappled with a new style of warfare and developed a system for managing the resulting casualties.

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— 27 July 1775 —

Civil War Period Army Medicine Wagon: The Mobile Field Pharmacy

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President, Society for Women and the Civil War

This article provides information regarding the medicine wagons – mobile field pharmacies – used during the Civil War-era by the United States (U.S.) Army Medical Department, and, to a certain extent, by the Confederate States (C.S.) Army Medical Department. Less is known of the use of medicine wagons by the C.S. Army Medical Department; however, as this department's regulations, guidance and standards of practice generally followed that of its U.S. counterpart, a degree of similarity can be expected.

U.S. Army Medicine Wagons

During the Civil War, following a period of much error, then trial, each U.S. Army regiment, later brigade, was furnished with one medicine wagon positioned in its train of ambulances. The wagon was originally based upon an adaptation of an Army Wheeling-model ambulance with a series of evolving designs produced by differing manufacturers. The penultimate and most effective model followed the chassis design of the Autenrieth model ambulance and thus became known as the Autenrieth model medicine wagon.

The wagon was supplied with medications, stores, dressings, furniture and appliances, an amputating table, and a limited amount of bedding. The contents of the medicine wagon were constantly replenished from the stores of the medical purveyors who accompanied each army. Having stores and supplies organized in compartments of the wagon, rather than in panniers and heavy boxes carried in the bed of a general hospital transport wagon, meant that they no longer had to be constantly unloaded and re-loaded for use. It can be reasonably speculated that this saved lives of patients by speeding the process of making medications and supplies available to surgeons, stewards, and nurses. It also likely eased the challenge of tracking quantities of materia medica and anticipating the need for re-supply. The wagon was operated by a hospital steward, a non-commissioned officer, who may or may not have been a trained pharmacist prior to the war. He would have been assisted by an enlisted driver who held the position of waggoner.

Writing in his early twentieth century essays published in 1916 by the U.S. Army Surgeon General as *The Medical Department of the United States in the Civil War*, Louis C. Duncan, CPT, MC, USA, observed that, for Sherman's 1864 rapid campaign through the southeastern Confederate States, his orders for speed dictated that only one medicine wagon – and three hospital general supply/equipment wagons with just the basically necessary supplies for only thirty days – was allotted per division. The regiments were provided with one pack mule each for carrying panniers of medical supplies. To further lighten the load, hospital tentage was jettisoned in favor of canvas flys, and, rather than travelling empty, the ambulances carried hard bread and meat broth for patients.

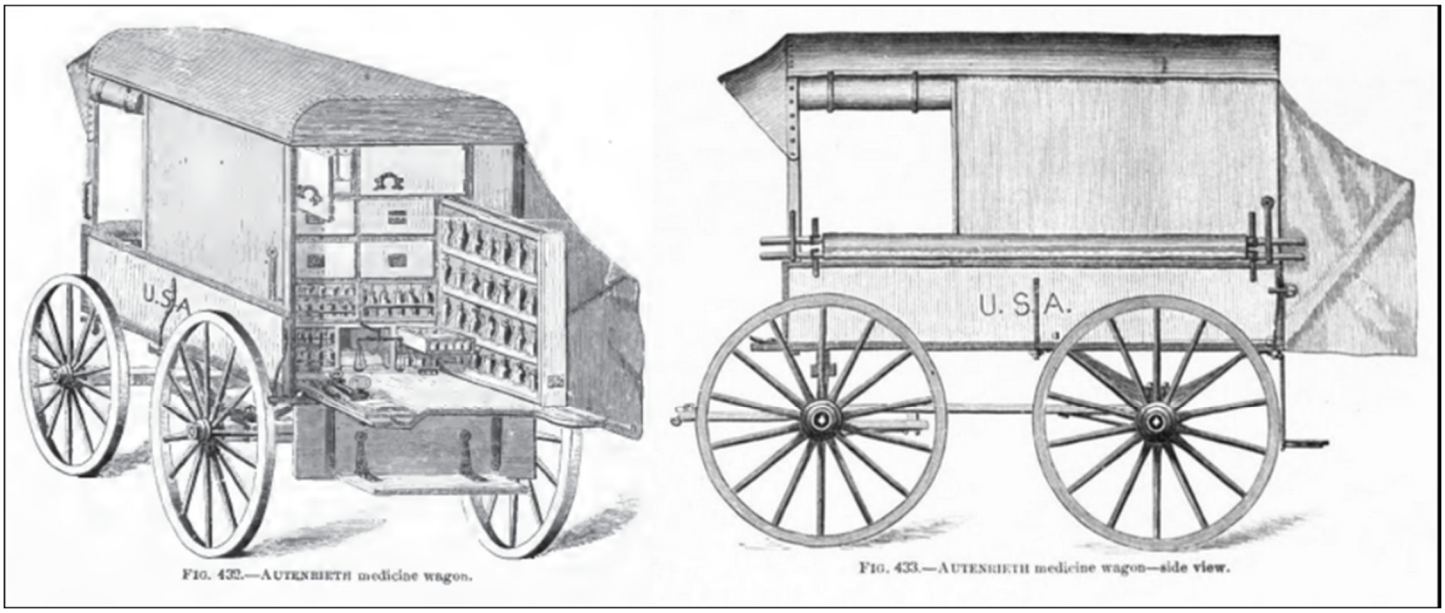


FIG. 432.—AUTENRIETH medicine wagon.

FIG. 433.—AUTENRIETH medicine wagon—side view.

Autenrieth U.S. Army Medicine Wagon. *The Medical and Surgical History of the War of the Rebellion*.

Design and Development

From the report of Surgeon J. J. Milhau, USA, to T. A. McParlin, Surgeon USA, Medical Director, the Army of the Potomac, 1865:

> In the early part of the war medical supplies and instruments had been carried in heavy army wagons. In March, 1862, a medicine wagon was constructed by E. Hayes & Co., of Wheeling, Virginia, in accordance with plans and instructions of Surgeon Jonathan Letterman, U.S.A. Details of the internal arrangement of this wagon, could not be obtained. A Board, consisting of Brigade Surgeon William Hayes and Assistant Surgeons Hammond and Dunster, USA, on April 17, 1862, examined the wagon and reported as follows: 'The merits of this dispensary wagon are so apparent, when compared with the old method of packing medicines and instruments in unwieldy boxes and transporting them in the heavy army wagons, that the Board unanimously approves of the same, and recommend that it at once be sent into the field where it can be practically tested. The adoption of a vehicle of this or some similar construction for the transporting of medicines, etc., in the field would be an actual saving in transportation over the present plan, as a three months' regimental supply can be carried with case in a single wagon dispensary. The advantage accruing from the prevention of loss by wastage and breakage, the convenience of having the whole together and unencumbered by other baggage, and the readiness of access to medicines, instruments, and dressings in case of an emergency, are so palpable that it is only a matter of surprise that some such plan has not been previously adopted.'

Surgeon Milhau continued:

> In June,1864, the Autenrieth pattern was furnished to the army [nine to each field army]. An improved wagon, recommended by the Medical Department and constructed at the [Schuykill Arsenal] Government shops, was adopted during the last year of the war. Surgical instruments were furnished by the Government, each medical officer making requisition for his equipment, receipting for it, and becoming responsible for its condition while in his possession; no transfers were allowed, and an annual return was required to be made to the Surgeon General. On leaving the service it was turned into the nearest medical purveyor, who receipted for the same. The instruments intended for surgeons and assistant surgeons of the regular and volunteer staff were comprised in three cases - one for capital operations, containing amputating, trephining, and resecting instruments; one for general and minor operations, composed of knives, forceps, catheters, etc.; and a pocket case. For regimental surgeons and assistant surgeons the field case was issued; this contained much the same assortment of instruments as those already mentioned, but were somewhat more closely packed and more easily transported. Teeth-extracting instruments and dissecting cases were also furnished to regimental and general hospitals. Great liberality was shown in providing special instruments and appliances, and every effort was made

to render the surgical equipment as perfect as possible.

The use of medicine wagons was also addressed in General Orders No.147, Army of the Potomac, 2 August 1862, and General Orders No. 106, War Department, 16 March 1864.

Contents of the Autenrieth Medicine Wagon

The original 22 July 1861 U.S. Congressional authorization for the raising and organizing of U.S. forces to combat the Confederate secession was vague regarding the organization and operation of medical services. This was remedied by the U.S. Congress in an act passed on 16 April 1862 which also directed the operations of military medical purveyors who would acquire and distribute medical equipment and supplies, to include those for medicine wagons. Section 5 stated that:

> *And be it further enacted,* That medical purveyors shall be charged, under the direction of the Surgeon General, with the selection and purchase of all medical supplies, including new standard preparations, and of all books, instruments, hospital stores, furniture, and other articles required for the sick and wounded of the army. In all cases of emergency they may provide such additional accommodations for the sick and wounded of the army, and may transport such medical supplies as circumstances may render necessary, under such regulations as may hereafter be established, and shall make prompt and immediate issues upon all special requisitions made upon them under such circumstances by medical officers; and the special requisitions shall consist simply of a list of the articles required, the qualities required, dated, and signed by the medical officers requiring them.

Although the U.S. Army's list of standard and approved materia medica was set by the 1862 U.S. Army Regulations Table of Supply, it is highly likely that unit medicine wagon contents received a degree of customization to meet the preferences of individual surgeons and hospital staff. Lessons learned from Civil War-era U.S. Army medical practice were incorporated into Circular No. 6, *Standard Supply Table of the Medical Department of the United States Army*, War Department Surgeon General's Office, 9 May 1867.

According to Surgeon J. J. Milhau's 1865 report, the standard contents of the maturely-developed medicine wagon included:

First Case: Tannic acid, 1 oz.; aromatic sulphuric acid, 8 oz.; powdered gum arabic, 8 oz.; stronger ether, 2 lbs.; Hoffman's anodyne, 1 lb.; alcohol, 64 oz.; alum, 8 oz.; solution of ammonia, 32 oz.; carbonate of ammonia, 8 oz.; aromatic spirit of ammonia, 4 oz.; tartar emetic, 1 oz.; nitrate of silver, 1 oz.; fused nitrate of silver, 1 oz.; subcarbonate of bismuth, 4 oz.; camphor, 8 oz.; simple cerate, 2 lbs.; cerate of cantharides, 8 oz.; resin cerate, 1 lb.; pure chloroform, 32 oz.; collodion, 4 oz.; copaiba, 16 oz.; creasote, 4 oz.; sulphate of copper, 2 oz.; fluid extract of aconite root, 4 oz.; extract of belladonna, 1 oz.; fluid extract of cinchona, aromatic, 16 oz.; fluid extract of colchicum seed, 4 oz.; compound extract of colocynth, 8 oz.; fluid extract of ipecac, 8 oz.; fluid extract of ginger, 8 oz.; tincture of chloride of iron, 8 oz.; citrate of iron and quinine, 2 oz.; solution of persulphate of iron, 4 oz.; powdered subsulphate of iron, 2 oz.; glycerin, 8 oz.; calomel, 8 oz.; blue mass, 8 oz.; mercurial ointment, 16 oz.; citrine ointment, 4 oz.; Dover's powder, 8 oz.; flaxseed, 6 lbs.; flaxseed meal, 12 lbs.; morphia, ¼ oz.; olive oil, 2 qts.; castor oil, 4 qts.; oil of turpentine, 1 qt.; croton oil, 1 oz.; powdered opium, 8 oz.; tincture of opium, 16 oz.; paregoric, 16 oz.; pills of camphor (2 gr.) and opium (1 gr.), 12 doz.; compound cathartic pills, 16 doz.; pills of compound extract of colocynth (3 gr.) and ipecac (½ gr.), 16 doz.; opium pills, 10 doz.; sulphate of quinine (3 gr.) pills, 12 doz.; chlorate of potassa, 8 oz.; acetate of lead, 8 oz.; bicarbonate of potassa, 8 oz.; permanganate of potassa, 32 oz.; iodide of potassium, 8 oz.; sulphate of quinine, 8 oz.; soap, 8 lbs.; syrup of squill, 3 lbs.; powdered black mustard, 9 lbs.; bicarbonate of soda, 8 oz.; solution of chlorinate of soda, 32 oz.; Rochelle salt, 16 oz.; sweet spirit of nitre, 2 lbs.; solution of chloride of zinc, 1 lb.; sulphate zinc, 1 oz.; sulphate cinchona, 2 oz.; arrow root, 10 lbs.; extract of beef, 16 lbs.; brandy, 6 qts.; farina, 10 lbs.; nutmegs, 4 oz.; sugar (white, crushed), 15 lbs.; extract of coffee; black tea, 10 lbs.: whiskey, 6 qts.; patent lint, 6 lbs.; scraped lint, 2 lbs.; roller bandages (assorted), 32 doz.; suspensory bandages, 8.

The wagon also contained surgical instruments, books, and stationery, prescription furniture and utensils, bedpans, urinals, tow, coffee mill, rubber buckets, tin basins, wash-hand basins, blankets, gutta percha bed-covers, lanterns, and a hatchet. The medicines were arranged in slides; the hospital stores, dressings, furniture, utensils, etc., were arranged in drawers or on shelves.

C.S. Army Medicine Wagons

As noted above, while less is known of C.S. Army medicine wagons, it is reasonable to speculate that the C.S.

Army medicine wagons development probably followed that by the U.S. Army, but more slowly, with less standardization vs. improvisation, and with fewer numbers. Additionally, the numbers of medicine wagons captured by the C.S. Army from the U.S. Army have not been identified by the author; however, it is likely that at least some fell into the hands of C.S. forces. It is further likely that they would have been informally integrated into some C.S. Army usage and that they would have influenced that army's field surgeons.



Pallas Athena Ladies Aid Society's (PALAS) restored/reproduced U.S. Army Medicine Wagon, View of rear end dispensary, showing slide-out work table. Photograph by M. Norat for PALAS.

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— 27 July 1775 —

Hospital Trains

Sanders Marble, PhD

The Civil War was the first war the U.S. used railroads to move patients – the idea had first been used in 1855, so the U.S. was quickly adopting the concept. There was no pre-planning, and the first efforts were makeshift, simply putting wounded in open or enclosed box cars. Moreover, these improvised hospital trains might or might not have medical attendants. These ad hoc trains were used from August 1861, only a month into the war.

It was obvious that more could be done and soon passenger cars were adapted for the wounded. Bunks were installed, attendants were assigned to provide enroute care, medical supplies loaded, and kitchen cars attached for longer routes. Hospital trains were also marked so the enemy would not fire on them, and this worked in at least one case – Confederate raiders delayed wrecking a rail line until after a marked hospital train passed by.

Even once purpose-adapted hospital trains were in use, improvised trains might be used because of local circumstances. For instance, the military railroad built to support the 1864-1865 siege of Petersburg, Virginia had limited rolling stock and sidings, so patients were moved back to the logistics base in the same cars that had brought supplies forward.



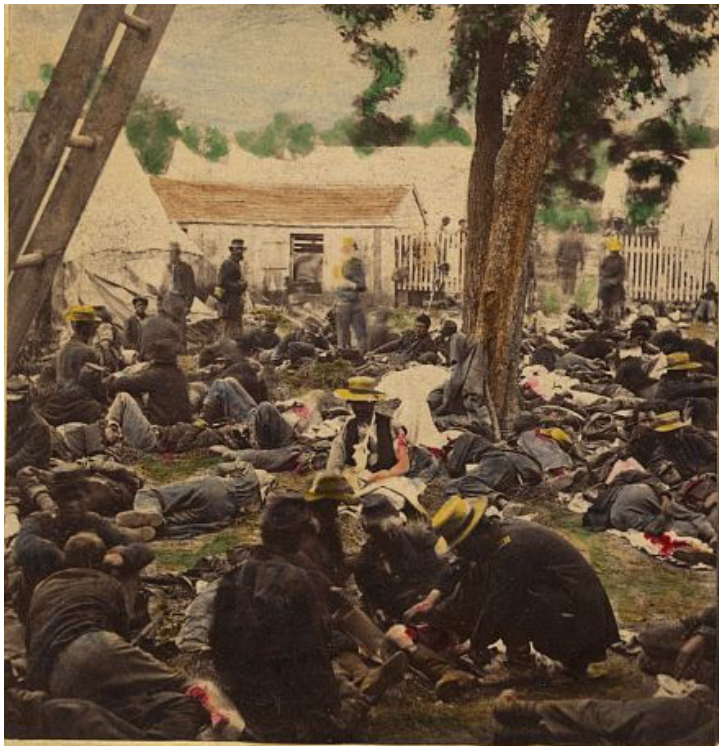
Interior of a Harris Hospital Car. *Harper's Weekly*, February 27, 1864.

— 27 July 1775 —

A Story of Mixed Results: Charles S. Tripler, Medical Director of the Army of the Potomac, Part II

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[Continued from #53, Spring 2026]



Medical personnel tending wounded Union soldiers at Savage's Station, Virginia, during the Peninsular Campaign. Library of Congress.

Going On Campaign

From August 1861 through February 1862 Medical Director Charles S. Tripler was mainly focused on healthcare for a tented city. The Army of the Potomac (AoP) was organizing, equipping, and training, but hardly fighting. The largest skirmish involved only a brigade. Major General George B. McClellan, AoP Commander, did not inform Tripler of plans to advance, but in early March Tripler suddenly issued guidelines for medical care on campaign; clearly something happened. Regiments were instructed to evacuate their wounded to "field depots" (aid stations today), treat them (including surgery), and transport them in ambulances further back. However, where to move them was unspecified because there were no personnel for hospitals outside the regiments. He tried to recall doctors who had been detached to augment general hospital staff, while ordering the regimental hospitals cleared of anyone who would not return to duty soon. A few convalescents were acceptable because they could look after the camps while the main force marched off. He now tried to decentralize ambulances that had been centralized under his control. The general hospitals were expanded, including repurposing some barracks and adding tents at existing hospitals. Tripler lost his few staff officers. His supply officer was ordered to remain in Washington, while the newly organized corps were assigned medical directors, most of whom came from the staff.

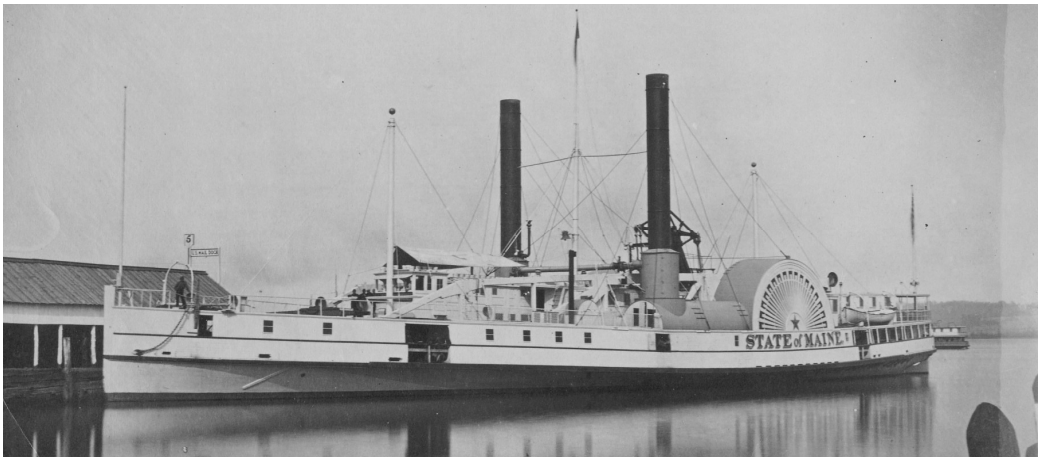
The move changed McClellan's and Tripler's responsibilities. McClellan became essentially an expeditionary force commander; he (appropriately) lost command over troops left to defend Washington, D.C., and supporting organizations. For Tripler, the supporting organizations were the medical supply depots and general hospitals; these would mostly fall under The Surgeon General and now require substantial coordination.

To Yorktown

On Wednesday April 2, 1862, Tripler arrived at Fort Monroe. The next morning, he met with Surgeon John Cuyler, in charge of medical support for the troops at Fort Monroe. Tripler sought space in the hospitals there (largely converted resort hotels) but found there was little excess. For the rest of his time in the campaign, Tripler would balance hospitalization and evacuation. The more hospital beds he had forward, the more troops could be kept there to recuperate and thus return to duty sooner. But he had very limited personnel to staff such facilities, while establishing hospitals would require more supplies and expand the vulnerable bases. In preferring forward hospitals, Tripler had seen good results in returning troops to duty during the winter of 1861-1862: 70 percent returned to duty promptly. Tripler had to arrange with the AoP Quartermaster and The Surgeon General to evacuate patients from the Peninsula to hospitals in the North. The hospital ships would be a new problem, because the Sanitary Commission would be involved in addition to various Army elements.

The next month involved operations around Yorktown. Estimations predicted 6,000 casualties for an attack, and McClellan opted for a siege. That bought Tripler time to develop hospital facilities, which he did. Medical supplies arrived without incident, although they were frequently mixed in with other cargo and hard to find, or their unloading was delayed. Extra supplies were needed because units had left hospital tents at Washington. Throughout the Peninsula Campaign regiments tended to leave medical supplies behind when they changed camps, requiring repeated resupply. In the fixed environment of Washington, D.C., he was able to influence moving garrison activities away from the swamps. But in fighting on the Peninsula, the "malarial poison" of the swamp is where they lived. Meanwhile, just to staff the hospitals, Tripler had to borrow personnel from Fort Monroe, or his subordinate units, or from the Sanitary Commission, or

from civilian groups who came to the area to help. With scanty hospital space, Tripler had to evacuate more patients although he tried only to send out those with lengthy prognoses. He also sent patients north ahead of the planned Yorktown attack, clearing hospital space for battle casualties. These early procedures before dedicated hospitals ships and transport required the medical director to coordinate with the AoP Quartermaster (who hired the ships), civilian ship crews (some of whom avoided hospital work for fear of infection), the Surgeon General (who provided medical supplies), and often the Sanitary Commission. Each mission to evacuate patients entailed numerous staffing without a smooth, centralized process.



State of Maine, hospital ship, with the U.S. Sanitary Commission during the Peninsula Campaign in 1862. digitalcommenwealth.org.

By the time McClellan was ready to assault the fortifications around Yorktown, Tripler had established hospitals, acquired supplies on hand, and formulated a basic plan to evacuate patients out of the Peninsula. He had shown political acumen in persuading delegations of doctors from Pennsylvania, New York, and New Jersey to shift from helping the wounded from their states to working as needed and decently with the Sanitary Commission. He obtained support from Washington with a new Surgeon General (Dr. William A. Hammond, chosen after pressure from the Sanitary Commission) who was willing to push against outdated Army regulations. The Confederate withdrawal from Yorktown meant there was far less fighting than expected (under 1,500 casualties), so Tripler's system coped.

On to Richmond

The Confederate withdrawal let the AoP move quickly, and the next base of operations was at White House, perhaps 60 miles forward along the York and Pamunkey Rivers. White House itself was a hamlet, but it had wharves and was near a small railroad needed for the hundreds of tons of supplies the AoP would require daily. Tripler kept the existing hospitals around Yorktown (and Surgeon Cuyler kept his around Fort Monroe) but pushed a medical depot to White House and tried to establish a forward hospital there. Lashing a group of hospital ships together as a floating hospital in the river was innovative but was not going to provide enough beds. The frustrations of a new hospital (the troops erecting the tents dawdled) built up and Tripler lost his cool. On May 18th he joined Frederick Law Olmstead in dropping a long list of problems on the Sanitary Commission leadership in Washington. He needed supplies (especially stimulants), he needed ambulances, he needed authority over hospital ships sorted out, he needed 6,000 beds at White House. It was likely disconcerting to get a telegram the next day from Surgeon General Hammond (who was hand-in-glove with the Sanitary Commission), relaying some good news. Hammond was getting full control of hospital ships, and he passed some of them on to Tripler. However, Hammond also imparted some physician-heal-thyself comments, "you have been given full powers to act altogether independently, and must be your own judge of what is best to be done" and similar. Hammond's frustration continued, and on the 22nd he telegraphed "it is regretted that with nearly a year for preparation, you should now be without surgeons, without suitable stores and hampered with the sick on your hands" and although he continued "I do not blame you for this condition of affairs, but I do blame those who have, as I am given to understand, turned a deaf ear to your supplications." Tripler was not getting full-throated support.

Supplies began flowing better, and more personnel became available, but Tripler grew very frustrated at the evacuation flow. Stragglers who wanted out of the Peninsula had rushed onto a hospital ship, and the doctor Tripler sent to turn them back failed. The demoralized soldiers would not take orders from a physician. Determined to send only wounded north and keep all the sick in the Peninsula because many would recover, Tripler boiled over and stopped being a staff officer and reverted to being a doctor. He personally checked patients to see who was shamming. Tripler knew retaining many sick patients would fill the hospitals, and untrained observers also noticed. A convalescent hospital was required, but there was no staff for one. Table 1 shows the scale of the problem - evacuating all the sick would quickly result in almost no soldiers available for duty. By May 29th, Tripler felt the need to send a note around the AoP addressing "causes and prevention of so many men belonging to this army being absent and unfit for duty." Part of the problem was rising rates of both malaria and typhoid, entirely unrelated diseases that were both exacerbated

by the topography. The swampy conditions meant plenty of mosquitos to spread malaria and (combined with the poor sanitation the troops practiced) contaminated water. Bacteria did not respect rank, and McClellan himself contracted dysentery around May 20th, not leaving his sickbed until the evening of May 31st.

Table 1. Army of the Potomac sick numbers, Peninsula Campaign.

Month	Mean strength	Cases of sickness	Deaths from sickness
April	71,259	16,694	116
May	72,536	18,896	497
June	78,733	24,690	375
Totals		60,280	988

Source: Paul E. Steiner, *Disease in the Civil War*, 124. Strength is for troops in the Peninsula, not those assigned to the AoP but not arrived.

Battle of Fair Oaks

Tripler restricted evacuation for good reasons, but two days later the Confederates attacked. In two days of fighting, the AoP suffered around 3,500 wounded. By itself, this would have been a problem. With hospitals full of sick soldiers who were expected to return to duty, it was a serious problem. Hammond blocking evacuation for five days (because the northern hospitals were full) made it a hideous problem. The Confederate attack caught United States troops split across the Chickahominy River with only two bridges having survived torrential thunderstorms. That slowed ambulances coming back – it was more important to push reinforcements forward – and Tripler could do little for the corps in action. He went to a forward hospital and assessed, pulling forward more supplies and extra surgeons, and managed evacuation back to White House, and juggled patient movement further back on the Peninsula. The rain also hampered the ambulances (and medical supply wagons) and even washed out the railroad back to White House. Delays getting wounded across the bridges, then back to White House caused some to arrive with dead flesh rotting. The stink extended into the press, further damaging Tripler's reputation.

True to his word, after five days Hammond had some beds available and patients could be evacuated. Tripler moved patients out but still saw patients as the best source of reinforcements and worked to keep his hospitals full. He instructed, "Take none but wounded, no sick at present. Loss of a finger or the like is not sufficient to send a man north." Shortly thereafter, however, Hammond began meddling in Tripler's responsibility, directing him to close a hospital and shift patients around.

After the Battle of Seven Pines, Tripler's job simplified to managing the evacuation of modest numbers of patients, overseeing supply distribution, continuing to expand the hospitals, and moving doctors here and there. He established a forward hospital at Savage's Station on June 16th, not just the railroad station closest to the front, but on the Richmond side of the Chickahominy. While not everything went smoothly, Tripler intended a large hospital at a key road/rail junction, allowing evacuation and resupply, along with nice touches like ice in the icehouse. Upon reports of scurvy in the Army, Tripler distributed antiscorbutics and advised the corps commanders how to deal with the disease. The sick list lengthened as mosquitos spread malaria, while troops wearing wool uniforms in a Virginia summer drank any water they could get, including from the edges of swamps. This sick list lengthened, but was manageable, although Olmstead wrote independently to Hammond recommending more hospitals. Tripler's staff was apparently all assigned to duties commanding the ad hoc hospitals, although Hammond himself appointed another doctor to handle the hospital ships. On May 21st Tripler was nominated in the Senate to be Medical Inspector-General for the Army. That was a new position with undefined duties, but clearly away from the front. On June 18th, McClellan decided to shift his base from the Pamunkey to the James River, and on the 19th Tripler heard the Senate had rejected his nomination. Most likely the Sanitary Commission leaders in Washington had lobbied against him. Tripler immediately told Hammond he wished to be relieved, but he stayed with the AoP rather than leaving an acting medical director in the lurch.

The Seven Days Battles

McClellan was planning to resume his advance on Richmond, but that turned into the Battle of Oak Grove on



Flat cars loaded with wounded, Savage's Station, Virginia, June 1862. The 7-mile trip from Savage's Station to the hospital at White House took approximately 1.5 hours. In the Peninsula Campaign, some evacuation trains had medical attendants, and some did not. Library of Congress.

June 25th. Ahead of that Tripler was pressing the corps to evacuate patients from their hospitals and expanding the hospital at Savage's Station with personnel, tents, and supplies. As the Rebel attacks that turned into the Seven Days Battles also got underway on June 25th, Tripler was managing a medical system that would have to handle more wounded in the next week than in the whole Peninsula Campaign to date. He warned the hospital at White House of impending arrivals; oversaw railroad evacuation; worked with the AoP Quartermaster General in charge of transportation to move patients out of White House; peremptorily directed ambulances to support other corps; directed ambulances; and ordered more supplies up to Savage's Station. Tripler apparently based himself there, helping with surgeries, but also got out to see the situation at various corps. As the AoP position deteriorated, he ordered the hospital ships to clear patients to the closest hospital rather than an optimal one further back because he needed the ships returning sooner. When the Rebels cut the railroad to White House, ambulances had to compete for road space with all the other vehicles of the retreating AoP. Walking wounded began making their own way to the James River. On June 28th Tripler had to write an unprecedented message - he left a note asking the Confederate commander to take care of the patients who had to be abandoned in the hospital at Savage's Station.

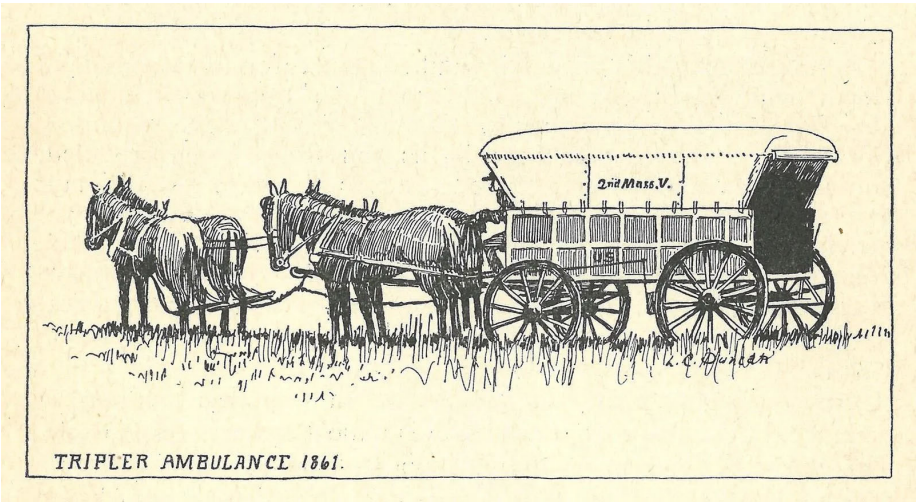
As the AoP fell back to the James River, Tripler had 300 patients evacuated on a gunboat; for them, prompt evacuation was better than waiting until a hospital ship arrived. He tried to load hospital ships, but the wharf was needed to unload food. Elsewhere, stragglers had to be pushed (several times) off a steamer to evacuate sick and wounded. Tripler put his contingency reserve of supplies to use, organizing a general hospital so the regiments could focus on maneuvering rather than be tied down with their sick and wounded. On July 3, 1862, Tripler relinquished his position to Surgeon Jonathan Letterman and embarked for Washington, D.C. No less than 55 of his fellow staff officers wrote a farewell note, and McClellan wrote a kind letter as well.

Tripler headed to Detroit, where he was medical director for a geographical district (the name and boundaries changed through the Civil War) without drawing much attention. The Sanitary Commission was done with him, and the press focused on medical conditions with the field armies, not in the rear, although problems would doubtless have attracted attention. Tripler died on 20 October 1866 from cancer.

Finale

From Detroit, Tripler wrote a lengthy report about his tenure as Medical Director. He blamed bad doctors for some of the problems, although he pushed them out of the Army as he was able. He spent more time lamenting the bad administration by the remaining doctors, doctors who (in his eyes) *chose* not to work systematically. That looks like a red-tape obsessed fuddy-duddy, the sort of caricature that was certainly true of some Regular Army officers. Let us ask, though, what had Tripler done to explain himself and bring those doctors in uniform into the system? Aside from interviews with doctors arriving in the AoP, Tripler seems to have only sent circular letters, a traditional Army method to announce and explain procedures. (Not that the government had many ethics rules in 1861, but he did not require doctors to buy copies of his book, which still was popular enough for three printings from 1861 to 1862.) Circulars were a form of working through the chain of command. Once a doctor was assigned to a regiment, there was a brigade surgeon and soon enough division and corps medical directors to whom he reported, and Tripler did not sideline them. Both around Washington and in the Peninsula, Tripler certainly got out of his office and had meetings, but there is no evidence he met with junior doctors to explain the Army's system and what he needed from them so he could direct the whole system.

It was easy for contemporary observers to see Tripler was not directly pushing and pulling people, driving the system. That was accurate; he was indirectly leading which was less visible than someone going here and there, issuing orders and not necessarily establishing a system. Certainly, most of the Sanitary Commission leadership was unimpressed with his activity, although they tarred most of the Army's senior medical leadership with the brush of former Surgeon General Clement Finley and some others deserved and never deigned to mention Tripler's name in their history.



1861 Tripler Ambulance in *The Medical Department of the United States Army in the Civil War.*

(Olmstead had a far better relationship with Tripler, although both had dyspeptic moments, perhaps brought about by momentary stress, fatigue, or – given Army rations and cooking of the time – actual dyspepsia.) George McClellan had kept Tripler in September 1861, and afterwards there are no signs he urged Tripler to stay or go – or that McClellan had any leadership advice for Tripler.

Tripler was good but certainly not great. He did much to organize a medical system in the Army of the Potomac and the hospitals behind it. Around Washington, he dealt with medical supplies and equipment, he provided all the preventive medicine advice that was possible at the time, he organized hospitals and oversaw the treatment of patients. During the Peninsula Campaign he again organized depots and hospitals, and coordinated evacuation, trying to care for all the patients and return as many as possible to duty. Throughout his tenure, there was questionable support (and at times opposition) from the Surgeon General. There was pressure from Congress and the Secretary of War. The doctors Tripler had to oversee lacked experience with military procedures, and regimental officers were not accustomed to a doctor doing more than treating patients. The role of the Sanitary Commission was unclear. The number of patients, first sick and then also wounded, overwhelmed the Army's prewar medical system. Charles Tripler's talents could not solve all these problems. He made some progress on all, and wartime experience helped change expectations. Jonathan Letterman would benefit from Tripler's work, and from those changed expectations. Tripler left the Peninsula and took a job within his talents but left his successor a better starting point than Tripler had found. He had truly been "neither a complete success nor a very decided failure."

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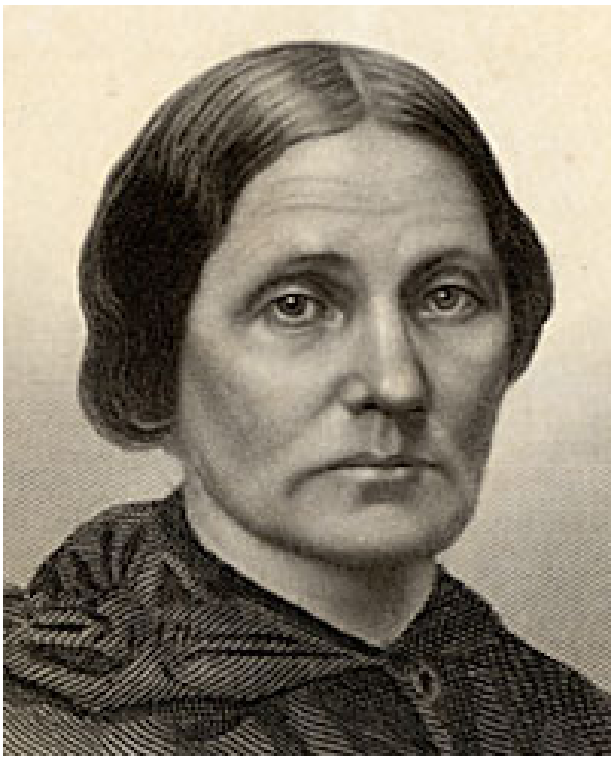
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— 27 July 1775 —

Mary Ann Bickerdyke, Her American Civil War Service, and Implications for Current Nursing Practice

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Mary Ann Bickerdyke (19 July 1817 to 8 November 1901) volunteered in June of 1861 to serve in the American Civil War. A widow, mother, and stepmother, she devoted uncompromising years of service as a nurse, humanitarian, and naturopathic physician during the Civil War. She dedicated her service to maximizing the success of improvised hospital wards while personally caring for sick, injured, and dying soldiers. Alongside these great accomplishments, she advocated for institutional improvements in healthcare for American soldiers during wartime and for United States' veterans after the war. Known as being plain and practical in appearance and social interactions, she would frequently engage directly with generals to procure supplies to advocate and protect her patients. These generals included both Ulysses S. Grant and William T. Sherman, and she quickly gained their respect and trust through her upfront and direct communication practices. Because she was so revered, generals would request her to be assigned within their regiments, and by the time the Civil War ended in 1865, "Mother" Bickerdyke had tended to soldiers on 19 battlefields and helped establish or improve countless makeshift hospitals. Her dedication to holistic nursing care, compassion, and advocacy transformed American nursing practice. Her legacy continues to shine as a beacon for nursing professionals working across the continuum of care today. As a stellar example of a nurse who rose to the occasion of war-induced desperation with grace and compassion, she demanded competent care for her patients. She led by example, building relationships with community members and leaders to achieve the best possible outcomes for American soldiers and veterans.



Mary Ann Bickerdyke. Library of Congress.

Early Life

Born Mary Ann Ball in rural Knox County, Ohio on 19 July 1817, Mother Bickerdyke was raised primarily by her grandparents and showed proclivity for books and athletics as a young person. At age 16 she left home for boarding school in Oberlin, Ohio. Historically, records of her medical education remain ambiguous, but indicate that she began her nurse training in Cincinnati at age 20. Her lifelong dedication to herbal and nutritional medicine points to possible training as a young adult with physician Dr. Zimri Hussey (7 March 1808 to 9 June 1870) at his Physio-Botanic Medical College.

Marriage and Family

Mary Ann worked as a housekeeper and visiting nurse before she married a widower, Robert Bickerdyke, in 1847. During her marriage, she raised three step-children and two of her own sons while she remained active in both church and civic activities. When her husband's health started to fail, the family moved to Galesburg, Illinois, in hopes that his health would improve. However, the family's efforts were to no avail, as Robert's health continued to decline. He passed away in 1858 at the age of 54. This event spurred Mary Ann to pursue a professional career where she advertised her services as a nurse and naturopathic practitioner.

Service During the Civil War

The American Civil War from 1861 to 1865 was the bloodiest conflict on American soil. In total, there were approximately 750,000 combined deaths for Union and Confederate soldiers. However, only one-third died as a direct result of battlefield trauma, and the remaining two-thirds perished from disease. The devastation of the Civil War thrust American women into positions of power and authority in healthcare that they had conventionally maintained in the home during the antebellum period. During the nineteenth century in America, caregiving and nursing tasks fell inherently into the domain of wives, sisters, mothers, and daughters, who fulfilled obligatory duties of care for the ill as an extension of

caretaking roles and responsibilities within the home. Between 1861 and 1865, more than 20,000 women in the Union and Confederate states worked as nurses and matrons in Civil War hospitals. In these roles, American women fought disease, infection, and the medical institution's infrastructure itself. Tragically, from the beginning of the war Union and Confederate leaders vastly underestimated the duration of the conflict and its requirements for medical resources. They systematically embraced an overconfidence that the existing corps of physician officers and enlisted male nurses in Army hospitals were enough to counter the devastation of the war. Therefore, the American Civil War necessitated action and brought opportunity through volunteerism among many American women by translating domestic experience in caring for the sick into a newly defined environment of nursing for civil discord and battle.

Two years after her husband's death, Mary Ann's service in the Civil War began when she was tasked to deliver $500 and supplies from the Congregational Church in Galesburg, Illinois to the church's regiment in Cairo, Illinois. To do so, she left her two sons in the hands of fellow church members and embarked on a journey of war service that would last five years. She quickly earned the title of "Mother" due to her tenacity in procuring supplies, negotiating with generals for the welfare of the soldiers, and committing to hygiene, nutrition, nursing care, and adequate shelter. Her overarching contributions during her service included exemplary professionalism, which embraced patient advocacy; nursing leadership at the systems level; holistic care encompassing hygiene, nutrition, and environment; and the establishment of a professional relationship between clinical authority and formal clinical competence.



Daughters of Union Veterans and Ladies of the Grand Army of the Republic gather at Mother Bickerdyke's sculpture in Galesburg, Illinois. Galesburg Public Library.

Post-Civil War Life and Death

When the Civil War ended, Mother Bickerdyke chanced upon prisoners from Andersonville Prison Camp in Georgia during her travels. Instead of joining General Sherman after witnessing their despair and critical need for food and care, she assisted in their release. She then accepted an assignment to the Home for the Friendless in Chicago, a shelter for disabled war veterans. Between 1866 and 1868, Mother Bickerdyke assisted over 300 veterans and their families to receive pensions and benefits owed to them by the U.S. government. Ultimately, she returned to Kansas in 1874 to live with her sons. Here, she continued her service by assisting veterans and working as a home health nurse. Mary lived to 84, dying at her Bunker Hill, Kansas home in 1901. She returned to rest in a grave beside her husband and infant child, Mattie, in Galesburg, Illinois.

The legacy of "Mother" Bickerdyke has implications for contemporary nursing practice. The Civil War was a dark and tumultuous time in American history, but even after the Union Army's victory many veterans continued to face difficulties in life. Simultaneously, women of the Civil War generation sought inclusion in higher education, professional careers, and even politics. Previously, in earlier decades of the nineteenth century, nursing care was considered an activity exclusively provided at home by women. Nursing skills were passed down among women as a family duty or as part of the domestic service trade, and while earlier historical attempts to grow nursing as a profession were not entirely successful, the outbreak of the American Civil War became the catalyst for change. While an argument exists that all nurses experience distress and ethical issues in war, contemporary nurses have different stories from those of previous generations because of the medical and technological advances acquired in the years since the Civil War. However, despite having different stories, American nurses who served in the wars in Iraq and Afghanistan experienced ethical themes that were not far removed from the experiences of Mother Bickerdyke. The strides accomplished by Mother Bickerdyke during the Civil War paved the way for contemporary nurses to employ advocacy, holistic care, evidence-based practice, relationship building, and professionalism to pave the way for further advances in battlefield nursing and a means to cope with ethical dilemmas.

To fully appreciate the strides accomplished by Bickerdyke and even her contemporaries, one must understand

the historical context of the American healthcare system, or lack thereof, in the antebellum period. In the 1850s and early 1860s, nursing was not yet recognized as a profession, and hospital care was largely custodial. Formal nursing education did not yet exist in the U.S. Florence Nightingale published *Notes on Nursing* in 1859, but her influence had not reached and impacted American nurses. Antisepsis had not been established, as Joseph Lister did not publish his foundational work until 1867. In Mother Bickerdyke's case, the Union Army's medical infrastructure was catastrophically underprepared. Hospitals were improvised from barns, churches, and railroad depots. Supply chains for bandages, food, and medicines were unreliable. The Civil War forced change, and Mother Bickerdyke was part of that process alongside other invaluable contributors and accomplishments. Dorothea Dix was appointed Superintendent of Army Nurses in June 1861, overseeing the recruitment and certification of female nurses for Union military hospitals. Additionally, the U.S. Sanitary Commission was founded in 1861 to collect and distribute medical supplies, coordinate volunteer labor and station agents, many of whom were women.

Conclusion

The Civil War did not create professional nursing in America, but it created conditions that confronted societal need for improvements in battlefield nursing and the role of the professional nurse. Mother Bickerdyke embraced this societal need with unfettered energy and self-sacrifice, including leaving her own sons to care for the sons and fathers of a relatively young country at war. Extreme conditions, with minimal supervision, permanently altered public and institutional attitudes toward nursing practice. Mother Bickerdyke's legacy includes patient advocacy; nursing leadership at the systems level; clinical authority and competence; and nutrition, hygiene, and environmental conditions paving the way for holistic nursing and evidence-based practice guidelines. Each new generation of nurses must assert themselves in the face of new challenges to their professional standing. Her methods of demonstrating competence, building relationships, systematizing outcomes, and refusing to be turned away when patient needs arose exemplify what it means to be a professional nurse today. After the war, the first American nursing schools opened in the U.S. The Sanitary Commission helped pave the way for Clara Barton to found the American Red Cross in 1881, and the American Nurses Association was founded in 1896. Bickerdyke also transformed the postwar institutional landscape by assisting veterans in securing pensions and securing homes while continuing her advocacy for the welfare of former soldiers. The professional space that contemporary nurses inhabit was built in part by the work of women who had no formal training, no professional organization, no legal protections. However, they were guided by compassionate conviction and competence. In Mother Bickerdyke's case, she had the added wisdom to know that the support of generals ultimately contributed to the success of improved nursing care for soldiers and well-being for veterans.

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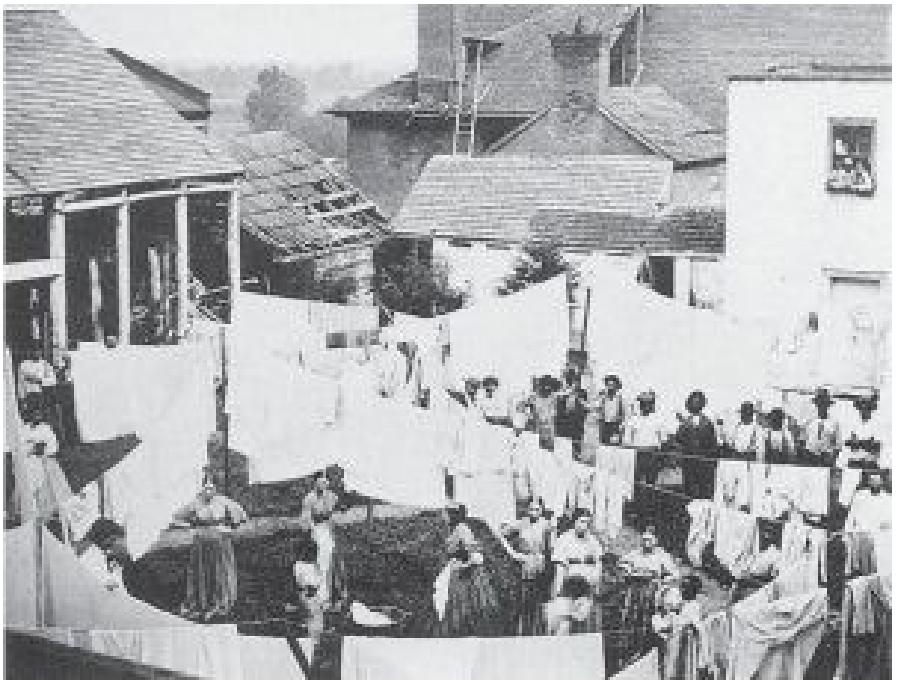
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— 27 July 1775 —

"Fancy Women:" The Army's Experiment with Legalized Prostitution

LTC Robert Brandon Hulette, Assistant Professor, Vanderbilt University

Sexually transmitted infections (STI) have long been a significant health concern for military populations, an unsurprising reality given the fact that some of the strongest risk factors for STI in adults are relatively young age and male sex. Indeed, as recently as 2021 the National Academies of Sciences, Engineering and Medicine concluded military recruits and active-duty service members require focused consideration for STI prevention and STI continue to represent one of the highest health care burdens attributable to infectious diseases in the United States (U.S.) military.



Hospital for prostitutes. Tennessee State Library and Archives.

This was similarly true in the Civil War period, where a poor understanding of these infections led to limited opportunities for prevention in an era before the germ theory of disease or even basic microbiology were known. Likewise with few effective treatments available, and most that existed involving the administration of preparations that included heavy metals such as mercury, arsenic or bismuth for lengthy periods of time, it is also unsurprising that at least 8.2% of all U.S. soldiers developed an STI during the war, a figure that likely underrepresents the true burden of these diseases on U.S. forces.

Prostitution was also widespread in the Civil War period, especially in cities occupied with large numbers of Federal Troops for much of the war like Nashville and New Orleans. Before the war, authorities in many of these later-occupied cities passed laws attempting to limit the world's oldest profession, although they met with limited success, and seldom directly referenced prostitution itself. For example, beginning in 1855, Nashville's city council issued sporadic ordinances forbidding "lewd" women from either using vulgar language to passersby or exposing themselves in street doorways. However, despite such measures, Nashville had a thriving home-grown prostitution industry centered around "Smokey Row," a six-block area around modern 2nd-4th Avenues. Indeed some 207 women listed their occupation as "Prostitute" in the 1860 census with a mean age of 29, of which 113 indicated that they were native Tennesseans.

In the antebellum era, through the early months of the war, police in Nashville arrested brothel madams such as Nannie McGinnis at approximately monthly intervals, fined them according to the number of prostitutes they housed, and then released them, effectively taxing madams according to how many operatives they claimed. This elastic penal system treated brothel occupants much better than streetwalkers, in part because the brothels often became "hidden" from public view and often seemed respectable to the casual observer. The police occasionally arrested a brothel's inmates but usually only in extraordinary circumstances.

Nashville's brothels were known as houses of ill fame, ill repute, bawdy houses, or parlor houses, and some reflected great affluence, while others showed abject poverty. However, in the relaxed toleration of pre-war Nashville, law enforcers and religious representatives frequently shared residences with known prostitutes

The largest house was that by Rebecca and Eliza Higgins at 101-103 North Front Street. Rebecca owned real property valued at $24,000 and personal property amounting to $1,500, which were very large amounts in those days. Twenty-eight people lived in the house, of whom seventeen were prostitutes, one was a carpenter, one was a bricklayer, six were children in school, two were of pre-school age, and one was a 22-year-old black man named Tom Trimble.

Eleven prostitutes worked at Mag Seat's place, address unknown. Mag was a 25-year-old Tennessean who seemed able to keep a more youthful group than some of her competitors. Six of her 11 girls were in their teens, and the oldest was but 24. At 72 North Front Street was Martha Reeders where 10 prostitutes and two pre-school children lived. The 31-year-old Tennessee-born madam reported owning personal property totaling $15,000.

Large houses, however, were often the exception rather than the rule. Nineteen of the 69 houses in the city were operated by one woman, 25 had two women, and 12 had three women working. Jennie Rogers kept a typical brothel with three other women. Her house was situated next to a Methodist clergyman's family and a tavern, which also housed four prostitutes and three adolescent boys. Sarah Hughes, a 42-year-old married prostitute, lived with an older woman in a flat between a policeman's family and a university professor.

When Nashville was surrendered to U.S. forces on February 23, 1862, Federal troops rapidly transformed it into a military outpost. Andrew Johnson was appointed military governor of Tennessee and set up an occupation government in the now fortified capital building which was renamed "Fort Andy Johnson." Whole blocks were converted to large warehouses up to 8 blocks long, and factories were converted to production of war materiel for the Federal war effort. To protect it all and remind resentful residents who was now in charge, a system of fortifications was built with non-stop construction until May of 1865, remaking the capital city into "Fortress Nashville" one of the most fortified cities in the world at the time.

With this transformation, and the realization that this was not to be a quick, small-scale war, Nashville also became the temporary home of thousands upon thousands of soldiers, most 18-22 years old, away from home for the first time, facing an increasingly uncertain future on the battlefield *and paid in cash…*

With this flood of soldiers entering Nashville, demand for the services of "public women" soared, and as the political, economic and social structure of Confederate Tennessee collapsed, so too did the supply. By 1862, the number of public women in Nashville had increased to nearly 1,500, and they were always busy. Union troops a long way from home handed their meager paychecks over to brothel keepers and street walkers with abandon, and Nashville's military occupiers neglected the unspoken regulatory system in place before the war. One private from Mahoning County, Ohio, Benton E. Dubbs, recalled that while he was in Nashville, "There was an old saying that no man could be a soldier unless he had gone through Smokey Row.…"

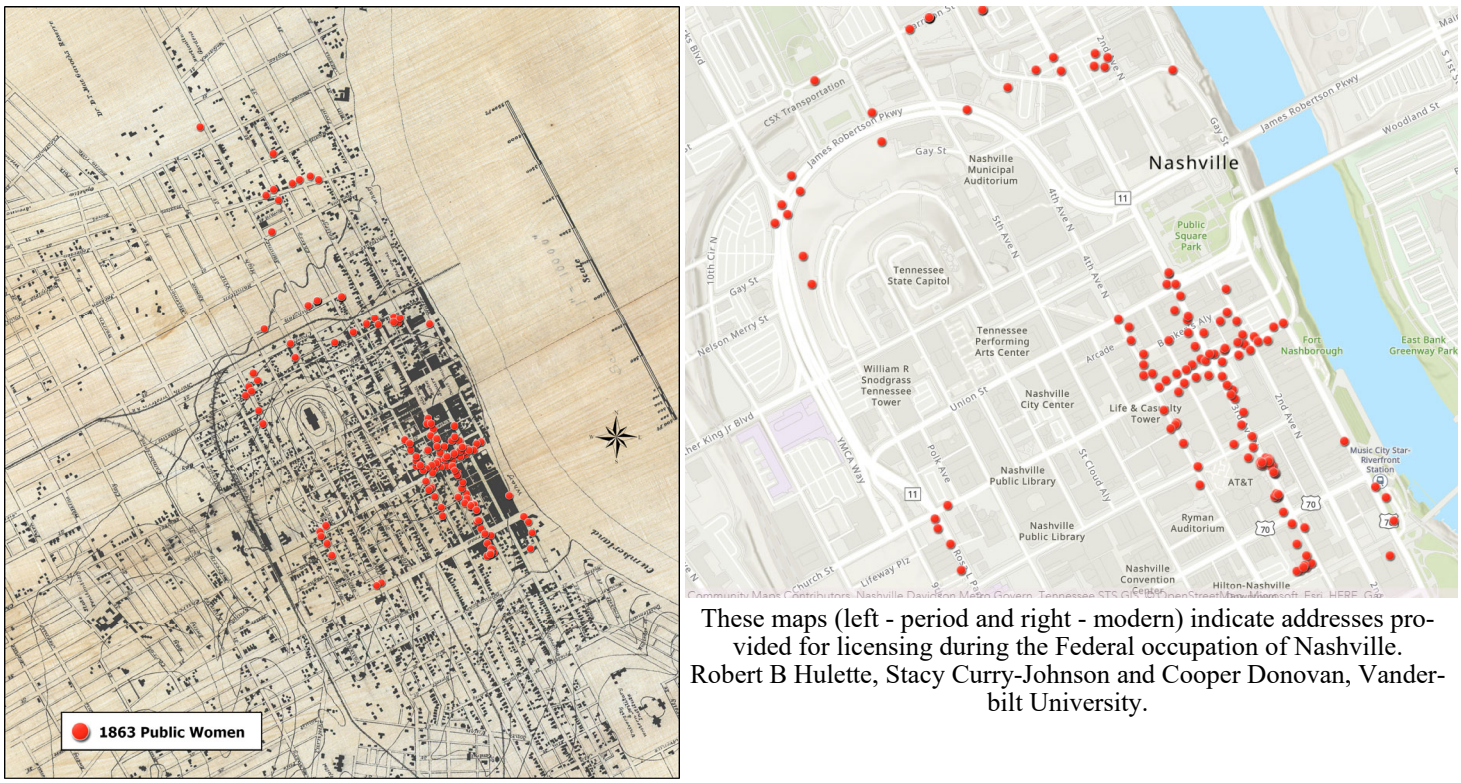
The relaxed toleration ended in 1863 as Brigadier General R. S. Granger noted that officers and medical personnel began to repeatedly petition him to "Save the army from [venereal disease,] a fate worse . . . than to perish on the battlefield." Granger claimed to be "daily and almost hourly beset" by such problems, and while this was perhaps an exaggeration, venereal disease posed a real problem for his troops.

At least 8.2 percent of Union troops would be infected with syphilis or gonorrhea before war's end—nearly half the battle-injury rate of 17.5 percent, even without accounting for those who contracted a disease and didn't know it or didn't mention it. These infections could dramatically decrease a soldier's ability to fight, make him even more vulnerable to other common "camp diseases" and could even be fatal, which all too often they were.

At Nashville, some units had as many as 40% of their soldiers affected. Both Army and civilian physicians attempted to manage the problem with some even setting up clinics near Smokey Row. Unfortunately, the problem was more than they could handle, and treatments, mostly involving mercury, could sideline a man for weeks, if they worked at all. As CPT Ephraim Wilson put it in the winter of 1862-1863: "The Army had a social enemy to contend with which seriously threatened its very existence…the women of the town."

Union officials in Nashville, certain the city's ladies of the night were responsible for the sexual plague, hit upon what seemed like the simplest solution: If they couldn't stop soldiers from visiting local prostitutes, local prostitutes could simply be made *non-local*. Indeed, the *Nashville Dispatch* reinforced this view, commenting that the women were "Demoralizing the army . . . [and] their removal is a military necessity"

In the first days of July 1863, MG Rosecrans, commander of the Army of the Cumberland, issued an order to LTC George Spalding, provost marshal of Nashville, to "Without loss of time seize and transport to Louisville all prostitutes found in the city or known to be here." and BG Granger echoed that Spalding was to "Rid the city of diseased prostitutes infesting it."



These maps (left - period and right - modern) indicate addresses provided for licensing during the Federal occupation of Nashville. Robert B Hulette, Stacy Curry-Johnson and Cooper Donovan, Vanderbilt University.

By July 9th, the *Nashville Daily Press* reported that the roundup of the "sinful fair" began, and other newspapers reported that "squads of soldiers" were "engaged in the laudable business of heaping furniture out of the various dens and then tumbling their disconsolate owners after."

According to CPT Wilson "Fifteen hundred of them at a single time were gathered up and placed aboard a train and were compelled to leave and conducted under guard to Louisville. Louisville at first objected to receiving such a formidable array of unwelcome guests, but finally consented to do so, and Nashville was afterward all the happier and better off for their conspicuous absence." Granger also later sent some 300 soldiers with various venereal diseases to hospitals in Louisville as well.

The women, of course, had not agreed to this relocation plan and soon found their way back to Nashville, simply getting off the trains as soon as they could. Spalding searched for a more effective solution until he met John Newcomb, owner of a brand-new steamboat, the *Idahoe*. To Newcomb's horror, Spalding, backed by Rosecrans and other officials ordered Newcomb to take his new boat on a maiden voyage northward (ideally to Louisville, but Spalding wasn't particular) with 111 of Nashville's most infamous prostitutes as passengers. Newcomb and his crew of three were given rations enough to last the passengers to Louisville, but otherwise they were on their own. The local press delighted in the story, encouraging readers to "bid goodbye to those frail sisters once and for all."

The voyage encountered challenges unexpected by commanders nearly from its inception. Guards on board had to keep a constant eye peeled in both directions: making sure women didn't jump overboard to escape, while also making sure men didn't swim out and climb aboard for some women were soliciting business along the way by shouting to men on shore as they made their way up the river. When the *Idahoe* reached Louisville, city leaders rowed out to meet it and said, "You're not dumping them here!" and sheriff's deputies were waiting with shotguns at the landing to back up that order, even preventing the *Idahoe* from docking for supplies.

The now well-known ship headed upriver to Cincinnati, where the same thing happened as the Cincinnati *Gazette* reported, "There is not much desire on the part of our authorities to welcome such a large addition to the already overflowing numbers engaged in their peculiar profession."

In fact, the journey of the "Floating whorehouse" was becoming national news across the North. Newspapermen all along the Ohio River followed the boat's movements, eagerly reporting every movement and detail. A Cleveland Ohio newspaper wrote, "The majority are a homely, forlorn set of degraded creatures… they managed to smuggle a little

liquor on board, which gave out on the second day. Several became intoxicated and indulged in a free fight, with knives being used."

Captain Newcomb now set course for St. Louis. This time the mayor sent a delegation that met the boat long before it even came close to that city with the simple message, "You're not going to make Nashville's problem *our* problem!"

Finally, the *Idahoe* returned to Nashville after its 28-day trip, with 98 of its original 111 passengers and crowds of people gathered at the wharf, jostling each other to see the ships' "precious freight" return to "resume their former modes of life." Once back in Nashville, Newcomb demanded compensation for damages to his ship and insisted someone from the Army perform an inspection. On August 8, 1863, a staff officer reporting to Rosecrans found that the ship's stateroom had been "badly damaged, the mattresses badly soiled," and recommended Newcomb be paid $1,000 in damages, plus $4,300 to cover the food and "medicine peculiar to the diseased of women in this class." Despite this recommendation, however, Newcomb's request got bogged down in administrative processing and he was not immediately paid.

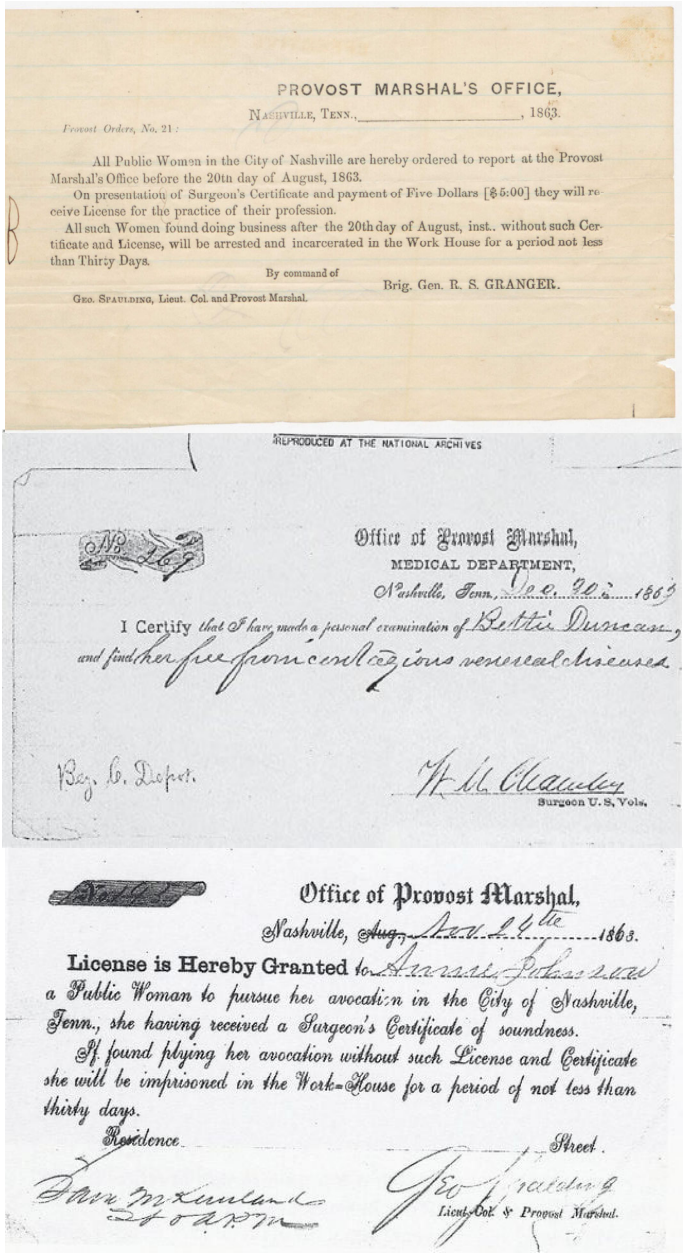
Resigning himself to the fact that prostitutes would ply their trade and soldiers would engage them, Spalding reasoned that the women might as well sell sex *safely,* and so out of sheer desperation, he and the Union Army created in Nashville's the country's first system of legalized prostitution. Spalding's proposal was simple: Each prostitute would register herself, obtaining for $5 a license entitling her to work as she pleased. A doctor approved by the Army would be charged with examining prostitutes each week, a service for which each woman would pay a 50-cent fee. Engaging in prostitution without a license, or failing to appear for scheduled examinations, would result in arrest and a jail term of 30 days.

Along with this new regulatory approach, women found to have venereal diseases would be sent to Hospital Number 11 for the treatment of such ailments. Ironically, it was established in the home of the former Catholic bishop, paid for in part by the weekly fees. Soldiers who had venereal diseases were sent to Hospital Number 15 elsewhere in the city for treatment, as well.

With Spalding's program for military management of the problem, the city council began to hope that legalization would solve their dilemma of purifying the public space, and, on August 24th, it voted to "postpone indefinitely its lingering consideration of an ordinance proposed to prohibit lewd women from riding in hacks with soldiers."

Once fearful of the law (particularly the military law, given the treatment they had received), Nashville prostitutes took to the system with almost as much enthusiasm as those operating it. One doctor wrote that they felt grateful to no longer turn to "quacks and charlatans" for expensive and ineffective treatments and eagerly showed potential customers their licenses to prove that they were disease-free.

By the spring of 1864, 456 prostitutes had registered, 92 of whom had been treated for venereal disease. Although the rest of the edict seems to have been routinely enforced, exams seldom occurred on a weekly basis, perhaps because there were too many prostitutes and not enough surgeons. Fees were soon



PROVOST MARSHAL'S OFFICE,

NASHVILLE, TENN., _____, 1863.

Provost Orders, No. 21:

All Public Women in the City of Nashville are hereby ordered to report at the Provost Marshal's Office before the 20th day of August, 1863.

On presentation of Surgeon's Certificate and payment of Five Dollars [$5:00] they will receive License for the practice of their profession.

All such Women found doing business after the 20th day of August, inst.. without such Certificate and License, will be arrested and incarcerated in the Work House for a period not less than Thirty Days.

By command of

Brig. Gen. R. S. GRANGER.

GEO. SPAULDING, Lieut. Col. and Provost Marshal.

REPRODUCED AT THE NATIONAL ARCHIVES

No. 167

Office of Provost Marshal,

MEDICAL DEPARTMENT,

Nashville, Tenn., Dec. 20th 1863

I Certify that I have made a personal examination of Bettie Duncan, and find her free from constitutional venereal diseases

Asst. Surg. U. S. Depot.

H. M. Chandler

Surgeon U. S. Vols.

No. 167

Office of Provost Marshal,

Nashville, Aug. Nov. 24th 1863.

License is Hereby Granted to Annas Peterson

a Public Woman to pursue her avocation in the City of Nashville, Tenn., she having received a Surgeon's Certificate of soundness.

If found plying her avocation without such License and Certificate she will be imprisoned in the Work-House for a period of not less than thirty days.

Residence

Street

Dan McCumland

Geo Spaulding

Lieut. Col. & Provost Marshal.

(top) Notice of Licensing Program; (middle) Prostitution Certificate of Health; (bottom) Prostitution License. National Archives.

raised to $1 and the interval increased to two weeks, and compliance rapidly became universal. Similarly, brothel madams could no longer pay off fines to evade the law and paying off local authorities became more difficult. Authorities did make 12 arrests in the first month and 28 in the second, but after that arrests were no longer common. In fact, a similar program was set up in Memphis.

By the summer of 1864, one doctor at the hospital remarked on a "marked improvement" in the licensed prostitutes' physical and mental health, noting that at the beginning of the initiative the women had been characterized by use of crude language and little care for personal hygiene, but were soon virtual models of "cleanliness and propriety." The head surgeon, Robert Fletcher, claimed that after the first 6 months of regulation, only 13 of the nearly 31,000 soldiers admitted to Hospital Number 15 had contracted their infections in Nashville. A *New York Times* reporter visiting Nashville was equally impressed, noting that the expenses of the program from September to June 1863 totaled just over $6,000, while tax income on "lewd women" reached $5,900.

Inspecting and hospitalizing both men and women for venereal disease also had the interesting effect of allowing medical officers to note how venereal disease spread. Dominant ideology, both before and after the war, accused the prostitute as "the cause of numerous infections, not only to her male companions, but to the innocent wives and children at home." However, Dr William Chambers, the physician largely responsible for the medical inspections of those seeking a license (and for making house calls when appropriate), noted a curious phenomenon in February 1864. Prior to February, the hospitals had recorded a fairly constant rate of infected patients. Then, as reenlisted veterans poured into the city, no doubt taking advantage of the furloughs granted for reenlisting, an astonishingly high number of soldiers checked into the male venereal disease ward. Soon after, Chambers noted a corresponding epidemic among registered prostitutes. Since he had regularly examined the women up to that time, he knew that they had been disease-free before the great influx of soldiers. Although few colleagues listened, Chambers concluded that the soldiers had transmitted venereal disease to their otherwise uncontaminated female partners rather than the other way around.

Despite the success of the program in dropping the number of infections among both soldiers and prostitutes, Dr Chambers' findings were not widely accepted for many years as the germ-theory of disease was not widely accepted in the U.S. for several more years. But finally, the *Pacific Medical Journal* argued that legalized prostitution not only helped rid Rosecrans' army of venereal disease, it also had a positive impact on other armies.

Despite its success, the program still had some limitations. Newspapers of the time document numerous opium overdoses in the brothels of Nashville, and other deaths intentional or otherwise were all too common. Fights in brothels were common, and it took considerable effort to keep control of the patrons, especially as the pace of war in the west slowed after December 1864. By the end of the war, the area west of the capital all the way to Smokey Row became known as "Hell's Half Acre" and Nashville residents found the brothels increasingly objectionable. Following a beer-riot in one of the brothels, a fire broke out that engulfed much of the area, and after the restoration of civil governance the program ended in Nashville and Memphis.

Nashville's Provisional Mayor Channing Richards submitted a report on February 11, 1865, stating in part "I shall certainly regret the abandonment of the system, for the result of my own observation has been decidedly favorable to it … I see many advantages to recommend it, for while it does not encourage vice it prevents to a considerable extent its worst consequences."

[Editor's note: Dr Hulette's podcast is on Apple Podcasts and Spotify (@filthinamerica) and free streaming at www.filthinamerica.com . You can also find him on Instagram and X (@filthinamerica).]

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— 27 July 1775 —

This Movement Made the Removal of the Wounded a Task of Considerable Magnitude: Medical Operations in the Army of the Cumberland, 1862-1863

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Battle of Chickamauga, September 20, 1863. The New York Public Library.

Introduction

Students of American Civil War medical history will probably recognize the role played by Major Jonathan Letterman. He was appointed the Medical Director for the Army of the Potomac in July 1862, where he implemented a systematic plan for medical care and casualty evacuation. What is often overlooked are the advantages Letterman enjoyed, ready access to rail and water networks, and the hospitals of nearby Washington, D.C. Matters were not the same in the Western Theater, a vast region where medical resupply and evacuation depended on railroads vulnerable to Rebel raiders. In time, the medical system in the Western Theater evolved from an under-resourced department into a highly structured evacuation and treatment network under the leadership of competent and innovative medical directors. This article will trace the evolution of medical operations in the Army of the Cumberland during the Tennessee Campaign of 1862-1863.

General Rosecrans Takes Charge

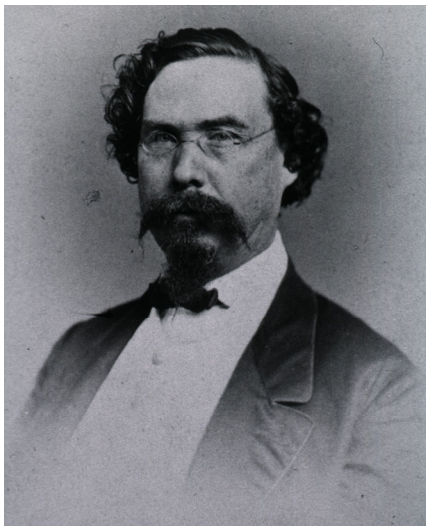
When United States (U.S.) Major General William S. Rosecrans took command of the redesignated Army of the Cumberland (AoC) in October 1862, he inherited an army with low morale and chronic supply shortages due to Rebel raids. Rosecrans also found his tactical medical services in shambles, as his predecessor Major General Don Carlos Buell had failed to allocate wagons, tentage, and manpower to medical director Robert Murray. Union casualties at Perryville had consequently suffered greatly, and many would have died except for aid rendered by United States Sanitary Commission volunteers. Assuming a casualty survived the trip, they would receive treatment at a general hospital and convalescent Camp Murray set up at Elizabethtown, Kentucky (bulk of the forces were within 45 miles) with minor cases returned to duty. Soldiers who required further care were shipped by railcar and steamship to general hospitals located at St. Louis, Missouri, and Cincinnati, Ohio.

By contrast, Rosecrans had demonstrated the ability to organize, train and discipline volunteer forces during his command of Union forces at Corinth, Mississippi. Rosecrans did the same with the AoC, weeding out incompetent officers, reorganizing the supply system, and getting his soldiers fed and paid on time. He reorganized the army into three corps of three divisions and added additional mounted troops. Rosecrans appointed Surgeon Ebenezer Swift as the new army medical director, who received authority to stockpile medical supplies at the regiment and corps level and conduct fitness reviews of the army's medical officers. Swift succeeded in procuring ambulances and hospital wagons, although he failed to gain control of the personnel, who remained under the Quartermaster Department.

The Battle of Stones River

The first test of the AoC's medical system came in late December 1862 during an advance against Confederate General Braxton Bragg's Army of Mississippi. The Confederate Army fell back to take up a good position along the Stones River just north of Murfreesboro. Both commanders coincidentally planned a dawn attack on New Year's Eve against the enemy flank, but Bragg's left wing struck first at dawn, causing McCook's corps on the Federal right to collapse. By midday, Rosecrans's army was jackknifed back on the Nashville Pike, with the apex anchored on the Round Forest, a clump of cedars near the road. The Union troops held the Round Forest until dark against uncoordinated Confederate assaults. That night, Rosecrans's army regrouped, with a grand battery of 57 guns placed on high ground overlooking the Stones River. Bragg, meanwhile, received a report that a column of wagons was rolling towards Nashville, presumably the Union Army in retreat. The wagons instead evacuated the wounded to Nashville before returning with needed rations and ammunition. The badly battered armies regrouped on 1 January 1863, and the battle ended anticlimactically on 2 January after Union artillery fire broke up a single division attack on the Federal left. Bragg's army fell back, ceding Murfreesboro and much of middle Tennessee to the Federal Army. Both sides suffered heavily, with over 13,000 Union and 10,000 Rebel casualties.

Medical Director Swift later described the medical operations in his after-action report:



Ebenezer Swift. National Library of Medicine.

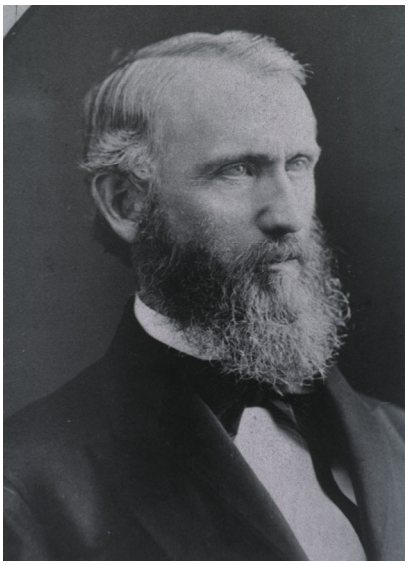
> Before leaving Nashville I had approved of full and complete requisitions… for the three grand divisions [corps] of the army. I had also, in reserve, tents, bedding, & c. for a field hospital of more than 2,500 men which I ordered up from the rear on the 29th, as soon as I learned the enemy had made a stand near Murfreesborough. At the same time, I ordered forward 20 ambulances – all that we had on hand at Nashville. Surgeons were detailed to perform operations, when decided upon after consultation, for dressing, and such other duties as the reception and disposition of the wounded and circumstances required...Early on the morning of the 31st, the enemy…fiercely attacked Johnson's and Davis' divisions, which he forced back; and Sheridan's being heavily pressed, was obliged to recede. The hospitals, wounded, and nearly all the medical supplies of this [right] wing thus fell into the hands of the enemy...The ambulance corps, though temporarily organized, worked admirably. As soon as the fire of the enemy slacked at any point along our lines…the ambulances dashed in at a brisk trot, and snatched our wounded from their picket lines…the enemy did not fire on these brave men, when they knew their humane mission, friend and foe…being equally the objects of their care.

Swift responded to the collapse of the right wing by sending its medical director and the fragments of medical troops "to find suitable buildings on the pike to the rear." Swift then rode towards the center to regroup available ambulances and crews to reinforce medical operations behind the still-intact center and to the left of the Union Army. During 1-2 January, the ambulance corps shuttled the badly wounded to the field hospitals while "…the slightly wounded, and those who were able to ride…I ordered to Nashville, 25 miles to the rear." Swift later commended several of the regiment surgeons for bravery, especially four who remained "…with their wounded comrades when the hospitals of [the left] came within the enemy's lines." Swift closed his report by noting "The rank now common to corps medical directors is most inadequate to the responsibility…attaching to such a position, while the pay and emoluments pertaining thereto are a poor inducement to skillful practitioners to abandon a lucrative practice at home for the drudgery, exposure, and…honors of service with troops in the field."

The First Chattanooga Campaign - The Battle of Chickamauga

Bragg's army withdrew to the Duck River, where both sides spent six months recovering from the ordeal at Stones River. Bragg relied largely on his superior mounted troops to keep the enemy at bay, while the infantry did little

to fortify their positions. Rosecrans did not remain idle, and he kept his command busy preparing to resume the offensive to seize Chattanooga – a key Tennessee railroad hub that controlled access to both Atlanta, Georgia, and the pro-Unionist region around Knoxville, Tennessee. Yet Rosecrans faced many obstacles, particularly reliance on a single railroad line for supplies and reinforcements from Nashville. Rosecrans's new medical director, Surgeon Glover Perin , tried to use two converted railroad cars to evacuate injured soldiers to Nashville, but both cars were damaged in a wreck, forcing medical offices to use empty freight cars to transfer patients northwards.



Glover Perin. National Library of Medicine.

Medical Director Glover Perin prepared for the campaign based on the experiences at Stones River. He reorganized the division ambulance trains, supported by a 1,500-bed mobile hospital at Murfreesboro. However, his control over the trains was tenuous, as the quartermaster still controlled the wagons, while the ambulance masters lacked the authority of commissioned officers. Perin noted: "So seriously were these defects experienced, that I recommended for adoption the plan of an ambulance corps and train arranged in the same basis as that in use in the Army of the Potomac." Perin did succeed in procuring and issuing medical supplies and tents to the division and regimental surgeons. Perin relocated the mobile hospital to Chattanooga to supplement the inadequate 500-bed Confederate hospital found in the city. He believed the bed space was still inadequate, so division surgeons were ordered to evacuate serious cases northwards via specially equipped hospital trains.

The AoC resumed the offensive in June 1863 with a turning maneuver around Bragg's right flank. By 7 July, Bragg's army had abandoned all of Tennessee except for a bridgehead around Chattanooga. Although Rosecrans's advance had been largely bloodless, his supply lines across the rocky Cumberland Plateau were stretched to their limit. After a pause to regroup, Rosecrans feinted above Chattanooga, while his main body crossed the Tennessee River below the city. His maneuver succeeded, and Bragg abandoned Chattanooga on 7 September 1863. Rosecrans was elated as he assumed the Rebels were in flight, but he was fatally mistaken. Bragg had instead positioned his army near La Fayette, Georgia, where he hoped to attack one of Rosecrans's corps. Bragg's lieutenants bungled several attempts, which alerted Rosecrans to consolidate his dispersed corps along Chickamauga Creek. On 18 September, Bragg tried to cut off the Federal line of retreat towards Chattanooga, which precipitated the bloody, two-day Battle of Chickamauga. The Federals held their ground on the first day but collapsed early on 20 September when Confederate Lieutenant General James Longstreet's corps hit a momentary gap in Rosecrans's center. Thousands of bluecoats—including Rosecrans and two of his corps commanders—were driven from the battlefield consequently. United States Major General George H. Thomas, commander of the XIV Corps, recoiled northwards to Horseshoe Ridge to guard the route of retreat for the AoC. Thomas withdrew at dusk after holding his position for several hours against disjointed Rebel assaults—leaving Bragg's army in control of the battlefield.

When the Army consolidated along Chickamauga Creek, Perin consolidated the division hospitals at Crawfish Springs, a location that provided fresh water and access to evacuation routes to Chattanooga. Perin later wrote:

> On the 19th as the battle progressed, the army moved down the valley of the Chickamauga, so that when night closed it was about four miles distant…This movement made the removal of the wounded a task of considerable magnitude, as our loss in wounded on Saturday…about [4,500]. The ambulance trains were worked very steadily until midnight, when almost all of the wounded accessible had been removed and placed in the hospitals…Every effort was made to place the men under shelter…as the night was cold. When this could not be done, the men were arranged in rows near each other, and lines of camp-fires were built at their feet.

The positioning of the hospitals near the fighting made sense for the rapid collection and evacuation of casualties. As the two armies drifted north, Perin established "small depots immediate in rear of the left wing." Then disaster struck in the center, as Perin later described:

> As soon as the right gave way communications with Crawfish Spring, the main hospital depot, was cut off…Surgeon Phelps, US Volunteers, medical director of the Twenty-First Army Corps, and Surgeons Waterman and Griffith…availed themselves of the empty supply trains parked at that point to send the wounded across Mission Ridge…to Chattanooga. Although these officers labored faithfully to remove

> all the wounded…it was found impracticable. Medical officers were therefore detailed to remain, and provisions distributed…to insure them for the benefit of the patients…

Elsewhere, regimental and division surgeons used what vehicles were available to evacuate the seriously wounded. The surgeons still had to leave hundreds of casualties behind on the battlefield, although 1,740 were later retrieved under a flag of truce. The Union troops slipped meanwhile back into Chattanooga, while Bragg's army encircled the city loosely. Losses were heavy on both sides: The 65,000-man Confederate Army of Tennessee incurred an estimated 18,000 casualties (2,300 dead, 14,674 wounded, and 1,468 missing), while the 60,000-man AoC suffered over 16,000 casualties (1,657 dead, 9,756 wounded, and 4,757 captured or missing). Bragg's tactical victory proved hollow, as Rosecrans's army retained control of Chattanooga. With his army too weak to do more, Bragg attempted to starve the Federals into submission.

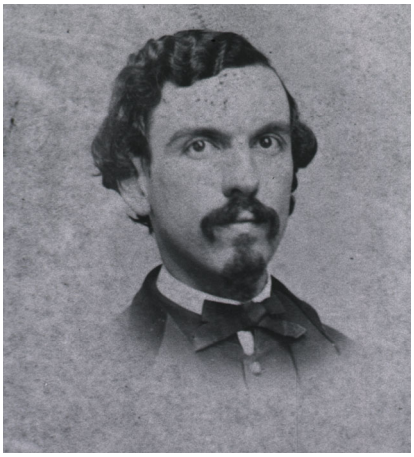
The Second Chattanooga Campaign

Perin and his subordinates managed to ship several hundred patients out of the city before Confederate cavalry cut the lines of communication to Murfreesboro and Bridgeport, Tennessee. Within weeks, the AoC had been placed on half rations, which increased the suffering of the wounded stranded in the city. The Union surgeons did what they could to alleviate the distress of their patients:

> Every effort was made to secure the wounded enough food from the regular ration, including soft bread, but in the absence of vegetables…they exhibited but too plainly the sad evidences of deficient nutrition. Superadded to the deficiency of proper food, a want of fuel was also felt during the latter part of October and all of November. It was very discouraging to the medical attendants to witness the gradual but certain decline of patients who should have recovered, while they felt themselves powerless to apply the proper remedy.

United States President Abraham Lincoln was determined to hold the city and ordered reinforcements rushed to Chattanooga: Major General William T Sherman's 20,000-man Army of the Tennessee, and a 23,000-man detachment from the Army of the Potomac commanded by Major General Joseph Hooker. The newly appointed commander of the U.S. Military Division of the Mississippi, Major General Ulysses S. Grant, arrived to take command of the new army group. One of Grant's first actions was to replace Rosecrans with the "Rock of Chickamauga," Major General George H. Thomas. Grant swung into action, and by 28 October, the "Cracker Line" was open to Bridgeport via river steamer. With the supply lines reopened, the Federal surgeons resumed evacuating serious cases northward and stockpiling medical supplies for the expected counteroffensive. That came in late November 1863, preceded by preliminary attacks at Orchard Knob and Lookout Mountain. After Sherman's attack at Tunnel Hill on 24 November miscarried with heavy losses, Grant ordered Thomas to feint against the seemingly formidable Confederate defenses atop Missionary Ridge. The soldiers of the AoC sought revenge for Chickamauga, and without orders, assaulted up the heights of Missionary Ridge to sweep it clean of Rebel defenders. Bragg's demoralized army abandoned their positions and withdrew down towards Dalton, Georgia behind a rear guard. At a cost of 5,800 casualties, the Union Army had not only saved Chattanooga but had taken the first steps towards Atlanta.

Assistant Surgeon Dallas Bache detailed the medical operations for the Battle of Chattanooga:



Dallas Bache. National Library of Medicine.

> In the middle of November, it became evident from the nature of the preparations around, that a movement against the enemy was intended, and the medical director began his preparations accordingly. Supplies, in addition to those on hand, were ordered from Nashville, and…the available buildings…were again refitted for the occupation of the wounded…The wounded men were more readily and rapidly cared for than any previous battle…The ambulance trains moved rapidly from the town to the front, only a distance of two to three miles and returned with their loads…About January 1st, the new supply table was issued upon the basis of a brigade organization…in use by the army of the Potomac. At the same time the organization of the ambulance corps was completed and rapidly pushed into practice throughout the army.

Unlike earlier battles, the hospitals and ambulances enjoyed cover from enemy fire and had no need to displace during the battle. Still, the rugged terrain of Missionary Ridge and onset of darkness on 24 November 1863 prevented hospital stewards and litter teams to reach Union wounded. Instead, most wounded were carried

down the ridge by their unwounded comrades and deposited near fires to stay warm while awaiting transportation.



George Cooper. National Library of Medicine.

Aftermath and Conclusions

During the following winter, Grant and Sherman formulated the grand strategy that would lead to victory in 1865. All Union armies were ordered to advance simultaneously in the spring, negating the Confederate advantage of interior lines. Grant was promoted to lieutenant general and appointed commander in chief of the Union armies, while Sherman took command of the Military Division of the Mississippi. Sherman would command an army group for the Atlanta campaign: Thomas's AoC, the Army of the Tennessee under Major General James McPherson, and lastly Major General John Schofield's diminutive Army of the Ohio. Surgeon George Cooper served as Sherman's chief medical officer. Under his tenure, the army adopted a standard divisional medical structure but was unable to implement the Letterman system fully. During the march on Atlanta, the army used intermediate mobile general field hospitals—with U.S. Sanitary Commission help—to collect and forward casualties to Chattanooga, thus reducing the burden on the division hospitals. The army could not maintain the practice when Sherman planned to abandon his line of communications during the march on Savannah. Each division was instead allotted a medical train of 30 ambulances plus a medical supply wagon. Cooper's medical officers carefully screened their soldiers to take only the fittest men, and pressured commanders to enforce sanitary measures rigorously. Soldiers lived off the countryside during the march across Georgia, and the diet of fresh meat, sweet potatoes and vegetables contributed to a low sick rate in the force. Consequently, the army maintained an average sick rate of 2%, about half the rate for other Federal armies. When Sherman's army arrived at Savannah, the sick were transferred to army transports in the harbor, which served as floating general hospitals.

As noted in the beginning, this paper presented evidence that the medical system of the AoC evolved into a highly structured evacuation and treatment network under the leadership of competent and innovative medical directors. Their efforts were often hindered by the lack of command authority over both medical personnel, and the ambulances and their associated crews. Those difficulties were surmounted when medical directors established and maintained good relationships with the supported commander, the human factor that determined success and failure in the medical operations of the AoC.

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— 27 July 1775 —

The Civil War's Opioid Crisis

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During the Civil War, opiates were as "important to the surgeon, as gunpowder to the ordnance." No soldier could misunderstand this martial metaphor. Without essential medicines like opium and morphine, Civil War armies would have been unable to withstand the pain and sickness that stalked soldiers during the United States' bloodiest war, when perhaps 750,000 people died and millions returned home with shattered health.

Opium is a very old drug with a long history predating the Civil War. There is archeological evidence of poppy cultivation dating back to the Stone Age. For centuries, doctors recommended opium for myriad ailments. In fact, by the time the Civil War broke out in 1861, opium and its derivatives—including the tincture laudanum and the more potent morphine, which could be administered as salts or via injection—were indicated for 150 distinct ailments. In an era before germ theory, when the causes of most sicknesses remained elusive, doctors prescribed opiates to reliably manage symptoms like pain, diarrhea, coughing, insomnia, and even mental distress. Ordinary folks also recognized that opiates were practically a godsend, and many family recipe books from the 1800s include home remedies loaded with opium. Certainly, American doctors recognized the risk of dependence and poisoning, and medical journals and newspapers from time-to-time featured stories about "opium eating," although these dangers seemed to pale in comparison to opiates' benefits.



Surgical staff of the 164th New York Infantry pose with an apothecary scale and medicine bottles placed atop the U.S. flag. The image illustrates the centrality of medicine to the Union war effort. National Archives.

After Southern soldiers fired on Fort Sumter in April 1861, plunging the country into violent civil war, opiates were immediately pressed into service on both sides to help mitigate the nation's unprecedented health crisis. Medical reports, prescription books, letters, diaries, and even the photographs left behind by Civil War surgeons and hospital workers illustrate the high stock they placed in opiates. When the surgical staff of 164th New York Infantry proudly posed for a traveling photographer from Matthew Brady's studio, the men consciously highlighted the central role that drugs like opium played in Civil War medicine. The crisply uniformed surgeons and attendants sat around a table arrayed with symbols of the Union cause and the medical corps' contribution. A United States (U.S.) flag showed their commitment to putting down the rebellion. A black hospital worker hinted at the prominence of refugees from slavery in military hospitals, where formerly enslaved people performed essential medical tasks like washing, cleaning, and cooking. Symbolically perched atop the flag sat an apothecary scale used for measuring opium, camphor, ipecac, flanked by two large medicine bottles. These images are striking visual representations of the importance of medicine to the Civil War, and of opiates to military healthcare.

The war caused opiate consumption to surge, which in turn helped spark an addiction crisis among veterans. Although Civil War surgeons prescribed opiates for hundreds of maladies, two conditions stood out above the rest—diarrhea and pain. These symptoms came from any number of causes, ranging from battle wounds and accidents to

"camp fevers" and gastrointestinal infections. Sick and wounded troops received medical care in various clinical sites, depending on timing and the severity of one's health needs. A journey through the wartime healthcare system was akin to moving through concentric circles of hospitals. At each stage, soldiers encountered surgeons who doled out opiates.

In camp, when soldiers got sick from dysentery, chronic diarrhea, or "camp fevers," the first line of medical care was self-doctoring or a visit to the regimental surgeon. Caleb Dorsey Baer, a young Confederate surgeon, suffered from a particularly severe bout of diarrhea in 1861. As armies marshalled, new soldiers swapped microbes and got seasoned into camp life. The spaces where they lived, cooked, and collected water were usually unsanitary and provided a perfect breeding ground for bacteria. Completely incapacitated, Baer fell back upon his antebellum medical training and attempted to solve his urgent problem with opiates. "Have been very unwell all day," he wrote, "having frequent discharges of blood and mucus from my bowels, and intense tenesmus." Baer "could not obtain any ease until I took sufficient morphia to narcotise me almost," so he took "pretty full" doses of morphine for two weeks until the "derangement" of his bowels ceased." "Chronic nephritis and emaciation" kept Isaiah Smith of the 31st Georgia Infantry in and out of the hospital for months in 1862, eventually warranting a discharge from the Confederate Army. Desperate for a cure, Smith scribbled down the ingredients of four different opiate remedies, including a "Dysentery Pill" containing a grain of opium, inside the cover flap of his diary for easy consultation.

Heavy consumption of opiates in camp predictably left some soldiers intoxicated. While the Union and Confederate policies toward alcohol were patchwork and contradictory, military officials mostly looked down on drunkenness in the ranks. The same sentiment applied to narcotics. Although opium intoxication was not a crime, some opium-using soldiers ran afoul of courts-martial, which put defendants up on charges ranging from drunkenness and disorderly conduct to conduct prejudicial to good order and discipline. Patrick J. Warren, private in the 7th New York Artillery, was sentenced to three months of hard labor and a hefty 30 dollar fine (equivalent to more than two months' pay) after beating another soldier bloody. Warren blamed sickness and opiates, explaining that he was "very sick for three months and using Laudanum, Ether, and Morphine." He also guzzled "four or five glasses of beer until I did not know what I was doing." Even when defendants could prove that a surgeon had prescribed the drug, juries rarely considered such evidence to be exculpatory. Sergeant Augustus Hayden of the 11th U.S. Artillery fell asleep at his post in June 1862. During his trial, an army surgeon told the court that he had given Hayden opium, making the defendant sleepy. But that did not matter to the jury, which sentenced Hayden to be reduced back to private. Clearly, the widespread use of opiates in camp during the Civil War had unpredictable and troubling implications. Civil War medicine and military justice thus foreshadowed the epidemic of opiate addiction that would follow the war and the social and political reckoning that ensued.

Medical care in camp often sufficed between battles, but when the guns started firing, Civil War surgeons relocated to pop-up field hospitals on the edges of the battlefield. These could be located in barns, homes, or churches. Any building with a roof to keep the wounded dry would do. Sometimes hospitals spilled into the streets, with thousands of wounded men covering entire towns, like Gettysburg, Pennsylvania. Practically all the public spaces of Washington, D.C. and Richmond, Virginia served as hospitals for the wounded from major battles in Virginia, Maryland, and Pennsylvania. Triage, often involving amputations, was the rule in these bloody spaces.

The painkilling properties of morphine made the drug especially useful in Civil War hospitals both because of the painful nature of battle wounds and because most American doctors had little firsthand surgical experience at surgery when the war began. The treatment of traumatic war wounds was an underdeveloped field, forcing surgeons to catch up quickly. With little familiarity or education, surgeons turned to medical handbooks written by the handful of American doctors with relevant experience. These invaluable texts directed doctors to administer opiates liberally for pain, even more so than antebellum medical literature. The popular *Handbook of Surgical Operations*, written by Stephen Smith of New York City's Bellevue Hospital, recommended opium and morphine as the primary recourse for painful war wounds, especially in hopeless cases of gunshot wounds in the abdomen and chest.

When grievously wounded Union soldiers required long-term medical care, they might be sent to Turner's Lane Hospital in Philadelphia. Doctors like Silas Weir Mitchell, a Union Army contract surgeon and pioneering neurologist, specialized in treating nerve injuries, tragically common during the war. Mitchell and his colleagues conducted several important medical studies at Turner's Lane, meticulously documenting their practices. One innovation, "hypodermic medicine," was "at that time somewhat novel," Mitchell recalled after the war. He and his colleagues realized that morphine injections via a hypodermic syringe, a relatively new European invention, offered much speedier pain relief than oral or topical opiates, which had been common method before the war. Accordingly, Mitchell and the other surgeons at Turner's Lane gave copious injections to injured men. One soldier received "half a grain to a grain of morphia…injected thrice a day." He "finally recovered after having used nearly four hundred injections." Granted this soldier needed pain relief. But such constant injections made addiction a likely outcome.

The practice pioneered at Turner's Lane soon caught on elsewhere. D. P. Deichler, a young lieutenant in the 69th Pennsylvania Infantry, was shot in the hip at Hatcher's Run, Virginia in March 1865. The bullet tore its way through Deichler's colon, blowing a mammoth exit wound in the small of his back. The ball missed his spinal cord by centimeters, perhaps making up for Deichler's bad luck at being shot just a few weeks before the war's end. Immobilized and oozing feces through the hole in his back, Deichler seemed doomed. Taking a cue from Mitchell and his Turner's Lane experiments, Union surgeons at Armory Square Hospital in Washington, D.C. dosed the dying lieutenant insensible with a quarter grain of morphine every two hours for 27 days and waited for him to die. In a morphine haze, Deichler hanged in limbo between life and death. When Deichler inexplicably got better in late April, the astonished surgeons had their specimen pose for a photo that was ultimately submitted to the newly established Army Medical Museum. The historical record reveals little else about Deichler's post-war fate, but such heavy use of hypodermic morphine on patients who would ultimately survive their injuries raised the possibility, or even the likelihood, of addiction. Hypodermic morphine use spread like wildfire after the war, which helped make the hypodermic syringe a staple in modern medicine.



Photograph exhibiting what remained of Lieutenant D.P. Deichler's painful gunshot wound after it healed. Like many wounded Civil War soldiers, he received hypodermic morphine injections for pain administered an extended period of time. *Medical and Surgical History of the War of the Rebellion*.

Opiates helped men survive the war, but they also exposed survivors to blowback after discharge from the Army. Taboos surrounding opiate addiction, often called "opium slavery," were fierce and deeply embedded into American society, as the Army courts-martial hinted during the war. It did not matter that army surgeons originally introduced veterans to addictive substances. In the eyes of government officials, families, and communities, when veterans returned home from the Civil War addicted to morphine, *they* became the problem. Before the criminalization of opiates (an early twentieth century development), the federal government and the states used military entitlements, among other institutions, to police addiction, unfairly so in the eyes of veterans caught up in the growing post-Civil War addiction epidemic.

For example, surgeons gave morphine to Perry Bowser, a Union soldier, sick with fever at a Vicksburg military hospital in 1864. He soon became addicted. But try as he might to explain his situation to officials at the U.S. Pension Bureau, Bowser could not find an understanding ear. Over and over during the 1880s and 1890s, Bowser applied for a fair pension as compensation for his military service, as did millions of Civil War veterans. But where most Union veterans were successful, Bowser was denied because of pension officials considered opiate addiction to be a "vicious habit," even when it stemmed directly from wartime disabilities. Bowser never received what was due him before his death in 1915 of "chronic morphinism."

In the end, thousands of Civil War combatants became addicted to opiates and suffered similar fates. Their stories in part characterize the first wave of mass addiction in American history. Scholars describe the post-war decades as the era of America's first opioid crisis. Tragically, more than a century and half later, this Civil War-era history bears striking resemblance to today's ongoing opioid crisis, which has affected numerous twenty-first century veterans.

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Steam-mill used as a medical depot during the battles at Chancellorsville, 1863. *Harper's Weekly,* May 23, 1863 . National Library of Medicine.

The Letterman Plan: From Battlefield Blueprint to Emergency Medical Care



Original artwork by Fran Trachta. U.S. Army Medical Department Museum

An exciting documentary is in the works from Letterman Legacy LLC through Victory Village (https://www.vvvets.org/), a non-profit veteran community organization that will highlight the story of Surgeon Jonathan Letterman in the American Civil War. Considered the Father of Modern Battlefield Medicine and Emergency Medical Services, little is known about Letterman except by a few within military medicine. Letterman's legacy goes far beyond the Civil War. Most people today see his influence everyday but do not realize it. This story aims to change that.

See the proof of concept video:
https://youtu.be/4pInGStgkpc

Keep up with "behind-the-lens" updates on social media:
https://www.facebook.com/SurgeonLetterman?mibextid=wwXIfr&mibextid=wwXIfr

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